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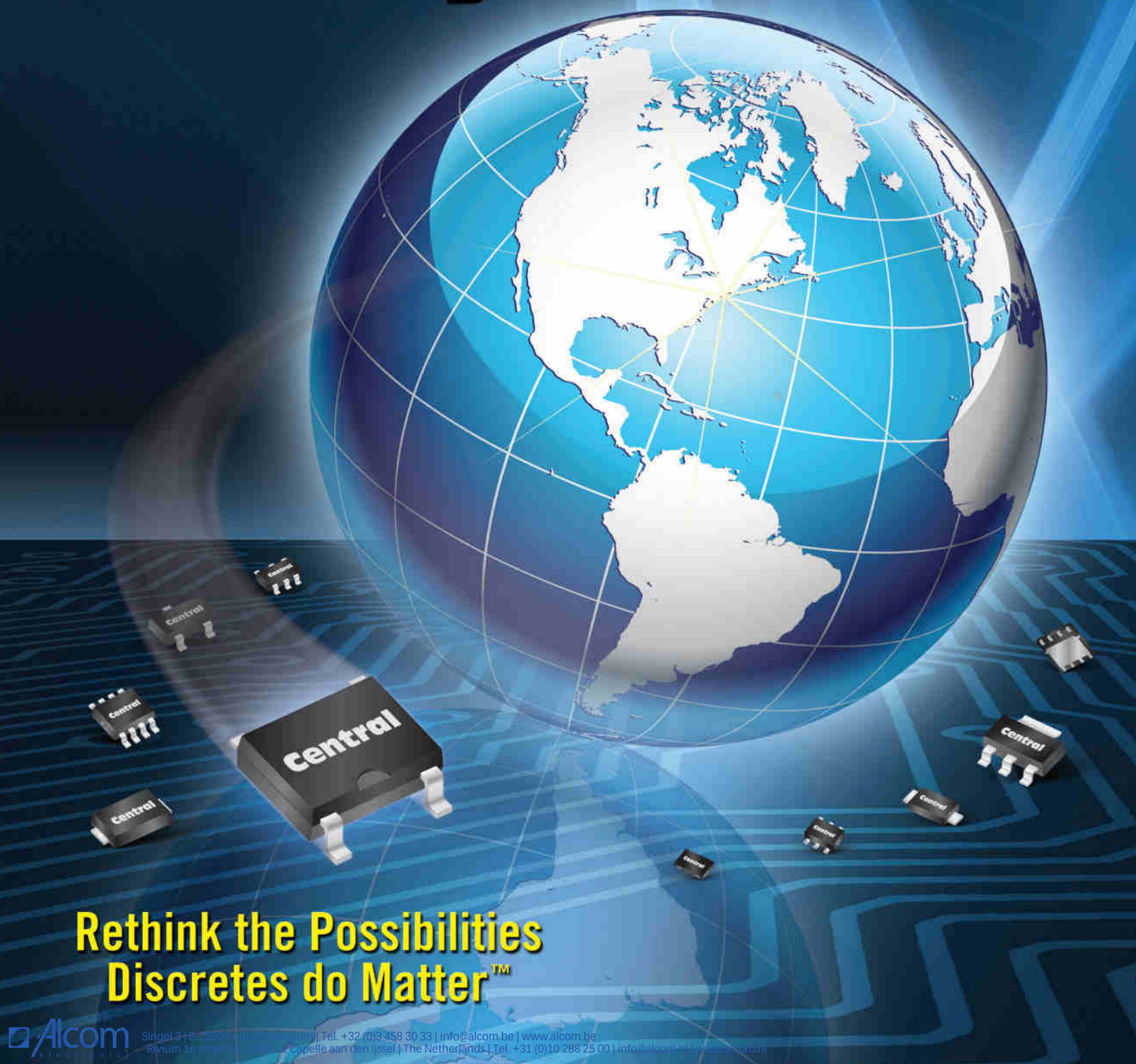
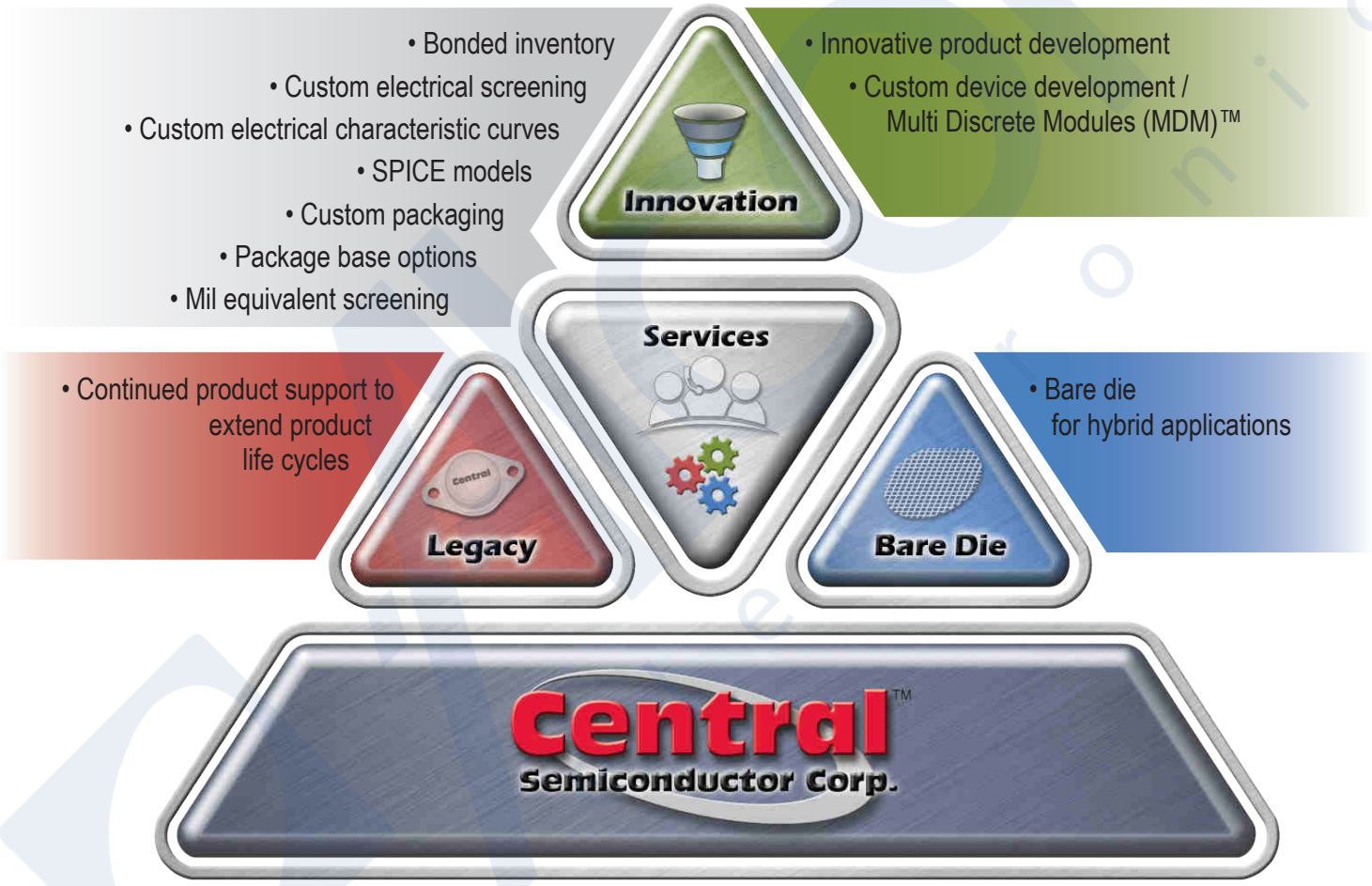
surface mount selection guide



Rethink the Possibilities
Discretes do Matter™



Over 40 years of outstanding products and support

Surface Mount Selection Guide

This selection guide provides designers with the key electrical characteristics for each of the surface mount discrete semiconductors manufactured by Central Semiconductor. The guide is organized by device type and includes small signal transistors, MOSFETs, bipolar power transistors, diodes, protection devices, rectifiers, thyristors, and Multi Discrete Modules. Each section is divided by sub classifications within each type, such as low $V_{CE(SAT)}$ transistors and low leakage diodes. An alpha-numeric index is provided for easy reference.

An online parametric search is also available at www.centralsemi.com/parasearch.
For further information please contact Central's Sales Support Team directly at 631-435-1110.

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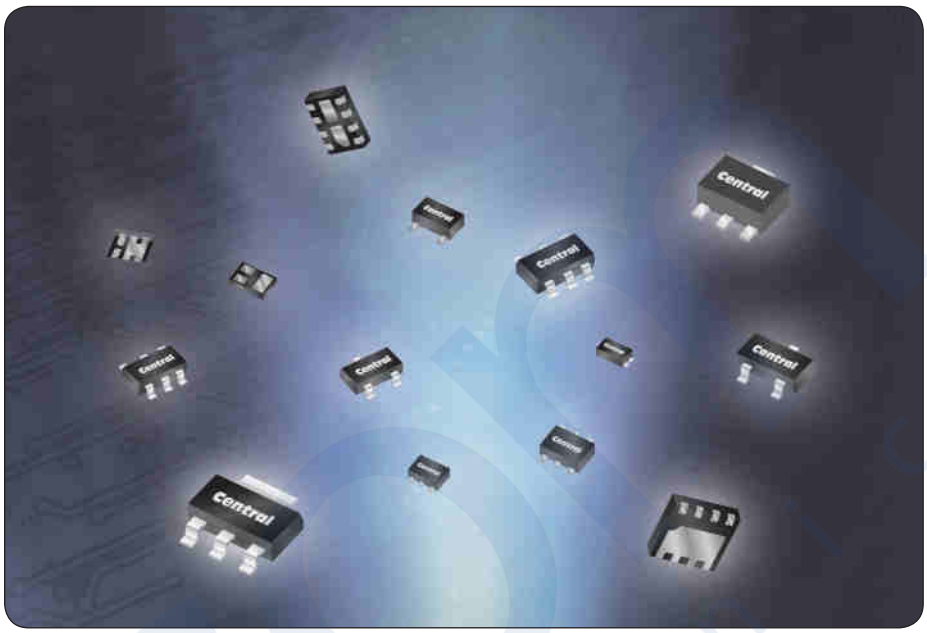


Small Signal Transistors

General Purpose Amplifiers/Switches

Devices are listed in order of descending breakdown voltage.

	FAMILY	I_C (A) MAX	BV_{CBO} (V) MIN	BV_{CEO} (V) MIN	BV_{EBO} (V) MIN	I_{CBO} @ V_{CB} * I_{CEV} @ V_{CE} (nA) MAX	(V)	h_{FE} MIN	h_{FE} MAX	@ V_{CE} (V)	@ I_C (mA)	$V_{CE(SAT)}$ (V) MAX	@ I_C (mA)	C_{ob} (pF) MAX	f_T (MHz) MIN	NF (dB) MAX	t_{off} (ns) MAX
	NPN																
E	2222AE	0.6			6.0	10	60	100	300	10	150		500	8.0	300	4.0	285
	8099	0.5	80	80	6.0	100	80	100	300	5.0	1.0	0.4	100	6.0	150	–	–
	2222A	0.6	75	40	6.0	10	60	100	300	10	150	1.0	500	8.0	300	4.0	285
E	3904E	0.2	60	40	6.0	50*	30	100	300	1.0	10		50	4.0	300		250
	3904	0.2	60	40	6.0	50*	30	100	300	1.0	10	0.3	50	4.0	300	5.0	250
	3920	0.2	60	50	7.0	100	60	120	560	6.0	1.0	0.4	50	3.5	300	–	–
	4401	0.6	60	40	6.0	100*	35	100	300	1.0	150	0.75	500	6.5	250	–	255
	PNP																
E	2907AE	0.6	**90**	60	5.0	10	50	100	300	10	150	**0.7**	500	8.0	200	–	100
	8599	0.5	80	80	5.0	100	80	100	300	5.0	1.0	0.4	100	4.5	150	–	–
	2907A	0.6	60	60	5.0	10	50	100	300	10	150	1.6	500	8.0	200	–	100
E	3906E	0.2	**60**	40	**6.0**	50*	30	100	300	1.0	10	**0.2**	50	4.0	300	4.0	250
	3906	0.2	40	40	5.0	50*	30	100	300	1.0	10	0.4	50	4.5	250	4.0	300
	4403	0.6	40	40	5.0	100*	35	100	300	2.0	150	0.75	500	8.5	200	–	255
	NPN & PNP																
	2222A (NPN) + 2907A (PNP)	0.6	75	40	6.0	10	60	100	300	10	150	1.0	500	8.0	300	4.0	285
		0.6	60	60	5.0	10	50	100	300	10	150	1.6	500	8.0	200	–	100
E	3904E (NPN) + 3906E (PNP)	0.2	60	40	6.0	50*	30	100	300	1.0	10		50	4.0	300		250
		0.2		40		50*	30	100	300	1.0	10		50	4.0	300	4.0	250
	3904 (NPN) + 3906 (PNP)	0.2	60	40	6.0	50*	30	100	300	1.0	10	0.3	50	4.0	300	5.0	250
		0.2	40	40	5.0	50*	30	100	300	1.0	10	0.4	50	4.5	250	4.0	300
	4401 (NPN) + 4403 (PNP)	0.6	60	40	6.0	100*	35	100	300	1.0	150	0.75	500	6.5	250	–	255
		0.6	40	40	5.0	100*	35	100	300	2.0	150	0.75	500	8.5	200	–	255

E Indicates Enhanced Specification Device. Enhanced Spec in Red and

Indicates Sorted Columns.

Package dimensions shown are maximum values in mm.

FAMILY	TLM322S	SOT-923	SOT-953	SOT-883L	SOT-523	SOT-563	SOT-323	SOT-363	SOT-23	SOT-26	SOT-89	SOT-223
	 2.05 x 2.05 x 0.6	 1.10 x 0.65 x 0.41	 1.05 x 1.05 x 0.5	 1.05 x 0.65 x 0.4	 1.7 x 1.7 x 0.78	 1.7 x 1.7 x 0.6	 2.2 x 2.2 x 1.1	 2.2 x 2.3 x 1.1	 3.05 x 2.49 x 1.09	 3.0 x 3.0 x 1.2	 4.7 x 4.5 x 1.7	 6.7 x 7.3 x 1.8
2222AE									CMPT2222AE			
8099	CTLT8099-M322S					CMLT8099 (2x) CMLT8099M (2x Matched)			CMPT8099			
2222A					CMUT2222A	CMLT2222A (2x)	CMST2222A	CMKT2222A (2x)	CMPT2222A	CMXT2222A (2x)	CXT2222A	CZT2222A
3904E		CMBT3904E	CMNT3904E	CET3904E		CMLT3904E (2x)			CMPT3904E			
3904					CMUT3904		CMST3904	CMKT3904 (2x)	CMPT3904	CMXT3904 (2x)	CXT3904	CZT3904
3920								CMKT3920 (2x)				
4401					CMUT4401				CMPT4401			
2907AE									CMPT2907AE			
8599									CMPT8599			
2907A					CMUT2907A	CMLT2907A (2x)	CMST2907A	CMKT2907A (2x)	CMPT2907A	CMXT2907A (2x)	CXT2907A	CZT2907A
3906E		CMBT3906E	CMNT3906E	CET3906E		CMLT3906E (2x)			CMPT3906E			
3906					CMUT3906		CMST3906	CMKT3906 (2x)	CMPT3906	CMXT3906 (2x)	CXT3906	CZT3906
4403					CMUT4403				CMPT4403			
2222A (NPN) + 2907A (PNP)						CMLT2207 (2x)		CMKT2207 (2x)		CMXT2207 (2x)		
3904E (NPN) + 3906E (PNP)						CMLT3946E (2x)						
3904 (NPN) + 3906 (PNP)								CMKT3946 (2x)		CMXT3946 (2x)		
4401 (NPN) + 4403 (PNP)						CMLT4413 (2x)						

(2x) under part number indicates two devices in one package.
(4x) under part number indicates four devices in one package.

Low Noise Amplifiers

	FAMILY	I_C (A) MAX	BV_{CBO} (V) MIN	BV_{CEO} (V) MIN	BV_{EBO} (V) MIN	I_{CBO} @ V_{CB} (nA) MAX	(V)	h_{FE} MIN	h_{FE} MAX	@ V_{CE} (V)	@ I_C (mA)	$V_{CE(SAT)}$ (V) MAX	@ I_C (mA)	C_{ob} †TYP (pF) MAX	f_T †TYP (MHz) MIN	NF (dB) MAX	t_{off} (ns) MAX
												Devices are listed in order of ascending NF. S					
	NPN																
	5089	0.05	30	25	4.5	50	15	400	1,200	5.0	0.1	0.5	10	4.0	50	2.0	–
	930	0.03	45	45	5.0	10	45	100	300	5.0	0.01	1.0	10	8.0	30	3.0	–
	2484	0.05	60	60	6.0	10	45	250	–	5.0	1.0	0.35	1.0	6.0	–	3.0	–
	5088	0.05	35	30	4.5	50	20	300	900	5.0	0.1	0.5	10	4.0	50	3.0	–
E	5088E	0.1	**50**	**50**	**5.0**	50	20	300	900	5.0	0.1	0.1	10	4.0	**100**	3.0	–
	6428	0.2	60	50	6.0	10	30	250	650	5.0	0.1	0.6	100	3.0	100	–	–
	6429	0.2	55	45	6.0	10	30	500	1,250	5.0	0.1	0.6	100	3.0	100	–	–
	PNP																
	5087	0.05	50	50	3.0	50	35	250	800	5.0	0.1	0.3	10	4.0	40	2.0	–
E	5087E	0.1				50	20	300	900	5.0	0.1	0.1	10	4.0		3.0	–
	5086	0.05	50	50	3.0	50	35	150	500	5.0	0.1	0.3	10	4.0	40	3.0	–
	992	0.05	110	110	5.0	–	–	200	800	6.0	1.0	0.3	10	3.0	50	3.0	–
	NPN & PNP																
E	5088E (NPN) +	0.1	**50**	**50**	**5.0**	50	20	300	900	5.0	0.1	0.1	10	4.0	**100**	3.0	–
	5087E (PNP)	0.1	**50**	**50**	**5.0**	50	20	300	900	5.0	0.1	0.1	10	4.0	**100**	3.0	–
	5088 (NPN) +	0.05	35	30	4.5	50	20	300	900	5.0	0.1	0.5	10	4.0	50	3.0	–
	5087 (PNP)	0.05	50	50	3.0	50	35	250	800	5.0	0.1	0.3	10	4.0	40	2.0	–

High Current

S Devices are listed in order of descending breakdown voltage.

	NPN																
	853	6.0	200	100	6.0	10	150	100	300	2.0	2,000	0.05	100	38†	190†	–	–
	3019	0.5	120	80	7.0	10	90	100	300	10	150	0.5	500	12	100	4.0	–
	A06	0.5	80	80	4.0	100	80	100	–	1.0	100	0.25	100	–	100	–	–
E	491E	1.0	80	60	5.0	100	60			5.0	500		500	10	150	–	–
	651	2.0	80	60	5.0	100	80	75	–	2.0	500	0.5	2,000	–	75	–	–
	3410	1.0	40	25	6.0	100	40	100	300	1.0	100	0.45	1,000	10	100	–	–
	68	0.8	25	20	5.0	100	25	85	375	1.0	500	0.5	1,000	–	65	–	–
	PNP																
	953	5.0	140	100	6.0	50	100	100	300	1.0	1,000	0.05	100	45†	150†	–	–
	4033	0.5	80	80	5.0	50	60	100	300	5.0	100	0.5	500	20	100	–	–
	A56	0.5	80	80	4.0	100	80	100	–	1.0	100	0.25	100	–	50	–	–
E	591E	1.0	80	60	5.0	100	60			5.0	500		500	10	150	–	–
	751	2.0	80	60	5.0	100	80	75	–	2.0	500	0.5	2,000	–	75	–	–
	7410	1.0	40	25	6.0	100	40	100	300	1.0	100	0.45	1,000	15	100	–	–
	69	1.0	25	20	5.0	100	25	85	375	1.0	500	0.5	1,000	–	65	–	–
	NPN & PNP																
	3410 (NPN) +	1.0	40	25	6.0	100	40	100	300	1.0	100	0.45	1,000	10	100	–	–
	7410 (PNP)	1.0	40	25	6.0	100	40	100	300	1.0	100	0.45	1,000	15	100	–	–

E Indicates Enhanced Specification Device. Enhanced Spec in Red and S Indicates Sorted Columns.

Tiny Leadless Module™

Package dimensions shown are maximum values in mm.

FAMILY	TLM621	TLM832D	TLM833S	SOT-523	SOT-563	SOT-323	SOT-363	SOT-23	SOT-89	SOT-223
	 2.15 x 1.15 x 0.8	 3.1 x 2.1 x 1.0	 3.15 x 3.15 x 1.0	 1.7 x 1.7 x 0.78	 1.7 x 1.7 x 0.6	 2.2 x 2.2 x 1.1	 2.2 x 2.3 x 1.1	 3.05 x 2.49 x 1.09	 4.7 x 4.5 x 1.7	 6.7 x 7.3 x 1.8
5089							CMKT5089M10 (2x Matched)	CMPT5089		
930								CMPT930		
2484								CMPT2484		
5088							CMKT5088 (2x)	CMPT5088		
5088E				CMUT5088E	CMLT5088E (2x) CMLT5088EM (2x Matched)			CMPT5088E		
6428								CMPT6428		
6429								CMPT6429		
5087							CMKT5087 (2x)	CMPT5087		
5087E				CMUT5087E	CMLT5087E (2x) CMLT5087EM (2x Matched)		CMKT5087E (2x)	CMPT5087E		
5086								CMPT5086		
992								CMPT992		
5088E (NPN) + 5087E (PNP)					CMLT5078E (2x)					
5088 (NPN) + 5087 (PNP)							CMKT5078 (2x)			
853			CTLT853-M833S						CXT853	CZT853
3019								CMPT3019	CXT3019	CZT3019
A06								CMPTA06		
491E					CMLT491E			CMPT491E	CXT491E	
651										CZT651
3410	CTLT3410-M621	CTLM3410-M832D (2x)		CMUT3410	CMLT3410 (2x)	CMST3410		CMPT3410	CXT3410	
68									CBCX68	CBCP68
953			CTLT953-M833S						CXT953	CZT953
4033								CMPT4033	CXT4033	CZT4033
A56								CMPTA56		
591E					CMLT591E			CMPT591E	CXT591E	
751										CZT751
7410	CTLT7410-M621	CTLM7410-M832D (2x)		CMUT7410	CMLT7410 (2x)	CMST7410		CMPT7410	CXT7410	
69									CBCX69	CBCP69
3410 (NPN) + 7410 (PNP)		CTLM3474-M832D (2x)			CMLT3474 (2x)					

(2x) under part number indicates two devices in one package.
(4x) under part number indicates four devices in one package.

Central™ Semiconductor Corp.

RF Oscillator

	FAMILY	I_C (A) MAX	BV_{CBO} (V) MIN	BV_{CEO} *BV_{CES} (V) MIN	BV_{EBO} (V) MIN	I_{CBO} @ V_{CB} (nA) MAX	(V)	h_{FE} MIN	h_{FE} MAX	@ V_{CE} (V)	@ I_C (mA)	$V_{CE(SAT)}$ (V) MAX	@ I_C (mA)	C_{ob} (pF) MAX	f_T (MHz) MIN	NF (dB) MAX	t_{off} (ns) MAX
	Devices are listed in order of descending f_T.														S		
NPN	5179	0.05	20	12	2.5	20	15	25	–	1.0	3.0	0.4	10	1.0	900	4.5	–
NPN	H10	0.05	30	25	3.0	100	25	60	–	10	4.0	0.5	4.0	0.7	650	–	–
NPN	918	0.05	30	15	3.0	10	15	20	–	1.0	3.0	0.4	10	1.7	600	6.0	–
PNP	H81	0.05	20	20	3.0	100	10	60	–	10	5.0	0.5	5.0	0.85	600	–	–

High Voltage

S Devices are listed in order of descending breakdown voltage.

NPN	A46	0.5	450	450	6.0	100	400	50	200	10	10	0.5	50	7.0	20	–	–
NPN	A44	0.3	450	400	6.0	100	400	50	200	10	10	0.75	50	7.0	20	–	–
NPN	6517	0.5	350	350	5.0	50	250	30	200	10	30	1.0	50	–	40	–	–
E NPN	A42E	0.5	**350**	**350**	6.0	250	200	**50**	–	10	30	**0.35**	50	6.0	**50**	–	–
NPN	A42	0.5	300	300	6.0	100	200	40	–	10	30	0.5	20	3.0	50	–	–
E NPN	5551E	0.6	**250**	**220**	6.0	50	120	**120**	**300**	5.0	10	**0.1**	50	6.0	100	8.0	–
NPN	5551	0.6	180	160	6.0	50	120	80	250	5.0	10	0.2	50	6.0	100	8.0	–
NPN	5551HC	1.0	180	160	6.0	50	120	80	250	5.0	10	0.2	50	15	100	–	–
PNP	A96	0.5	450	450	6.0	100	400	50	200	10	10	0.5	50	7.0	20	–	–
PNP	A94	0.3	400	400	6.0	100	350	50	200	10	10	0.75	50	7.0	20	–	–
PNP	6520	0.5	350	350	5.0	50	250	30	200	10	30	1.0	50	–	40	–	–
E PNP	A92E	0.5				250	200		–	10	30		50	6.0	50	–	–
PNP	A92	0.5	300	300	5.0	250	200	25	–	10	30	0.5	20	6.0	50	–	–
E PNP	5401E	0.6				50	120			5.0	10		50	6.0	100	8.0	–
PNP	5401	0.6	160	150	5.0	50	100	60	240	5.0	10	0.5	50	6.0	100	8.0	–
NPN & PNP	5551 (NPN) +	0.6	180	160	6.0	50	120	80	250	5.0	10	0.2	50	6.0	100	8.0	–
NPN & PNP	5401 (PNP)	0.6	160	150	5.0	50	120	60	240	5.0	10	0.5	50	6.0	100	8.0	–

Saturated Switches

Devices are listed in order of descending f_T. S

NPN	2369	0.5	40	15	4.5	400	20	40	120	1.0	10	0.25	10	4.0	500	–	18
NPN	3646	0.2	40	15	5.0	500*	20	15	–	1.0	300	0.5	300	5.0	350	–	28
PNP	3640	0.08	12	12	4.0	10*	6.0	30	120	0.3	10	0.6	50	3.5	500	–	35

E Indicates Enhanced Specification Device. Enhanced Spec in Red and

S Indicates Sorted Columns.

Tiny Leadless Module™

Package dimensions shown are maximum values in mm.

FAMILY	TLM832D  3.1 x 2.1 x 1.0	SOT-523  1.7 x 1.7 x 0.78	SOT-563  1.7 x 1.7 x 0.6	SOT-23  3.05 x 2.49 x 1.09	SOT-89  4.7 x 4.5 x 1.7	SOT-223  6.7 x 7.3 x 1.8
5179		CMUT5179		CMPT5179		
H10				CMPTH10		
918				CMPT918		
H81				CMPTH81		
A46				CMPTA46		CZTA46
A44			CMLTA44	CMPTA44	CXTA44	CZTA44
6517				CMPT6517		
A42E				CMPTA42E		
A42				CMPTA42	CXTA42	CZTA42
5551E		CMUT5551E		CMPT5551E	CXT5551E	CZT5551E
5551	CTLT5551-M832D (2x)	CMUT5551	CMLT5551 (2x)	CMPT5551	CXT5551	CZT5551
5551HC			CMLT5551HC	CMPT5551HC	CXT5551HC	CZT5551HC
A96				CMPTA96		CZTA96
A94			CMLTA94	CMPTA94		CZTA94
6520				CMPT6520		
A92E				CMPTA92E		
A92				CMPTA92	CXTA92	CZTA92
5401E		CMUT5401E		CMPT5401E	CXT5401E	CZT5401E
5401		CMUT5401		CMPT5401	CXT5401	CZT5401
5551 (NPN)			CMLT5554 (2x)			
5401 (PNP)						
2369				CMPT2369		
3646				CMPT3646		
3640				CMPT3640		

(2x) under part number indicates two devices in one package.

Darlington

	FAMILY	I_C (A) MAX	BV_{CBO} (V) MIN	BV_{CEO} *BV_{CES} (V) MIN	BV_{EBO} (V) MIN	I_{CBO} @ V_{CB} (nA) MAX	(V)	h_{FE} MIN	h_{FE} MAX	@ V_{CE} (V)	@ I_C (mA)	$V_{CE(SAT)}$ (V) MAX	@ I_C (mA)	C_{ob} (pF) MAX	f_T (MHz) MIN	NF (dB) MAX	t_{off} (ns) MAX	
	Devices are listed in order of descending h_{FE}.							S										
	NPN	900K	1.0	50	25	10	100	30	900,000	–	5.0	100	1.5	100	–	125	–	–	
	NPN	250K	1.0	50	25	10	100	30	250,000	–	5.0	100	1.5	100	–	125	–	–	
E➤	NPN	A14E	0.5	40	40*	10	100	40	40,000	–	5.0	100	1.0	100	–	125	–	–	
E➤	NPN	6427E	0.5	60	60*	14	100	30	25,000	200,000	5.0	100	1.0	500	7.0	200†	10	–	
	NPN	A14	0.5	30	30*	10	100	30	20,000	–	5.0	100	1.5	100	–	125	–	–	
	NPN	6427	0.5	40	40	12	50	30	20,000	200,000	5.0	100	1.5	500	7.0	130	10	–	
	NPN	A13	0.5	30	30*	10	100	30	10,000	–	5.0	100	1.5	100	–	125	–	–	
	NPN	A27	0.5	60	60*	10	100	50	10,000	–	5.0	100	1.5	100	–	125	–	–	
	NPN	A28	0.5	80	80*	12	100	60	10,000	–	5.0	100	1.5	100	8.0	125	–	–	
	NPN	A29	0.5	100	100*	12	100	80	10,000	–	5.0	100	1.5	100	8.0	125	–	–	
	NPN	2000	0.6	200	200*	10	500	180	3,000	–	5.0	160	1.1	80	–	–	–	–	
	PNP	A64	0.5	30	30*	10	100	30	20,000	–	5.0	100	1.5	100	–	125	–	–	
	PNP	A63	0.5	30	30*	10	100	30	10,000	–	5.0	100	1.5	100	–	125	–	–	
	PNP	A77	0.5	60	60*	10	100	50	10,000	–	5.0	100	1.5	100	–	125	–	–	

Low $V_{CE(SAT)}$

NPN	3410	1.0	40	25	6.0	100	40	100	300	1.0	100	0.45	1,000	10	100	–	–	
NPN	3820	1.0	80	60	5.0	100	60	100	–	5.0	1,000	0.28	1,000	10	150	–	–	
PNP	7410	1.0	40	25	6.0	100	40	100	300	1.0	100	0.45	1,000	15	100	–	–	
PNP	7820	1.0	80	60	5.0	100	60	100	–	5.0	1,000	0.34	1,000	15	150	–	–	
NPN & PNP	3410 (NPN) + 7410 (PNP)	1.0	40	25	6.0	100	40	100	300	1.0	100	0.45	1,000	10	100	–	–	
		1.0	40	25	6.0	100	40	100	300	1.0	100	0.45	1,000	15	100	–	–	

Chopper

PNP	404A	0.15	40	35	25	100	10	100	400	0.15	12	0.20	24	40	–	–	–	

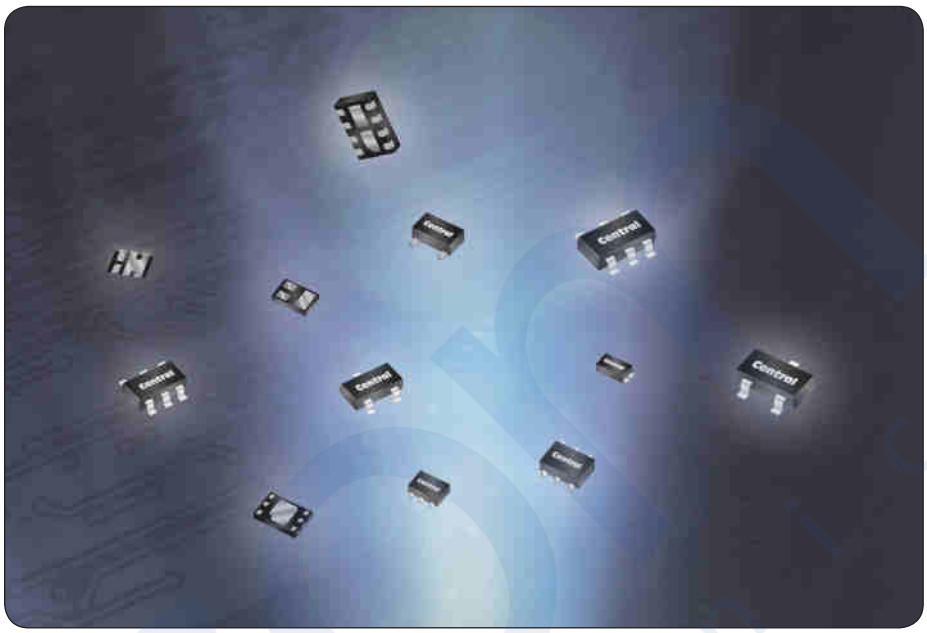
E➤ Indicates Enhanced Specification Device. Enhanced Spec in Red and S Indicates Sorted Columns.

Tiny Leadless Module™

Package dimensions shown are maximum values in mm.

FAMILY	TLM621  2.15 x 1.15 x 0.8	TLM832D  3.1 x 2.1 x 1.0	SOT-523  1.7 x 1.7 x 0.78	SOT-563  1.7 x 1.7 x 0.6	SOT-323  2.2 x 2.2 x 1.1	SOT-23  3.05 x 2.49 x 1.09	SOT-89  4.7 x 4.5 x 1.7	SOT-223  6.7 x 7.3 x 1.8
900K								CZT900K
250K								CZT250K
A14E						CMPTA14E		
6427E				CMLT6427E	CMST6427E			
A14						CMPTA14	CXTA14	CZTA14
6427						CMPT6427		
A13						CMPTA13		
A27						CMPTA27	CXTA27	CZTA27
A28								CZTA28
A29						CMPTA29		
2000								CZT2000
A64						CMPTA64	CXTA64	CZTA64
A63						CMPTA63		
A77						CMPTA77		CZTA77
3410	CTLT3410-M621		CMUT3410	CMLT3410 (2x)	CMST3410	CMPT3410	CXT3410	
3820				CMLT3820G		CMPT3820	CXT3820	
7410	CTLT7410-M621		CMUT7410	CMLT7410 (2x)	CMST7410	CMPT7410	CXT7410	
7820				CMLT7820G		CMPT7820	CXT7820	
3410 (NPN) + 7410 (PNP)		CTLM3474-M832D (2x)		CMLT3474 (2x)				
404A						CMPT404A		

(2x) under part number indicates two devices in one package.



MOSFETs

MOSFETs

Tiny Leadless Module™

	FAMILY	I_D *T_L=25°C (A)	BV_{DSS} (V) MIN	$r_{DS(ON)}$ (Ω) MAX	@ V_{GS} (V)	$V_{GS(th)}$ (V) MIN	$V_{GS(th)}$ (V) MAX	C_{iss} (pF) †TYP MAX	C_{rss} (pF) †TYP MAX	C_{oss} (pF) †TYP MAX	$Q_{g(tot)}$ (nC) †TYP MAX	t_{on} (ns) †TYP MAX	t_{off} (ns) †TYP MAX	TLM621 2.15 x 1.15 x 0.8	TLM621H 2.15 x 1.65 x 0.4	TLM832DS 3.05 x 2.05 x 1.05
		Devices are listed in order of ascending I_D.														
N-Channel	7001	0.1	20	3.0	4.0	0.6	0.9	†9.0	†4.0	†9.5	†0.566	†50	†75			
	7002	0.115	60	7.5	10	1.0	2.5	50	5.0	25	†0.592	20	20			
	3590	0.16	20	3.0	4.5	0.4	1.0	†9.0	†2.2	3.0	†0.458	†25	†85			
	7002A	0.28	60	2.0	10	1.0	2.5	50	5.0	25	†0.592	20	20	CTLDM7002A-M621	CTLDM7002A-M621H (2x)	
E➤	7002AE	**0.3**	**60**	**1.4**	10	1.2	2.0	50	5.0	25	†0.5	20	45			
E➤	7003E	0.28	50	**2.3**	1.8	0.49	1.2	50	5.0	25	†0.764	–	–			
	7003TG	0.28	50	2.3	1.8	0.7	1.2	50	5.0	25	†0.764	–	–			
	7003	0.28	50	3.0	1.8	0.49	1.0	50	5.0	25	†0.764	–	–	CTLDM7003-M621 (2x)		
	3737	0.54	20	0.55	4.5	0.45	1.0	150	20	25	†1.58	†10	†25			
	7005	0.65	20	0.23	4.5	0.5	1.1	†100	†18	†18	†1.58	†10	†25			
	7120	1.0	20	0.14	2.5	0.5	1.2	†220	†45	†120	†2.4	†25	†140		CTLDM7120-M621H	CTLDM7120-M832DS (2x)
	7120TG	1.0	20	0.25	1.5	0.5	0.85	†220	†45	†120	†2.4	†25	†140			
	7002AHC	1.0	63	0.22	10	1.2	2.3	240	25	50	†2.3	35	50			
	7004	*1.78	30	0.56	2.5	0.5	1.0	†43	†5.0	†8.0	†0.792	†20	†75			
	1002N	2.0	100	0.30	10	1.5	2.5	†550	†48	†45	†6.0	†32	†50			
	1003N	3.0	100	0.15	10	2.0	4.0	†705	†55	80	†15	†40	†60			
	3-800	3.0	800	4.8	10	2.0	4.0	†415	†1.5	†44	†11.3	†33	†50			
	203NH	3.2	20	0.05	4.5	0.6	1.2	†395	†44	†97	10	†6.0	†22.8			
	303N	3.6	30	0.04	4.5	0.6	1.2	†590	†55	†50	13	†15	†29			CTLDM303N-M832DS (2x)
	303NH	3.6	30	0.04	4.5	0.6	1.2	†590	†55	†50	13	†15	†29			
	4-600LR	4.0	600	0.95	10	2.0	4.0	†328	†1.31	†26	†11.59	†32	†57			
	4-650	4.0	650	2.7	10	2.0	4.0	†463	†1.0	†60	†11.4	†32	†44			
	6053N	5.3	60	0.041	10	1.0	3.0	†920	†53	†49	†8.8	†33	†42			
	305N	5.8	30	0.03	10	1.0	3.0	560	54	†52	†4.2	†6.5	†8.5			
	4060N	6.0	40	0.031	10	1.0	3.0	†730	†64	†58	†12	†27	†33			
	3069N	6.9	30	0.03	10	0.7	1.4	†580	†47	†42	†11	†20	†28			
	7-600LR	7.0	600	0.58	10	2.0	4.0	†440	†1.94	†33	†14.5	†35	†70			
	7-650	7.0	650	1.5	10	2.88	4.0	†754	†0.8	†97	†16.8	†42	†66			
	7-700LR	7.0	700	0.60	10	2.0	4.0	†561	†2.45	†26.9	†18.8	†44	†87			
	3011N	11	30	0.02	10	1.0	3.0	†860	†100	†120	†6.3	†20	†30			

E➤ Indicates Enhanced Specification Device. Enhanced Spec in Red and **Bold**

Indicates Sorted Columns.

Package dimensions shown are maximum values in mm.

SOT-953	SOT-963	SOT-883VL	SOT-883L	SOT-523	SOT-563	SOT-23	SOT-23F	SOT-26	SOT-89	SOIC-8	SOT-223	DPAK
												
1.05 x 1.05 x 0.5	1.05 x 1.05 x 0.5	1.05 x 0.65 x 0.32	1.05 x 0.65 x 0.4	1.7 x 1.7 x 0.78	1.7 x 1.7 x 0.6	3.05 x 2.49 x 1.09	3.0 x 2.5 x 1.0	3.0 x 3.0 x 1.2	4.7 x 4.5 x 1.7	5.01 x 6.18 x 1.71	6.7 x 7.3 x 1.8	10.73 x 6.81 x 2.75
CMNDM7001		CEDM7001VL	CEDM7001	CMUDM7001								
						2N7002						
	CMRDM3590 (2x)											
					CMLDM7002A CMLDM7002AJ (2x)	CMPDM7002A		CMXDM7002A (2x)				
			CEDM7002AE			CMPDM7002AE						
					CMLDM7003E CMLDM7003JE (2x)							
					CMLDM7003TG (2x)							
					CMLDM7003 CMLDM7003J (2x)	CMPDM7003						
					CMLDM3737 (2x)							
				CMUDM7005	CMLDM7005 CMLDM7005R (2x)							
					CMLDM7120G	CMPDM7120G						
					CMLDM7120TG							
						CMPDM 7002AHC						
		CEDM7004VL	CEDM7004	CMUDM7004								
									CXDM1002N			
											CZDM1003N	
												CDM3-800
							CMPDM203NH					
							CMPDM303NH					
												CDM4-600LR
												CDM4-650
									CXDM6053N			
										CWDM305N CWDM305ND (2x)		
									CXDM4060N			
									CXDM3069N			
												CDM7-600LR
												CDM7-650
												CDM7-700LR
										CWDM3011N		

MOSFETs

	FAMILY	I_D *T_L=25°C (A)	BV_{DSS} (V) MIN	$r_{DS(ON)}$ (Ω) MAX	@ V_{GS} (V)	$V_{GS(th)}$ (V) MIN	$V_{GS(th)}$ (V) MAX	C_{iss} (pF) †TYP MAX	C_{rss} (pF) †TYP MAX	C_{oss} (pF) †TYP MAX	$Q_{g(tot)}$ (nC) †TYP MAX	t_{on} (ns) †TYP MAX	t_{off} (ns) †TYP MAX	TLM621 2.15 x 1.15 x 0.8	TLM621H 2.15 x 1.65 x 0.4
		Devices are listed in order of ascending I_D.													
P-Channel	8001	0.1	20	8.0	4.0	0.6	1.1	†45	†15	†15	†0.658	†35	†80		
	7590	0.14	20	5.0	4.5	0.4	1.0	†10	†4.0	†3.7	†0.50	†35	†100		
	8002A	0.28	50	3.0	5.0	1.0	2.5	70	7.0	15	†0.72	20	20	CTLDM8002A-M621	CTLDM8002A-M621H (2x)
	5757	0.43	20	0.9	4.5	0.45	1.0	175	20	30	†1.2	†38	†48		
	8004	0.45	30	2.0	2.5	0.5	1.0	55	10	15	†0.88	–	–		
	8005	0.65	20	0.36	4.5	0.5	1.0	†100	†25	†21	†1.2	†38	†48		
	8120	0.86	20	0.2	2.5	0.45	1.0	†200	†80	†60	†3.56	†20	†25		CTLDM8120-M621H
	8120TG	0.86	20	0.24	1.8	0.45	0.85	†200	†80	†60	†3.56	†20	†25		
	202PH	2.3	20	0.088	5.0	0.6	1.4	†800	†85	†75	12	†25	†48		
	302PH	2.4	30	0.091	4.5	0.7	1.4	†800	†69	†62	9.6	†12	†17		
	304P	4.2	30	0.070	10	0.7	1.3	†760	†53	†50	†64	†40	†75		
	305P	5.3	30	0.072	10	1.0	3.0	†500	†50	150	†7.0	†7.0	†8.0		
	4060P	6.0	40	0.065	10	1.0	3.0	†750	†61	†56	†6.5	†18	†64		
	3011P	11	30	0.020	10	1.0	3.0	†3100	†450	†320	†80	†49	†330		
N-Channel & P-Channel	3590 (N-Channel) + 7590 (P-Channel)	0.16	20	3.0	4.5	0.4	1.0	†9.0	†2.2	†3.0	†0.458	†25	†85		
		0.14	20	5.0	4.5	0.4	1.0	†10	†4.0	†3.7	†0.50	†35	†100		
	7002A (N-Channel) + 8002A (P-Channel)	0.28	60	2.0	10	1.0	2.5	50	5.0	25	†0.592	20	20		
		0.28	50	3.0	5.0	1.0	2.5	70	7.0	15	†0.72	20	20		
	7120 (N-Channel) + 8120 (P-Channel)	1.0	20	0.14	2.5	0.5	1.2	†220	†45	†120	†2.4	†25	†140		
		0.86	20	0.2	2.5	0.45	1.0	†200	†80	†60	†3.56	†20	†25		
	3737 (N-Channel) + 5757 (P-Channel)	0.54	20	0.55	4.5	0.45	1.0	150	20	25	†1.58	†10	†25		
		0.43	20	0.9	4.5	0.45	1.0	175	20	30	†1.2	†38	†48		
	7004 (N-Channel) + 8004 (P-Channel)	*1.78	30	0.56	2.5	0.5	1.0	†43	†5.0	15	†0.792	†20	†75		
		0.45	30	2.0	2.5	0.5	1.0	55	10	15	†0.88	–	–		
	7005 (N-Channel) + 8005 (P-Channel)	0.65	20	0.23	4.5	0.5	1.1	†100	†18	16	†1.58	†10	†25		
		0.65	20	0.36	4.5	0.5	1.0	†100	†25	21	†1.2	†38	†48		

Indicates Sorted Columns.

Tiny Leadless Module™

Package dimensions shown are maximum values in mm.

TLM832D	TLM832DS	SOT-953	SOT-963	SOT-883VL	SOT-883L	SOT-523	SOT-563	SOT-363	SOT-23	SOT-23F	SOT-89	SOIC-8
												
3.1 x 2.1 x 1.0	3.05 x 2.05 x 1.05	1.05 x 1.05 x 0.5	1.05 x 1.05 x 0.5	1.05 x 0.65 x 0.32	1.05 x 0.65 x 0.4	1.7 x 1.7 x 0.78	1.7 x 1.7 x 0.6	2.2 x 2.3 x 1.1	3.05 x 2.49 x 1.09	3.0 x 2.5 x 1.0	4.7 x 4.5 x 1.7	5.01 x 6.18 x 1.71
			CMNDM8001		CEDM8001VL	CEDM8001	CMUDM8001						
				CMRDM7590 (2x)									
								CMLDM8002A CMLDM8002AJ (2x)		CMPDM8002A			
								CMLDM5757 (2x)					
					CEDM8004VL	CEDM8004	CMUDM8004						
							CMUDM8005	CMLDM8005 (2x)	CMKDM8005 (2x)				
		CTLDM8120-M832DS (2x)						CMLDM8120		CMPDM8120			
								CMLDM8120TG					
											CMPDM202PH		
											CMPDM302PH		
		CTLDM304P-M832DS (2x)											
													CWDM305P CWDM305PD (2x)
												CXDM4060P	
													CWDM3011P
				CMRDM3575 (2x)									
								CMLM0708A (2x)					
CTLDM7181-M832D (2x)													
								CMLDM3757 (2x)					
								CMLDM7484 (2x)					
								CMLDM7585 (2x)					

(2x) under part number indicates two devices in one package.

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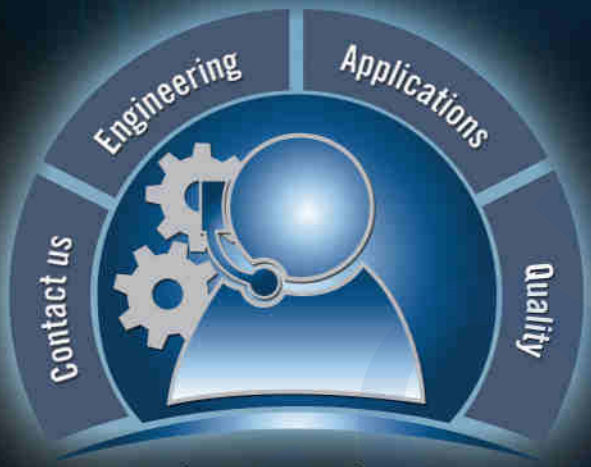

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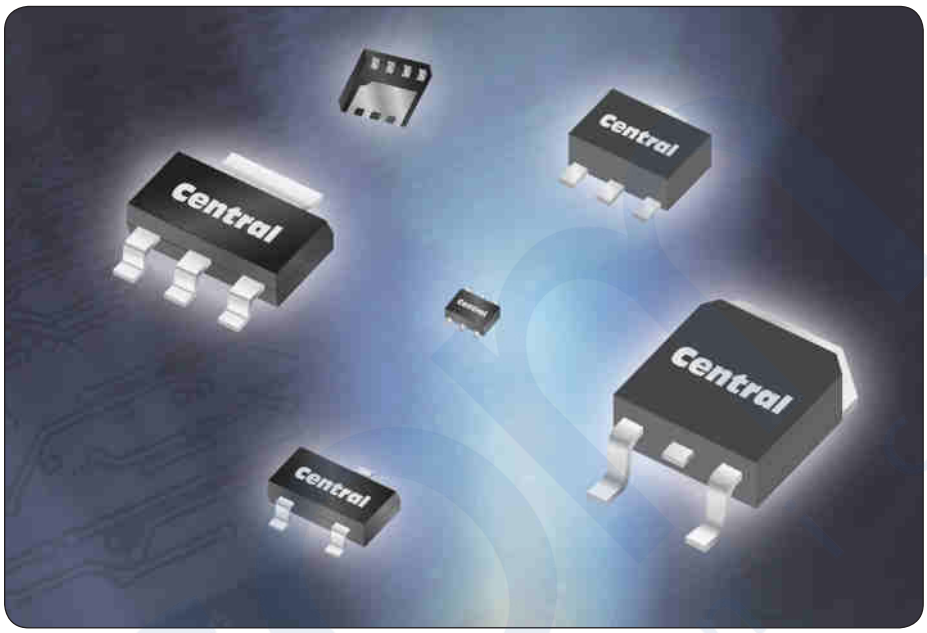

Bipolar Power Transistors

General Purpose Amplifiers/Switches

	FAMILY	I_C (A) MAX	BV_{CBO} * BV_{CEV} (V) MIN	BV_{CEO} (V) MIN	h_{FE} MIN	h_{FE} MAX	@ I_C (A)	$V_{CE(SAT)}$ (V) MAX	@ I_C (A)	f_T †TYP. (MHZ) MIN
		Devices are listed in order of descending I_C.								
NPN	3055	10	70	60	20	100	4.0	1.1	4.0	–
	44H11	8.0	80	80	40	–	4.0	1.0	8.0	60†
	853	6.0	200	100	100	300	2.0	0.17	2.0	190†
	41C	6.0	100	100	15	75	3.0	1.5	6.0	3.0
	3150	5.0	50	25	150	–	2.0	0.5	4.0	150†
	5338	5.0	100	100	30	120	2.0	1.2	5.0	30
	200	5.0	40	25	45	180	2.0	1.8	5.0	65
	31C	3.0	100	100	10	50	3.0	1.2	3.0	3.0
	3120	3.0	120	70	100	300	0.5	0.5	2.0	8.0
	A44HC	2.0	450	400	30	–	1.0	0.5	1.0	10
	2680	1.5	250	200	40	–	0.5	0.5	1.0	50
	491E	1.0	80	60	200	600	0.5	0.4	1.0	150
PNP	2955	10	70	60	20	100	4.0	1.1	4.0	2.0
	45H11	8.0	80	80	40	–	4.0	1.0	8.0	50†
	42C	6.0	100	100	15	75	3.0	1.5	6.0	3.0
	953	5.0	140	100	100	300	1.0	0.22	2.0	150†
	210	5.0	40	25	45	180	2.0	1.8	5.0	5.0
	955	4.0	180	140	100	300	1.0	0.36	3.0	200†
	32C	3.0	100	100	10	50	3.0	1.2	3.0	3.0
	7120	3.0	120	70	100	300	0.5	0.5	2.0	8.0
	591E	1.0	80	60	200	600	0.5	0.4	1.0	150

High Voltage

Devices are listed in order of descending breakdown voltage.

NPN	13003	1.5	700*	400	5.0	25	1.0	3.0	1.5	4.0
	50	1.0	500	400	30	150	0.3	1.0	1.0	10
	47	1.0	350	250	30	150	0.3	1.0	1.0	10
	340	0.5	300	300	30	240	0.05	–	–	–
PNP	350	0.5	300	300	30	240	0.05	–	–	–

Extremely High Voltage

NPN	UX87	0.5	900*	450	12	–	0.04	1.0	0.2	20†

Darlington

NPN	112	2.0	100	100	1,000	12,000	2.0	2.0	2.0	25
	122	8.0	100	100	1,000	12,000	4.0	4.0	8.0	4.0
PNP	117	2.0	100	100	1,000	12,000	2.0	2.0	2.0	25
	127	8.0	100	100	1,000	12,000	4.0	4.0	8.0	4.0

Low $V_{CE(SAT)}$

Devices are listed in order of descending $V_{CE(SAT)}$

NPN	3150	5.0	50	25	150	–	2.0	0.6	4.0	150†
	3090L	3.0	45	15	200	–	1.0	0.3	3.0	100
E	3090LE	3.0				–	1.0		3.0	100
PNP	7090L	3.0	50	40	200	–	1.0	0.75	2.0	100
E	7090LE	3.0				–	1.0		2.0	100

E Indicates Enhanced Specification Device. Enhanced Spec in Red and **Bold**

Indicates Sorted Columns.

Tiny Leadless Module™

Package dimensions shown are maximum values in mm.

FAMILY	TLM833S  3.15 x 3.15 x 1.0	SOT-563  1.7 x 1.7 x 0.6	SOT-23  3.05 x 2.49 x 1.09	SOT-26  3.0 x 3.0 x 1.2	SOT-89  4.7 x 4.5 x 1.7	SOT-223  6.7 x 7.3 x 1.8	DPAK  10.73 x 6.81 x 2.75
3055						CZT3055	CJD3055
44H11							CJD44H11
853	CTLT853-M833S				CXT853	CZT853	
41C							CJD41C
3150						CZT3150	
5338						CZT5338	
200							CJD200
31C						CZT31C	CJD31C
3120						CZT3120	
A44HC						CZTA44HC	
2680						CZT2680	
491E		CMLT491E	CMPT491E		CXT491E		
2955						CZT2955	CJD2955
45H11							CJD45H11
42C							CJD42C
953	CTLT953-M833S				CXT953	CZT953	
210							CJD210
955						CZT955	
32C						CZT32C	CJD32C
7120						CZT7120	
591E		CMLT591E	CMPT591E		CXT591E		
13003							CJD13003
50							CJD50
47							CJD47
340							CJD340
350							CJD350
UX87						CZTUX87	
112							CJD112
122						CZT122	CJD122
117							CJD117
127						CZT127	CJD127
3150					CXT3150	CZT3150	
3090L				CMXT3090L	CXT3090L	CZT3090L	
3090LE						CZT3090LE	
7090L				CMXT7090L	CXT7090L	CZT7090L	
7090LE						CZT7090LE	

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Application Resources

Central Semiconductor's online Application Resources provide designers with an insightful overview of devices designed to meet the requirements of specific end product applications.

Block diagrams include:

- Detailed device information
- Technical datasheets
- Package specifications
- Links to request samples

For more information:

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Diodes

Central™ Semiconductor Corp.

Switching Diodes

Devices are listed in order of ascending V_{RRM}.

	FAMILY	DESCRIPTION	V_{RRM} (V) MAX	I_F (mA) MAX	V_F @ I_F (V) MAX	I_F (mA)	t_{rr} (ns) MAX	FAMILY	SOD-923 1.10 x 0.65 x 0.41
Switching Diodes	**4150**	Single	50	250	0.86 0.92 1.0	50 100 200	4.0	**4150**	
	6i	Monolithic, Quad Diode Array	60	250	1.0	10	100	**6i**	
	56	High Current, Dual, Isolated	60	200	0.75 1.0	10 200	6.0	**56**	
	2836	CMUD2836, CMSD2836, and CMPD2836: Dual, Common Anode CMKD2836: Dual Pair, Common Anode	75	200	1.0	50	4.0	**2836**	
	2838	CMUD2838, CMSD2838, and CMPD2838: Dual, Common Cathode CMLD2838, and CMKD2838: Dual Pair, Common Cathode	75	200	1.0	50	4.0	**2838**	
	28	Dual, Isolated	85	200	0.715 1.0	1.0 50	6.0	**28**	
	100	Dual, Isolated	85	250	0.715 1.0	1.0 50	6.0	**100**	
	1001	CMPD1001: Single CMPD1001A: Dual, Common Anode CMPD1001S: Dual, In Series	90	250	0.75 0.9 1.0	10 100 200	50	**1001**	
	914	Single	100	250	1.0	10	4.0	**914**	
	4448	CMAD4448, CFD4448, CMOD4448, CMUD4448, CMDD4448, CMSD4448, and CMHD4448: Single CMLD4448: Dual, Isolated CMLD4448: Dual, Opposing, Isolated CMKD4448, and CMXD4448: Triple, Isolated	100	250	1.0	100	4.0	**4448**	CMAD4448 (1x)
	7000	CMUD7000, CMSD7000, and CMPD7000: Dual, In Series CMKD7000: Dual Pair, In Series	100	200	0.7 0.82 1.1	1.0 10 100	4.0	**7000**	
E	**2836E**	Dual, Common Anode, Enhanced		200		10 50	4.0	**2836E**	
E	**2838E**	Dual, Common Cathode, Enhanced		200		10 50	4.0	**2838E**	
E	**914E**	Single, Enhanced		250		10	4.0	**914E**	
E	**7000E**	CMKD7000E: Dual Pair, In Series, Enhanced CMPD7000E: Dual, In Series, Enhanced		200		1.0 10 100	4.0	**7000E**	
	5001	CMPD5001: Single CMPD5001S: Dual, In Series	120	400	0.75 0.9 1.0	10 100 200	50	**5001**	
	2003	CMHD2003, and CMPD2003: Single CMPD2003C: Dual, Common Cathode CMPD2003S: Dual, In Series	250	250	1.0	100	50	**2003**	
	2004	CMOD2004, CMDD2004, and CMPD2004: Single CMLD2004, and CMFD2004i: Dual, Isolated CMLD2004A, and CMPD2004A: Dual, Common Anode CMLD2004C, and CMPD2004C: Dual, Common Cathode CMLD2004S, and CMPD2004S: Dual, In Series CMLD2004DO: Dual, Opposing CMXD2004: Triple, Isolated CMXD2004TO: Triple, Opposing CMXD2004S, and CMXD2004SR: Dual Pair, In Series	300	225	1.0	100	50	**2004**	
	2005	CMOD2005: Single CMSD2005S, and CMPD2005S: Dual, In Series	350	225	0.87 1.0	20 100	50	**2005**	
	3004	Dual, In Series	375	225	1.0	100	50	**3004**	

E Indicates Enhanced Specification Device. Enhanced Spec in Red and Indicates Sorted Columns.

Package dimensions shown are maximum values in mm.

SOD-882L	SOT-883L	SOD-523	SOT-523	SOT-563	SOD-323	SOT-323	SOT-363	SOD-123	SOT-23	SOT-143	SOT-26	SOT-28
												
1.05 x 0.65 x 0.4	1.05 x 0.65 x 0.4	1.80 x 0.9 x 0.8	1.7 x 1.7 x 0.78	1.7 x 1.7 x 0.6	2.6 x 1.35 x 1.0	2.2 x 2.2 x 1.1	2.2 x 2.3 x 1.1	3.9 x 1.8 x 1.35	3.05 x 2.49 x 1.09	3.04 x 2.50 x 1.14	3.0 x 3.0 x 1.2	3.0 x 3.0 x 1.45
								CMHD4150 (1x)	CMPD4150 (1x)			
												CMEDA-6i (4x)
										BAS56 (2x)		
			CMUD2836 (2x)			CMSD2836 (2x)	CMKD2836 (4x)		CMPD2836 (2x)			
			CMUD2838 (2x)	CMLD2838 (4x)		CMSD2838 (2x)	CMKD2838 (4x)		CMPD2838 (2x)			
										BAS28 (2x)		
										BAW100 (2x)		
									CMPD1001 (1x) CMPD1001A CMPD1001S (2x)			
									CMPD914 (1x)			
CFD4448 (1x)		CMOD4448 (1x)	CMUD4448 (1x)	CMLD4448 CMLD4448DO (2x)	CMDD4448 (1x)	CMSD4448 (1x)	CMKD4448 (3x)	CMHD4448 (1x)			CMXD4448 (3x)	
			CMUD7000 (2x)			CMSD7000 (2x)	CMKD7000 (4x)		CMPD7000 (2x)			
									CMPD2836E (2x)			
	CED2838E (2x)								CMPD2838E (2x)			
									CMPD914E (1x)			
							CMKD7000E (4x)		CMPD7000E (2x)			
									CMPD5001 (1x) CMPD5001S (2x)			
								CMHD2003 (1x)	CMPD2003 (1x) CMPD2003A CMPD2003C CMPD2003S (2x)			
		CMOD2004 (1x)		CMLD2004 CMLD2004A CMLD2004C CMLD2004S CMLD2004DO (2x)	CMDD2004 (1x)	CMSD2004S (2x)			CMPD2004 (1x) CMPD2004A CMPD2004C CMPD2004S (2x)	CMFD2004i (2x)	CMXD2004 (3x) CMXD2004S CMXD2004SR (4x) CMXD2004TO (3x)	
		CMOD2005 (1x)				CMSD2005S (2x)			CMPD2005S (2x)			
											CMXD3004SR (2x)	

Suffix Codes:

A = Common Anode	i = Isolated Chips (CMEDA-6i has four Monolithic isolated diodes.)
C = Common Cathode	DO = Dual, Opposing
S = In Series	TO = Triple, Opposing
E = Enhanced Specification	SR = Opposing Dual Pair, In Series

(2x) under part number indicates two devices in one package.
(3x) under part number indicates three devices in one package.
(4x) under part number indicates four devices in one package.

Schottky Diodes

Tiny Leadless Module™

	FAMILY	DESCRIPTION	V_{RRM} (V) MAX	I_F *I_O (mA) MAX	V_F @ I_F (V) MAX	I_F (mA)	t_{rr} (ns) MAX	C_T †TYP (pF) MAX	FAMILY	TLM2D3D6 0.65 x 0.35 x 0.32	TLM621 2.15 x 1.15 x 0.8	TLM621H 2.15 x 1.65 x 0.4	SOD-923 1.10 x 0.65 x 0.41
High Voltage / Low Current	**6263E**	CMUD6263E: Single, Enhanced CMUD6263AE: Dual, Common Anode, Enhanced CMUD6263CE: Dual, Common Cathode, Enhanced CMUD6263SE: Dual, In Series, Enhanced	70				5.0	2.0	**6263E**				
	6263	CMAD6263, CMOD6263, CMDD6263, CMSD6263, and CMPD6263: Single CMSD6263A, and CMPD6263A: Dual, Common Anode CMSD6263C, and CMPD6263C: Dual, Common Cathode CMSD6263S, and CMPD6263S: Dual, In Series CMKD6263: Triple, Isolated CMLD6263: Dual, Isolated CMLD6263A: Dual Pair, Common Anode CMLD6263C: Dual Pair, Common Cathode CMLD6263S: Dual Pair, In Series CMRD6263DO, CMLD6263DO, and CMKD6263DO: Dual, Opposing, Isolated	70	15	0.395 (TYP) 0.41	1.0 1.0	5.0	2.0	**6263**				CMAD6263 (1x)

Devices are listed in order of ascending I_F

Low Current • 30V	**SH01-30**	Single	30	*100	0.46	10	–	7.0†	**SH01-30**	CTLSH01-30 (1x)			
	SH–3	CMOSH-3, CMDSH-3, CMSSH-3, CMHSH-3, and CMPSH-3: Single CMFSH-3i: Dual, Isolated CMSSH-3A, and CMPSH-3A: Dual, Common Anode CMSSH-3C, and CMPSH-3C: Dual, Common Cathode CMSSH-3S, and CMPSH-3S: Dual, In Series CMKSH-3DO: Dual, Opposing Polarity CMKSH-3T, and CMXSH-3: Triple, Isolated	30	100	0.33 0.45	2.0 15	5.0	7.0	**SH–3**				
	SH1–3	Single	30	*100	0.18	1.0	–	15†	**SH1-3**				
	SH2–3	Single	30	*200	0.42 (TYP) 0.55	100 200	–	15†	**SH2–3**				
Low V_F 30V	**SH01-30L**	Single	30	*100	0.095 0.37	5.0µA 10	–	4.0†	**SH01-30L**	CTLSH01-30L (1x)			
	SH2–3L	Single	30	*200	0.40 0.48	100 200	–	25	**SH2–30L**				
Low Current • 40V	**SH–3E**	CMSSH-3E, and CMPSH-3E: Single CMSSH-3AE, and CMPSH-3AE: Dual, Common Anode CMSSH-3CE, and CMPSH-3CE: Dual, Common Cathode CMSSH-3SE, and CMPSH-3SE: Dual, In Series	40	200	0.33 0.42	2.0 15	5.0	7.0	**SH–3E**				
	SH–4	CMASH-4, CFSH-4, and CMDSH-4E: Single CMLSH-4: Dual, Isolated CMRSH-4DO, CMLSH-4DO: Dual, Opposing, Isolated	40	*200	0.38 0.65	1.0 15	5.0	7.0	**SH–4**				CMASH-4 (1x)
Medium Current	**SH2-4**	CMOSH2-4L, CMUSH2-4L, CMUSHW2-4L and CMDSH2-4L: Single CMKSH2-4LR: Triple, Isolated CMXSH2-4LS: Dual Pair, In Series	40	200	0.4	100	5.0	10	**SH2-4**				
		CFSH2-4L: Single	40	*200	0.52	100	5.0	10					
		CMUSH2-4: Single CMUSH2-4A: Dual, Common Anode CMUSH2-4C: Dual, Common Cathode CMUSH2-4S: Dual, In Series CMLSH2-4LA: Dual Pair, Common Anode CMLSH2-4LC: Dual Pair, Common Cathode CMLSH2-4LS: Dual Pair, In Series CMLSH2-4T: Triple, Isolated	40	200	0.6 0.75	50 100	5.0	10					
High Current	**SH05-20L**	Single	20	500	0.29 0.38 0.50	10 100 500	–	–	**SH05-20L**				
	SH05-4	CMUSH05-4, CMLSH05-4, CMDSH05-4, and CMPSH05-4: Single CMPSH05-4C: Dual, Common Cathode CMLSH05-4DO: Dual, Opposing, Isolated	40	500	0.27 0.35 0.47	10 100 500	5.0	50	**SH05-4**		CTLSH05-40M621 (1x)		
	SH05-45	Single	45	500	0.27 0.35 0.47	10 100 500	–	50	**SH05-45**				
	SH05-10	CMLSH05-10DA: Dual, Opposing, Isolated	100	500	0.85	500	–	–	**SH05-10**				
1.0 Amp	**SH1-40**	Single	40	*1000	0.29 0.36	10 100	15	–	**SH1-40**			CTLSH1-40M621H (1x)	

Indicates Enhanced Specification Device. Enhanced Spec in Red and **Bold**

Indicates Sorted Columns.

Package dimensions shown are maximum values in mm.

SOT-963	SOD-882L	SOD-723	SOD-523	SOT-523	SOT-523W	SOT-563	SOD-323	SOT-323	SOT-363	SOD-123	SOT-23	SOT-143	SOT-26
													
1.05 x 1.05 x 0.5	1.05 x 0.65 x 0.4	1.45 x 0.65 x 0.55	1.80 x 0.9 x 0.8	1.7 x 1.7 x 0.78	1.7 x 1.68 x 0.8	1.7 x 1.7 x 0.6	2.6 x 1.35 x 1.0	2.2 x 2.2 x 1.1	2.2 x 2.3 x 1.1	3.9 x 1.8 x 1.35	3.05 x 2.49 x 1.09	3.04 x 2.50 x 1.14	3.0 x 3.0 x 1.2
				CMUD6263E (1x) CMUD6263AE CMUD6263CE CMUD6263SE (2x)									
CMRD6263DO (2x)			CMOD6263 (1x)			CMLD6263 (2x) CMLD6263A CMLD6263C CMLD6263S (4x) CMLD6263DO (2x)	CMDD6263 (1x)	CMSD6263 (1x) CMSD6263A CMSD6263C CMSD6263S (2x)	CMKD6263 (3x) CMKD6263DO (2x)		CMPD6263 (1x) CMPD6263A CMPD6263C CMPD6263S (2x)		
	CFSH01-30 (1x)												
			CMOSH-3 (1x)				CMDSH-3 (1x)	CMSSH-3 (1x) CMSSH-3A CMSSH-3C CMSSH-3S (2x)	CMKSH-3DO (2x) CMKSH-3T (3x)	CMHSH-3 (1x)	CMPSH-3 (1x) CMPSH-3A CMPSH-3C CMPSH-3S (2x)	CMFSH-3i (2x)	CMXSH-3 (3x)
		CMGSH1-3 (1x)											
							CMDSH2-3 (1x)						
	CFSH01-30L (1x)												
	CFSH2-3L (1x)												
								CMSSH-3E (1x) CMSSH-3AE CMSSH-3CE CMSSH-3SE (2x)			CMPSH-3E (1x) CMPSH-3AE CMPSH-3CE CMPSH-3SE (2x)		
CMRSH-4DO (2x)	CFSH-4 (1x)		CMOSH-4E (1x)			CMLSH-4 CMLSH-4DO (2x)	CMDSH-4E (1x)						
			CMOSH2-4L (1x)	CMUSH2-4L (1x)	CMUSHW2-4L (1x)		CMDSH2-4L (1x)		CMKSH2-4LR (3x)				CMXSH2-4LS (4x)
	CFSH2-4L (1x)												
				CMUSH2-4 (1x) CMUSH2-4A CMUSH2-4C CMUSH2-4S (2x)		CMLSH2-4LA CMLSH2-4LC CMLSH2-4LS CMLSH2-4T (2x)							
	CFSH05-20L (1x)												
				CMUSH05-4 (1x)		CMLSH05-4 (1x) CMLSH05-4DO (2x)	CMDSH05-4 (1x)				CMPSH05-4 (1x) CMPSH05-4C (2x)		
							CMDSH05-45 (1x)						
						CMLSH05-10DA (2x)							
						CMLSH1-40 (1x)							

Suffix Codes:

A = Common Anode	T = Triple	SE = In Series with Enhanced Specification	LS = Low V_F, Dual Pair, In Series
C = Common Cathode	E = Enhanced Specification	DO = Dual, Opposing	i = Isolated Chips
S = In Series	AE = Common Anode with Enhanced Specification	L = Low V_F	
DO = Dual, Opposing	CE = Common Cathode with Enhanced Specification	LR = Low V_F, Triple, Isolated	

(2x) under part number indicates two devices in one package.
(3x) under part number indicates three devices in one package.
(4x) under part number indicates four devices in one package.

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Low Leakage Diodes

	FAMILY	DESCRIPTION	V_{RRM} (V) MAX	I_O (mA) MAX	I_R @ V_R (nA) MAX	(V)	V_F @ I_F (V) MAX	(mA)	C_T (pF) MAX
		Devices are listed in order of ascending I_R							
Low Leakage Diodes	**3003**	CMOD3003, CMDD3003, and CMPD3003: Single CMPD3003A: Dual, Common Anode CMPD3003C: Dual, Common Cathode CMPD3003S: Dual, In Series CMKD3003DO and CMLD3003DO: Dual, Opposing, Isolated CMXD3003TO: Triple, Opposing, Isolated	200	200	1.0	125	1.1	200	4.0
	3595	Single	150	150	1.0	125	1.0	200	8.0
	457A	Single	70	200	25	60	1.0	100	6.0
	459A	Single	200	200	25	175	1.0	100	6.0

Ultra Low Leakage Diodes

Ultra Low Leakage Diodes	**6001**	CMAD6001, CMOD6001, CMSD6001, CMUDW6001, CMDD6001, and CMPD6001: Single CMSD6001A, and CMPD6001A: Dual, Common Anode CMSD6001C, and CMPD6001C: Dual, Common Cathode CMSD6001S, and CMPD6001S: Dual, In Series CMLD6001: Dual, Isolated CMLD6001DO: Dual, Opposing, Isolated CMKD6001, and CMXD6001: Triple, Isolated CMKD6000: Dual Pair, In Series	100	250	0.5	75	1.1	100	2.0

Stabistor Diodes

	FAMILY	V_F @ I_F (V) MIN	(V) MAX	(mA)	V_F @ I_F (V) MIN	(V) MAX	(mA)	V_F @ I_F (V) MIN	(V) MAX	(mA)	V_F @ I_F (V) MIN	(V) MAX	(mA)	V_F @ I_F (V) MIN	(V) MAX	(mA)
		Devices are listed in order of ascending V_F														
Stabistor Diodes	**S17**	0.58	0.68	0.1	0.665	0.76	1.0	0.725	0.82	5.0	0.75	0.84	10	0.87	0.96	100
	STB200	–	–	–	1.11	1.31	1.0	–	–	–	1.38	1.58	10	1.64	1.94	100
	STB300	–	–	–	1.71	1.91	1.0	–	–	–	2.08	2.28	10	2.61	2.91	100
	STB400	–	–	–	2.20	2.80	1.0	–	–	–	2.60	3.20	10	3.40	4.10	100

Indicates Sorted Columns.

Current Limiting Diodes

SOD-123FL

3.7 x 1.7 x 0.8

Package dimensions shown are maximum values in mm.

MAXIMUM RATINGS: (T_A=25°C)	SYMBOL		UNITS
Peak Operating Voltage (CMJ0130 THRU CMJ5750)	P_{OV}	100	V
Power Dissipation	P_D	500	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	250	°C/W

Type	Regulator Current (Note 1) I_P @ V_T=25V MIN mA	NOM mA	MAX mA	Minimum Dynamic Impedance Z_T @ V_T=25V MΩ	Minimum Knee Impedance Z_K @ V_K=6.0V kΩ	Maximum Limiting Voltage V_L @ I_L=0.8 x I_P MIN V	Temperature Coefficient (Note 2) TC %/°C	Marking Code
CMJ0130	0.05	0.13	0.21	6.0	2,000	0.6	+2.10 to +0.10	101
CMJ0300	0.20	0.31	0.42	4.0	1,000	0.8	+0.40 to -0.20	301
CMJ0500	0.40	0.515	0.63	2.0	500	1.1	+0.15 to -0.25	501
CMJ0750	0.60	0.76	0.92	1.0	200	1.4	0.0 to -0.32	701
CMJ1000	0.88	1.1	1.32	0.65	100	1.7	-0.10 to -0.37	102
CMJ1500	1.28	1.5	1.72	0.45	70	2.0	-0.13 to -0.40	152
CMJ2000	1.68	2.0	2.32	0.35	50	2.3	-0.15 to -0.42	202
CMJ2700	2.28	2.69	3.1	0.30	30	2.7	-0.18 to -0.45	272
CMJ3500	3.0	3.55	4.1	0.25	20	3.2	-0.20 to -0.47	352
CMJ4500	3.9	4.5	5.1	0.20	10	3.7	-0.22 to -0.50	452
CMJ5750	5.0	5.75	6.5	0.05	5.0	4.5	-0.25 to -0.53	562

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Package dimensions shown are maximum values in mm.

FAMILY	SOD-923	SOD-523	SOT-523	SOT-523W	SOT-563	SOD-323	SOT-363	SOD-123	SOT-23	SOT-26	SOD-80
	 1.10 x 0.65 x 0.41	 1.80 x 0.9 x 0.8	 1.7 x 1.7 x 0.78	 1.7 x 1.68 x 0.8	 1.7 x 1.7 x 0.6	 2.6 x 1.35 x 1.0	 2.2 x 2.3 x 1.1	 3.9 x 1.8 x 1.35	 3.05 x 2.49 x 1.09	 3.0 x 3.0 x 1.2	 3.71 x 1.7
3003		CMOD3003 (1x)			CMLD3003DO (2x)	CMDD3003 (1x)	CMKD3003DO (2x)		CMPD3003 (1x) CMPD3003A CMPD3003C CMPD3003S (2x)	CMXD3003TO (3x)	
3595								CMHD3595 (1x)			CLL3595 (1x)
457A								CMHD457A (1x)			CLL457A (1x)
459A								CMHD459A (1x)			CLL459A (1x)
6001	CMAD6001 (1x)	CMOD6001 (1x)	CMSD6001 (1x) CMSD6001A CMSD6001C CMSD6001S (2x)	CMUDW6001 (1x)	CMLD6001 CMLD6001DO (2x)	CMDD6001 (1x)	CMKD6001 (3x) CMKD6000 (4x)		CMPD6001 (1x) CMPD6001A CMPD6001C CMPD6001S (2x)	CMXD6001 (3x)	

Package dimensions shown are maximum values in mm.

FAMILY	SOT-23	SOT-26
	 3.05 x 2.49 x 1.09	 3.0 x 3.0 x 1.2
S17	CBAS17 (1x)	
STB200		CMXSTB200 (2x)
STB300		CMXSTB300 (3x)
STB400		CMXSTB400 (4x)

Suffix Codes:
A = Common Anode (except CMHD457A & CMHD459A)
C = Common Cathode
S = In Series
DO = Dual, Opposing

(2x) under part number indicates two devices in one package.
(3x) under part number indicates three devices in one package.
(4x) under part number indicates four devices in one package.

High Current, Current Limiting Diodes

SOD-123FL

3.7 x 1.7 x 0.8

Package dimensions shown are maximum values in mm.

MAXIMUM RATINGS: (T_A=25°C)	**SYMBOL**		**UNITS**
Peak Operating Voltage (CMJH080 THRU CMJH180)	P_{OV}	50	V
Power Dissipation	P_D	500	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	250	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

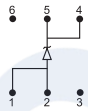
Type	Regulator Current (Note 1) I_P @ V_T=25V			Minimum Dynamic Impedance Z_T @ V_T=25V	Minimum Knee Impedance Z_K @ V_K=6.0V	Maximum Limiting Voltage V_L @ I_L=0.8 x I_P MIN	Temperature Coefficient (Note 2) TC	Marking Code
	MIN mA	NOM mA	MAX mA	MΩ	kΩ	V	%/°C	
CMJH080	6.56	8.2	9.84	0.32	15	3.1	-0.25 to -0.45	822
CMJH100	8.0	10	12	0.17	6.0	3.5	-0.25 to -0.45	103
CMJH120	9.6	12	14.4	0.08	3.0	3.8	-0.25 to -0.45	123
CMJH150	12	15	18	0.03	2.0	4.3	-0.25 to -0.45	153
CMJH180	16	18	20	0.02	1.8	4.6	-0.25 to -0.45	183

Notes: 1) Pulsed Method: Pulse Width (ms) = 27.5 divided by I_P NOM (mA)
2) The Temperature Coefficient is measured between + 25°C and +50°C.

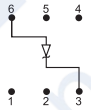
Temperature Compensated Zener Diodes

325mW
6.2 to 9.0V

Package dimensions shown are maximum values in mm.

POWER	325mW			
CASE	 2.2 x 2.3 x 1.1 SOT-363 			
	ZENER VOLTAGE ± 5% TOL V_Z @ I_{ZT}	ZENER TEST CURRENT I_{ZT}	MAXIMUM ZENER IMPEDANCE Z_{ZT} @ I_{ZT}	VOLTAGE TEMPERATURE STABILITY* ΔV_Z MAX
	VOLTS	mA	Ω	mV
CMKTC825A	6.2	7.5	20	44

Package dimensions shown are maximum values in mm.

POWER	325mW			
CASE	 3.0 x 3.0 x 1.2 SOT-26 			
	ZENER VOLTAGE ± 5% TOL V_Z @ I_{ZT}	ZENER TEST CURRENT I_{ZT}	MAXIMUM ZENER IMPEDANCE Z_{ZT} @ I_{ZT}	VOLTAGE TEMPERATURE STABILITY* ΔV_Z MAX
	VOLTS	mA	Ω	mV
CMXTC935A	9.0	7.5	–	95

* The Maximum allowable voltage change observed at the specified temperatures of -55°C, 0°C, 25°C, 75°C, and 100°C

Package dimensions shown are maximum values in mm.

Zener Diodes

100 to 250mW
1.8 to 47V

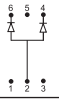
Package dimensions shown are maximum values in mm.

POWER	100mW		200mW		250mW									
CASE	 0.65 x 0.35 x 0.32 TLM2D3D6		 2.2 x 2.3 x 1.1 SOT-363		 1.80 x 0.9 x 0.8 SOD-523				 2.6 x 1.35 x 1.0 SOD-323					
ZENER VOLTAGE	INDUSTRY STANDARD	@ I_{ZT} (mA)	TRIPLE ZENER	@ I_{ZT} (mA)	INDUSTRY STANDARD	@ I_{ZT} (mA)	LOW LEVEL SHARP KNEE	@ I_{ZT} (µA)	INDUSTRY STANDARD	@ I_{ZT} (mA)	INDUSTRY STANDARD	@ I_{ZT} (mA)	LOW LEVEL SHARP KNEE	@ I_{ZT} (µA)
														
1.8	–	–	–	–	–	–	CMOZ1L8	250	–	–	–	–	CMDZ1L8	500
2.0	–	–	–	–	–	–	CMOZ2L0	250	–	–	–	–	CMDZ2L0	500
2.2	–	–	–	–	–	–	CMOZ2L2	250	–	–	–	–	CMDZ2L2	500
2.4	–	–	CMKZ5221B*	20	CMOZ2V4	5.0	CMOZ2L4	250	CMDZ5221B	20	CMDZ2V4	5.0	CMDZ2L4	500
2.5	–	–	CMKZ5222B*	20	–	–	CMOZ2L5	250	CMDZ5222B	20	–	–	CMDZ2L5	500
2.6	–	–	–	–	CMOZ2V6	5.0	–	–	–	–	CMDZ2V6	5.0	–	–
2.7	–	–	CMKZ5223B*	20	CMOZ2V7	5.0	CMOZ2L7	250	CMDZ5223B	20	CMDZ2V7	5.0	CMDZ2L7	500
2.8	–	–	CMKZ5224B*	20	–	–	–	–	CMDZ5224B	20	–	–	CMDZ2L8	500
3.0	–	–	CMKZ5225B*	20	CMOZ3V0	5.0	CMOZ3L0	250	CMDZ5225B	20	CMDZ3V0	5.0	CMDZ3L0	500
3.3	–	–	CMKZ5226B*	20	CMOZ3V3	5.0	CMOZ3L3	250	CMDZ5226B	20	CMDZ3V3	5.0	CMDZ3L3	500
3.6	–	–	CMKZ5227B*	20	CMOZ3V6	5.0	CMOZ3L6	250	CMDZ5227B	20	CMDZ3V6	5.0	CMDZ3L6	500
3.9	CTLZ3V9	5.0	CMKZ5228B*	20	CMOZ3V9	5.0	CMOZ3L9	250	CMDZ5228B	20	CMDZ3V9	5.0	CMDZ3L9	500
4.3	–	–	CMKZ5229B*	20	CMOZ4V3	5.0	CMOZ4L3	250	CMDZ5229B	20	CMDZ4V3	5.0	CMDZ4L3	500
4.7	CTLZ4V7	5.0	CMKZ5230B*	20	CMOZ4V7	5.0	CMOZ4L7	250	CMDZ5230B	20	CMDZ4V7	5.0	CMDZ4L7	500
5.1	CTLZ5V1	5.0	CMKZ5231B*	20	CMOZ5V1	5.0	CMOZ5L1	250	CMDZ5231B	20	CMDZ5V1	5.0	CMDZ5L1	500
5.6	CTLZ5V6	5.0	CMKZ5232B*	20	CMOZ5V6	5.0	CMOZ5L6	250	CMDZ5232B	20	CMDZ5V6	5.0	CMDZ5L6	500
6.0	–	–	CMKZ5233B*	20	–	–	–	–	CMDZ5233B	20	–	–	–	–
6.2	CTLZ6V2	5.0	CMKZ5234B*	20	CMOZ6V2	5.0	CMOZ6L2	250	CMDZ5234B	20	CMDZ6V2	5.0	CMDZ6L2	500
6.8	CTLZ6V8	5.0	CMKZ5235B*	20	CMOZ6V8	5.0	CMOZ6L8	250	CMDZ5235B	20	CMDZ6V8	5.0	CMDZ6L8	500
7.5	CTLZ7V5	5.0	CMKZ5236B*	20	CMOZ7V5	5.0	CMOZ7L5	250	CMDZ5236B	20	CMDZ7V5	5.0	CMDZ7L5	500
8.2	CTLZ8V2	5.0	CMKZ5237B*	20	CMOZ8V2	5.0	CMOZ8L2	250	CMDZ5237B	20	CMDZ8V2	5.0	CMDZ8L2	500
8.7	–	–	CMKZ5238B*	20	–	–	–	–	CMDZ5238B	20	–	–	–	–
9.1	–	–	CMKZ5239B*	20	CMOZ9V1	5.0	CMOZ9L1	250	CMDZ5239B	20	CMDZ9V1	5.0	CMDZ9L1	500
10	–	–	CMKZ5240B*	20	CMOZ10V	5.0	CMOZ10L	250	CMDZ5240B	20	CMDZ10V	5.0	CMDZ10L	500
11	–	–	CMKZ5241B*	20	CMOZ11V	5.0	CMOZ11L	250	CMDZ5241B	20	CMDZ11V	5.0	CMDZ11L	500
12	–	–	CMKZ5242B*	20	CMOZ12V	5.0	CMOZ12L	250	CMDZ5242B	20	CMDZ12V	5.0	CMDZ12L	500
13	–	–	CMKZ5243B*	9.5	CMOZ13V	5.0	CMOZ13L	250	CMDZ5243B	9.5	CMDZ13V	5.0	CMDZ13L	500
14	–	–	CMKZ5244B*	9.0	–	–	–	–	CMDZ5244B	9.0	–	–	–	–
15	–	–	CMKZ5245B	8.5	CMOZ15V	5.0	CMOZ15L	250	CMDZ5245B	8.5	CMDZ15V	5.0	CMDZ15L	500
16	–	–	CMKZ5246B*	7.8	CMOZ16V	5.0	CMOZ16L	250	CMDZ5246B	7.8	CMDZ16V	5.0	CMDZ16L	500
17	–	–	CMKZ5247B*	7.4	–	–	–	–	CMDZ5247B	7.4	–	–	–	500
18	–	–	CMKZ5248B*	7.0	CMOZ18V	5.0	CMOZ18L	250	CMDZ5248B	7.0	CMDZ18V	5.0	CMDZ18L	500
19	–	–	CMKZ5249B*	6.6	–	–	–	–	CMDZ5249B	6.6	–	–	–	–
20	–	–	CMKZ5250B*	6.2	CMOZ20V	5.0	CMOZ20L	250	CMDZ5250B	6.2	CMDZ20V	5.0	CMDZ20L	500
22	–	–	CMKZ5251B*	5.6	CMOZ22V	5.0	CMOZ22L	250	CMDZ5251B	5.6	CMDZ22V	5.0	CMDZ22L	500
24	–	–	CMKZ5252B*	5.2	CMOZ24V	5.0	CMOZ24L	250	CMDZ5252B	5.2	CMDZ24V	5.0	CMDZ24L	500
25	–	–	CMKZ5253B*	5.0	–	–	–	–	CMDZ5253B	5.0	–	–	–	–
27	–	–	CMKZ5254B*	4.6	CMOZ27V	5.0	CMOZ27L	250	CMDZ5254B	4.6	CMDZ27V	5.0	CMDZ27L	500
28	–	–	CMKZ5255B*	4.5	–	–	–	–	CMDZ5255B	4.5	–	–	–	–
30	–	–	CMKZ5256B*	4.2	CMOZ30V	5.0	CMOZ30L	250	CMDZ5256B	4.2	CMDZ30V	5.0	CMDZ30L	500
33	–	–	CMKZ5257B*	3.8	CMOZ33V	5.0	CMOZ33L	250	CMDZ5257B	3.8	CMDZ33V	5.0	CMDZ33L	500
36	–	–	CMKZ5258B*	3.4	CMOZ36V	5.0	CMOZ36L	250	CMDZ5258B	3.4	CMDZ36V	5.0	CMDZ36L	500
39	–	–	CMKZ5259B*	3.2	CMOZ39V	5.0	CMOZ39L	250	CMDZ5259B	3.2	CMDZ39V	5.0	CMDZ39L	500
43	–	–	CMKZ5260B*	3.0	CMOZ43V	5.0	CMOZ43L	250	CMDZ5260B	3.0	CMDZ43V	5.0	CMDZ43L	500
47	–	–	CMKZ5261B*	2.7	–	–	CMOZ47L	250	CMDZ5261B	2.7	CMDZ47V	5.0	CMDZ47L	500

* Available on special order; please consult factory.

250 to 350mW
1.8 to 75V

Package dimensions shown are maximum values in mm.

POWER	250mW						350mW							
CASE	 2.2 x 2.2 x 1.1 SOT-323				 1.7 x 1.7 x 0.6 SOT-563		 3.05 x 2.49 x 1.09 SOT-23							
ZENER VOLTAGE	INDUSTRY STANDARD	@ I_{ZT} (mA)	DUAL, COMMON ANODE	@ I_{ZT} (mA)	DUAL, COMMON ANODE	@ I_{ZT} (mA)	INDUSTRY STANDARD	@ I_{ZT} (mA)	LOW NOISE LOW LEVEL	@ I_{ZT} (µA)	LOW LEVEL	@ I_{ZT} (µA)	PROELECTRON SPECIFICATION	@ I_{ZT} (µA)
														
1.8	–	–	–	–	–	–	–	–	CMPZ4614*	250	CMPZ4678	50	–	–
2.0	–	–	–	–	–	–	–	–	CMPZ4615*	250	CMPZ4679*	50	–	–
2.2	–	–	–	–	–	–	–	–	CMPZ4616*	250	CMPZ4680*	50	–	–
2.4	CMSZ5221B	20	CMSZDA2V4	5.0	CMLZDA2V4	5.0	CMPZ5221B	20	CMPZ4617*	250	CMPZ4681*	50	BZX84C2V4	5.0
2.5	CMSZ5222B	20	–	–	–	–	CMPZ5222B	20	–	–	–	–	–	–
2.7	CMSZ5223B	20	CMSZDA2V7	5.0	CMLZDA2V7	5.0	CMPZ5223B	20	CMPZ4618*	250	CMPZ4682	50	BZX84C2V7	5.0
2.8	CMSZ5224B	20	–	–	–	–	CMPZ5224B	20	–	–	–	–	–	–
3.0	CMSZ5225B	20	CMSZDA3V0	5.0	CMLZDA3V0	5.0	CMPZ5225B	20	CMPZ4619	250	CMPZ4683	50	BZX84C3V0	5.0
3.3	CMSZ5226B	20	CMSZDA3V3	5.0	CMLZDA3V3	5.0	CMPZ5226B	20	CMPZ4620	250	CMPZ4684	50	BZX84C3V3	5.0
3.6	CMSZ5227B	20	CMSZDA3V6	5.0	CMLZDA3V6	5.0	CMPZ5227B	20	CMPZ4621	250	CMPZ4685	50	BZX84C3V6	5.0
3.9	CMSZ5228B	20	CMSZDA3V9	5.0	CMLZDA3V9	5.0	CMPZ5228B	20	CMPZ4622*	250	CMPZ4686	50	BZX84C3V9	5.0
4.3	CMSZ5229B	20	CMSZDA4V3	5.0	CMLZDA4V3	5.0	CMPZ5229B	20	CMPZ4623	250	CMPZ4687	50	BZX84C4V3	5.0
4.7	CMSZ5230B	20	CMSZDA4V7	5.0	CMLZDA4V7	5.0	CMPZ5230B	20	CMPZ4624*	250	CMPZ4688	50	BZX84C4V7	5.0
5.1	CMSZ5231B	20	CMSZDA5V1	5.0	CMLZDA5V1	5.0	CMPZ5231B	20	CMPZ5625	250	CMPZ4689	50	BZX84C5V1	5.0
5.6	CMSZ5232B	20	CMSZDA5V6	5.0	CMLZDA5V6	5.0	CMPZ5232B	20	CMPZ4626	250	CMPZ4690	50	BZX84C5V6	5.0
6.0	CMSZ5233B	20	–	–	–	–	CMPZ5233B	20	–	–	–	–	–	–
6.2	CMSZ5234B	20	CMSZDA6V2	5.0	CMLZDA6V2	5.0	CMPZ5234B	20	CMPZ4627	250	CMPZ4691	50	BZX84C6V2	5.0
6.8	CMSZ5235B	20	CMSZDA6V8	5.0	CMLZDA6V8	5.0	CMPZ5235B	20	CMPZ4099*	250	CMPZ4692	50	BZX84C6V8	5.0
7.5	CMSZ5236B	20	CMSZDA7V5	5.0	CMLZDA7V5	5.0	CMPZ5236B	20	CMPZ4100*	250	CMPZ4693	50	BZX84C7V5	5.0
8.2	CMSZ5237B	20	CMSZDA8V2	5.0	CMLZDA8V2	5.0	CMPZ5237B	20	CMPZ4101	250	CMPZ4694	50	BZX84C8V2	5.0
8.7	CMSZ5238B	20	–	–	–	–	CMPZ5238B	20	CMPZ4102*	250	CMPZ4695	50	–	–
9.1	CMSZ5239B	20	CMSZDA9V1	5.0	CMLZDA9V1	5.0	CMPZ5239B	20	CMPZ4103*	250	CMPZ4696	50	BZX84C9V1	5.0
10	CMSZ5240B	20	CMSZDA10V	5.0	CMLZDA10V	5.0	CMPZ5240B	20	CMPZ4104*	250	CMPZ4697	50	BZX84C10	5.0
11	CMSZ5241B	20	CMSZDA11V	5.0	CMLZDA11V	5.0	CMPZ5241B	20	CMPZ4105*	250	CMPZ4698	50	BZX84C11	5.0
12	CMSZ5242B	20	CMSZDA12V	5.0	CMLZDA12V	5.0	CMPZ5242B	20	CMPZ4106*	250	CMPZ4699	50	BZX84C12	5.0
13	CMSZ5243B	9.5	CMSZDA13V	5.0	CMLZDA13V	5.0	CMPZ5243B	9.5	CMPZ4107*	250	CMPZ4700	50	BZX84C13	5.0
14	CMSZ5244B	9.0	–	–	–	–	CMPZ5244B	9.0	CMPZ4108*	250	CMPZ4701	50	–	–
15	CMSZ5245B	8.5	CMSZDA15V	5.0	CMLZDA15V	5.0	CMPZ5245B	8.5	CMPZ4109*	250	CMPZ4702	50	BZX84C15	5.0
16	CMSZ5246B	7.8	CMSZDA16V	5.0	CMLZDA16V	5.0	CMPZ5246B	7.8	CMPZ4110*	250	CMPZ4703	50	BZX84C16	5.0
17	CMSZ5247B	7.4	–	–	–	–	CMPZ5247B	7.4	CMPZ4111*	250	CMPZ4704	50		–
18	CMSZ5248B	7.0	CMSZDA18V	5.0	CMLZDA18V	5.0	CMPZ5248B	7.0	CMPZ4112*	250	CMPZ4705	50	BZX84C18	5.0
19	CMSZ5249B	6.6	–	–	–	–	CMPZ5249B	6.6	CMPZ4113*	250	CMPZ4706	50	–	–
20	CMSZ5250B	6.2	CMSZDA20V	5.0	CMLZDA20V	5.0	CMPZ5250B	6.2	CMPZ4114*	250	CMPZ4707	50	BZX84C20	5.0
22	CMSZ5251B	5.6	CMSZDA22V	5.0	CMLZDA22V	5.0	CMPZ5251B	5.6	CMPZ4115*	250	CMPZ4708	50	BZX84C22	5.0
24	CMSZ5252B	5.2	CMSZDA24V	5.0	CMLZDA24V	5.0	CMPZ5252B	5.2	CMPZ4116*	250	CMPZ4709	50	BZX84C24	5.0
25	CMSZ5253B	5.0	–	–	–	–	CMPZ5253B	5.0	CMPZ4117*	250	CMPZ4710	50	–	–
27	CMSZ5254B	4.6	CMSZDA27V	2.0	CMLZDA27V	2.0	CMPZ5254B	4.6	CMPZ4118*	250	CMPZ4711	50	BZX84C27	2.0
28	CMSZ5255B	4.5	–	–	–	–	CMPZ5255B	4.5	CMPZ4119*	250	CMPZ4712	50	–	–
30	CMSZ5256B	4.2	CMSZDA30V	2.0	CMLZDA30V	2.0	CMPZ5256B	4.2	CMPZ4120*	250	CMPZ4713	50	BZX84C30	2.0
33	CMSZ5257B	3.8	CMSZDA33V	2.0	CMLZDA33V	2.0	CMPZ5257B	3.8	CMPZ4121*	250	CMPZ4714	50	BZX84C33	2.0
36	CMSZ5258B	3.4	CMSZDA36V	2.0	CMLZDA36V	2.0	CMPZ5258B	3.4	CMPZ4122*	250	CMPZ4715	50	–	–
39	CMSZ5259B	3.2	CMSZDA39V	2.0	CMLZDA39V	2.0	CMPZ5259B	3.2	CMPZ4123*	250	CMPZ4716*	50	–	–
43	CMSZ5260B	3.0	CMSZDA43V	2.0	CMLZDA43V	2.0	CMPZ5260B	3.0	CMPZ4124*	250	CMPZ4717*	50	–	–
47	CMSZ5261B	2.7	CMSZDA47V	2.0	CMLZDA47V	2.0	CMPZ5261B	2.7	–	–	–	–	–	–
51	–	–	–	–	–	–	CMPZ5262B*	2.5	–	–	–	–	BZX84C51*	2.0
56	–	–	–	–	–	–	CMPZ5263B*	2.2	–	–	–	–	–	–
60	–	–	–	–	–	–	CMPZ5264B*	2.1	–	–	–	–	–	–
62	–	–	–	–	–	–	CMPZ5265B*	2.0	–	–	–	–	–	–
68	–	–	–	–	–	–	CMPZ5266B*	1.8	–	–	–	–	–	–
75	–	–	–	–	–	–	CMPZ5267B*	1.7	–	–	–	–	–	–

* Available on special order; please consult factory.

350mW
2.4 to 47V

Package dimensions shown are maximum values in mm.

POWER	350mW					
CASE	 3.05 x 2.49 x 1.09 SOT-23				 3.0 x 3.0 x 1.2 SOT-26	
ZENER VOLTAGE	DUAL, COMMON CATHODE	@ I_{ZT} (mA)	DUAL, COMMON ANODE	@ I_{ZT} (mA)	INDUSTRY STANDARD	@ I_{ZT} (mA)
						
2.4	CMPZDC2V4*	5.0	CMPZDA2V4	5.0	CMXZ2V4TO*	5.0
2.7	CMPZDC2V7*	5.0	CMPZDA2V7	5.0	CMXZ2V7TO*	5.0
3.0	CMPZDC3V0*	3.0	CMPZDA3V0	3.0	CMXZ3V0TO*	5.0
3.3	CMPZDC3V3*	3.0	CMPZDA3V3	3.0	CMXZ3V3TO*	5.0
3.6	CMPZDC3V6*	5.0	CMPZDA3V6	5.0	CMXZ3V6TO*	5.0
3.9	CMPZDC3V9*	5.0	CMPZDA3V9	5.0	CMXZ3V9TO*	5.0
4.3	CMPZDC4V3*	5.0	CMPZDA4V3	5.0	CMXZ4V3TO*	5.0
4.7	CMPZDC4V7*	5.0	CMPZDA4V7	5.0	CMXZ4V7TO*	5.0
5.1	CMPZDC5V1*	5.0	CMPZDA5V1	5.0	CMXZ5V1TO*	5.0
5.6	CMPZDC5V6	5.0	CMPZDA5V6	5.0	CMXZ5V6TO*	5.0
6.2	CMPZDC6V2*	5.0	CMPZDA6V2	5.0	CMXZ6V2TO*	5.0
6.8	CMPZDC6V8*	5.0	CMPZDA6V8	5.0	CMXZ6V8TO*	5.0
7.5	CMPZDC7V5*	5.0	CMPZDA7V5	5.0	CMXZ7V5TO*	5.0
8.2	CMPZDC8V2*	5.0	CMPZDA8V2	5.0	CMXZ8V2TO*	5.0
9.1	CMPZDC9V1*	5.0	CMPZDA9V1	5.0	CMXZ9V1TO*	5.0
10	CMPZDC10V*	5.0	CMPZDA10V	5.0	CMXZ10VTO*	5.0
11	CMPZDC11V*	5.0	CMPZDA11V	5.0	CMXZ11VTO*	5.0
12	CMPZDC12V*	5.0	CMPZDA12V	5.0	CMXZ12VTO*	5.0
13	CMPZDC13V*	5.0	CMPZDA13V	5.0	CMXZ13VTO*	5.0
15	CMPZDC15V*	5.0	CMPZDA15V	5.0	CMXZ15VTO*	5.0
16	CMPZDC16V*	5.0	CMPZDA16V	5.0	CMXZ16VTO*	5.0
18	CMPZDC18V*	5.0	CMPZDA18V	5.0	CMXZ18VTO*	5.0
20	CMPZDC20V*	5.0	CMPZDA20V	5.0	CMXZ20VTO*	5.0
22	CMPZDC22V*	5.0	CMPZDA22V	5.0	CMXZ22VTO*	5.0
24	CMPZDC24V*	5.0	CMPZDA24V	5.0	CMXZ24VTO*	5.0
27	CMPZDC27V	2.0	CMPZDA27V	2.0	CMXZ27VTO*	2.0
30	CMPZDC30V*	2.0	CMPZDA30V	2.0	CMXZ30VTO	2.0
33	CMPZDC33V*	2.0	CMPZDA33V	2.0	CMXZ33VTO*	2.0
36	CMPZDC36V*	2.0	CMPZDA36V	2.0	CMXZ36VTO*	2.0
39	CMPZDC39V*	2.0	CMPZDA39V	2.0	CMXZ39VTO*	2.0
43	CMPZDC43V*	2.0	CMPZDA43V	2.0	CMXZ43VTO*	2.0
47	CMPZDC47V*	2.0	CMPZDA47V	2.0	CMXZ47VTO*	2.0

* Available on special order; please consult factory.

500mW
1.8 to 75V

Package dimensions shown are maximum values in mm.

POWER	500mW									
CASE	 3.9 x 1.8 x 1.35 SOD-123						Extended Voltage Range  3.71 x 1.7 SOD-80			
ZENER VOLTAGE	INDUSTRY STANDARD	@ I_{ZT} (mA)	LOW LEVEL	@ I_{ZT} (µA)	LOW LEVEL LOW NOISE	@ I_{ZT} (µA)	INDUSTRY STANDARD	@ I_{ZT} (mA)		@ I_{ZT} (mA)
1.8	–	–	CMHZ4678	50	CMHZ4614	250	–	–	–	–
2.0	–	–	CMHZ4679	50	CMHZ4615	250	–	–	–	–
2.2	–	–	CMHZ4680	50	CMHZ4616	250	–	–	–	–
2.4	CMHZ5221B	20	CMHZ4681	50	CMHZ4617	250	CLL5221B*	20	BZV55C2V4	5.0
2.5	CMHZ5222B	20	–	–	–	–	CLL5222B	20	–	–
2.7	CMHZ5223B	20	CMHZ4682	50	CMHZ4618	250	CLL5223B*	20	BZV55C2V7	5.0
2.8	CMHZ5224B	20	–	–	–	–	CLL5224B*	20	–	–
3.0	CMHZ5225B	20	CMHZ4683	50	CMHZ4619	250	CLL5225B	20	BZV55C3V0	5.0
3.3	CMHZ5226B	20	CMHZ4684	50	CMHZ4620	250	CLL5226B	20	BZV55C3V3	5.0
3.6	CMHZ5227B	20	CMHZ4685	50	CMHZ4621	250	CLL5227B	20	BZV55C3V6	5.0
3.9	CMHZ5228B	20	CMHZ4686	50	CMHZ4622	250	CLL5228B	20	BZV55C3V9	5.0
4.3	CMHZ5229B	20	CMHZ4687	50	CMHZ4623	250	CLL5229B	20	BZV55C4V3	5.0
4.7	CMHZ5230B	20	CMHZ4688	50	CMHZ4624	250	CLL5230B	20	BZV55C4V7	5.0
5.1	CMHZ5231B	20	CMHZ4689	50	CMHZ4625	250	CLL5231B	20	BZV55C5V1	5.0
5.6	CMHZ5232B	20	CMHZ4690	50	CMHZ4626	250	CLL3232B	20	BZV55C5V6	5.0
6.0	CMHZ5233B	20	–	–	–	–	CLL5233B	20	–	–
6.2	CMHZ5234B	20	CMHZ4691	50	CMHZ4627	250	CLL5234B	20	BZV55C6V2	5.0
6.8	CMHZ5235B	20	CMHZ4692	50	CMHZ4099	250	CLL5235B	20	BZV55C6V8	5.0
7.5	CMHZ5236B	20	CMHZ4693	50	CMHZ4100	250	CLL5236B	20	BZV55C7V5	5.0
8.2	CMHZ5237B	20	CMHZ4694	50	CMHZ4101	250	CLL5237B	20	BZV55C8V2	5.0
8.7	CMHZ5238B	20	CMHZ4695	50	CMHZ4102	250	CLL5238B	20	–	–
9.1	CMHZ5239B	20	CMHZ4696	50	CMHZ4103	250	CLL5239B	20	BZV55C9V1	5.0
10	CMHZ5240B	20	CMHZ4697	50	CMHZ4104	250	CLL5240B	20	BZV55C10	5.0
11	CMHZ5241B	20	CMHZ4698	50	CMHZ4105	250	CLL5241B	20	BZV55C11	5.0
12	CMHZ5242B	20	CMHZ4699	50	CMHZ4106	250	CLL5242B	20	BZV55C12	5.0
13	CMHZ5243B	9.5	CMHZ4700	50	CMHZ4107	250	CLL4243B	9.5	BZV55C13	5.0
14	CMHZ5244B	9.0	CMHZ4701	50	CMHZ4108	250	CLL5244B	9.0	–	–
15	CMHZ5245B	8.5	CMHZ4702	50	CMHZ4109	250	CLL5245B	8.5	BZV55C15	5.0
16	CMHZ5246B	7.8	CMHZ4703	50	CMHZ4110	250	CLL5246B	7.8	BZV55C16	5.0
17	CMHZ5247B	7.4	CMHZ4704	50	CMHZ4111	250	CLL5247B	7.4	–	–
18	CMHZ5248B	7.0	CMHZ4705	50	CMHZ4112	250	CLL5248B	7.0	BZV55C18	5.0
19	CMHZ5249B	6.6	CMHZ4706	50	CMHZ4113	250	CLL5249B	6.6	–	–
20	CMHZ5250B	6.2	CMHZ4707	50	CMHZ4114	250	CLL5250B	6.2	BZV55C20	5.0
22	CMHZ5251B	5.6	CMHZ4708	50	CMHZ4115	250	CLL5251B	5.6	BZV55C22	5.0
24	CMHZ5252B	5.2	CMHZ4709	50	CMHZ4116	250	CLL5252B	5.2	BZV55C24	5.0
25	CMHZ5253B	5.0	CMHZ4710	50	CMHZ4117	250	CLL5253B	5.0	–	–
27	CMHZ5254B	4.6	CMHZ4711	50	CMHZ4118	250	CLL5254B	4.6	BZV55C27	2.0
28	CMHZ5255B	4.5	CMHZ4712	50	CMHZ4119	250	CLL5255B	4.5	–	–
30	CMHZ5256B	4.2	CMHZ4713	50	CMHZ4120	250	CLL5256B	4.2	BZV55C30	2.0
33	CMHZ5257B	3.8	CMHZ4714	50	CMHZ4121	250	CLL5257B	3.8	BZV55C33	2.0
36	CMHZ5258B	3.4	CMHZ4715	50	CMHZ4122	250	CLL5258B	3.4	BZV55C36	2.0
39	CMHZ5259B	3.2	CMHZ4716	50	CMHZ4123	250	CLL5259B	3.2	BZV55C39	2.0
43	CMHZ5260B	3.0	CMHZ4717	50	CMHZ4124	250	CLL5260B	3.0	BZV55C43	2.0
47	CMHZ5261B	2.7	–	–	CMHZ4125	250	CLL5261B	2.7	BZV55C47	2.0
51	CMHZ5262B*	2.5	–	–	–	–	CLL5262B	2.5	BZV55C51	2.0
56	CMHZ5263B*	2.2	–	–	–	–	CLL5263B	2.2	BZV55C56	2.0
60	CMHZ5264B*	2.1	–	–	–	–	CLL5264B	2.1	–	–
62	CMHZ5265B*	2.0	–	–	–	–	CLL5265B	2.0	BZV55C62	2.0
68	CMHZ5266B*	1.8	–	–	–	–	CLL5266B	1.8	BZV55C68	2.0
75	CMHZ5267B*	1.7	–	–	–	–	CLL5267B	1.7	BZV55C75	2.0

Package dimensions shown are maximum values in mm.

* Available on special order; please consult factory.

1.0 to 10W
3.3 to 200V

Package dimensions shown are maximum values in mm.

POWER	1.0W		1.5W		3.0W		10W	
CASE	 5.31 x 2.69 MELF		 5.59 x 2.92 x 2.62 SMA		 5.59 x 3.81 x 2.44 SMB		 8.13 x 6.22 x 2.62 SMC	
ZENER VOLTAGE	GENERAL PURPOSE	@ I_{ZT} (mA)	1.5 WATT ZENER + 200W TVS	@ I_{ZT} (mA)	3.0 WATT ZENER	@ I_{ZT} (mA)	HIGH POWER	@ I_{ZT} (mA)
3.3	CLL4728A	76	CMZ5913B	113.6	CMZ5913BP	113.6	–	–
3.6	CLL4729A	69	CMZ5914B	104.2	CMZ5914BP	104.2	CMZ5334B	350
3.9	CLL4730A	64	CMZ5915B	96.1	CMZ5915BP	96.1	CMZ5335B	320
4.3	CLL4731A	58	CMZ5916B	87.2	CMZ5916BP	87.2	CMZ5336B	290
4.7	CLL4732A	53	CMZ5917B	79.8	CMZ5917BP	79.8	CMZ5337B	264
5.1	CLL4733A	49	CMZ5918B	73.5	CMZ5918BP	73.5	CMZ5338B	240
5.6	CLL4734A	45	CMZ5919B	66.9	CMZ5919BP	66.9	CMZ5339B	220
6.2	CLL4735A	41	CMZ5920B	60.5	CMZ5920BP	60.5	CMZ5340B	200
6.8	CLL4736A	37	CMZ5921B	55.1	CMZ5921BP	55.1	CMZ5342B	175
7.5	CLL4737A	34	CMZ5922B	50.0	CMZ5922BP	50.0	CMZ5343B	175
8.2	CLL4738A	31	CMZ5923B	45.7	CMZ5923BP	45.7	CMZ5344B	150
8.7	–	–	–	–	–	–	CMZ5345B	150
9.1	CLL4739A	28	CMZ5924B	41.2	CMZ5924BP	41.2	CMZ5346B	150
10	CLL4740A	25	CMZ5925B	37.5	CMZ5925BP	37.5	CMZ5347B	125
11	CLL4741A	23	CMZ5926B	34.1	CMZ5926BP	34.1	CMZ5348B	125
12	CLL4742A	21	CMZ5927B	31.2	CMZ5927BP	31.2	CMZ5349B	100
13	CLL4743A	19	CMZ5928B	28.8	CMZ5928BP	28.8	CMZ5350B	100
14	–	–	–	–	–	–	CMZ5351B	100
15	CLL4744A	17	CMZ5929B	25.0	CMZ5929BP	25.0	CMZ5352B	75
16	CLL4745A	15.5	CMZ5930B	23.4	CMZ5930BP	23.4	CMZ5353B	75
17	–	–	–	–	–	–	CMZ5354B	70
18	CLL4746A	14.0	CMZ5931B	20.8	CMZ5931BP	20.8	CMZ5355B	65
19	–	–	–	–	–	–	CMZ5356B	65
20	CLL4747A	12.5	CMZ5932B	18.7	CMZ5932BP	18.7	CMZ5357B	65
22	CLL4748A	11.5	CMZ5933B	17.0	CMZ5933BP	17.0	CMZ5358B	50
24	CLL4749A	10.5	CMZ5934B	15.6	CMZ5934BP	15.6	CMZ5359B	50
25	–	–	–	–	–	–	CMZ5360B	50
27	CLL4750A	9.5	CMZ5935B	13.9	CMZ5935BP	13.9	CMZ5361B	50
28	–	–	–	–	–	–	CMZ5362B	50
30	CLL4751A	8.5	CMZ5936B	12.5	CMZ5936BP	12.5	CMZ5363B	40
33	CLL4752A	7.5	CMZ5937B	11.4	CMZ5937BP	11.4	CMZ5364B	40
36	CLL4753A	7.0	CMZ5938B	10.4	CMZ5938BP	10.4	CMZ5365B	30
39	CLL4754A	6.5	CMZ5939B	9.6	CMZ5939BP	9.6	CMZ5366B	30
43	CLL4755A	6.0	CMZ5940B	8.7	CMZ5940BP	8.7	CMZ5367B	30
47	CLL4756A	5.5	CMZ5941B	8.0	CMZ5941BP	8.0	CMZ5368B	25
51	CLL4757A	5.0	CMZ5942B	7.3	CMZ5942BP	7.3	CMZ5369B	25
56	CLL4758A	4.5	CMZ5943B	6.7	CMZ5943BP	6.7	CMZ5370B	20
60	–	–	–	–	–	–	CMZ5371B	20
62	CLL4759A	4.0	CMZ5944B	6.0	CMZ5944BP	6.0	CMZ5372B	20
68	CLL4760A	3.7	CMZ5945B	5.5	CMZ5945BP	5.5	CMZ5373B	20
75	CLL4761A	3.3	CMZ5946B	5.0	CMZ5946BP	5.0	CMZ5374B	20
82	–	3.0	CMZ5947B	4.6	CMZ5947BP	4.6	CMZ5375B	15
87	–	–	–	–	–	–	CMZ5376B	15
91	–	2.8	CMZ5948B	4.1	CMZ5948BP	4.1	CMZ5377B	15
100	–	2.5	CMZ5949B	3.7	CMZ5949BP	3.7	CMZ5378B	12
110	–	–	CMZ5950B	3.4	CMZ5950BP	3.4	CMZ5379B	12
120	–	–	CMZ5951B	3.1	CMZ5951BP	3.1	CMZ5380B	10
130	–	–	CMZ5952B	2.9	CMZ5952BP	2.9	CMZ5381B	10
140	–	–	–	–	–	–	CMZ5382B	8.0
150	–	–	CMZ5953B	2.5	CMZ5953BP	2.5	CMZ5383B	8.0
160	–	–	CMZ5954B	2.3	CMZ5954BP	2.3	CMZ5384B	8.0
170	–	–	–	–	–	–	CMZ5385B	8.0
180	–	–	CMZ5955B	2.1	CMZ5955BP	2.1	CMZ5386B	5.0
190	–	–	–	–	–	–	CMZ5387B	5.0
200	–	–	CMZ5956B	1.9	CMZ5956BP	1.9	CMZ5388B	5.0

Package dimensions shown are maximum values in mm.

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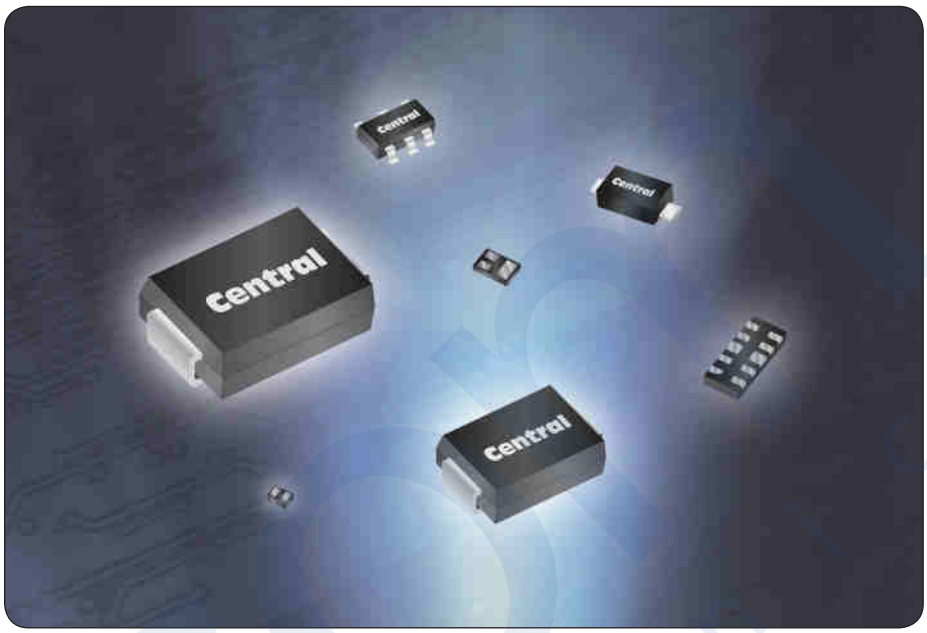


Protection Devices

Central™ Semiconductor Corp.

Transient Voltage Suppressors (TVS)

200 to 600W
5.0 to 220V

Specified by

Package dimensions shown are maximum values in mm.

POWER	200W		400W				600W			
CASE	 3.95 x 1.95 x 1.08 SOD-123F		 4.9 x 2.6 x 1.1 SMAFL		 5.59 x 2.92 x 2.62 SMA		 5.59 x 3.81 x 2.44 SMB			
REVERSE STAND-OFF VOLTAGE V_{RWM}	UNI-POLAR	@ I_T (mA)	UNI-POLAR	@ I_T (mA)	UNI-POLAR	@ I_T (mA)	UNI-POLAR	@ I_T (mA)	BI-POLAR	@ I_T (mA)
5.0	CMF5.0A	10	–	–	P4SMA5.0A	1.0	1SMB5.0A	10	1SMB5.0CA	10
6.0	CMF6.0A	10	–	–	P4SMA6.0A	1.0	1SMB6.0A	10	1SMB6.0CA	10
6.5	CMF6.5A	10	–	–	P4SMA6.5A	1.0	1SMB6.5A	10	1SMB6.5CA	10
7.0	CMF7.0A	10	–	–	P4SMA7.0A	1.0	1SMB7.0A	10	1SMB7.0CA	10
7.5	CMF7.5A	1.0	–	–	P4SMA7.5A	1.0	1SMB7.5A	1.0	1SMB7.5CA	1.0
8.0	CMF8.0A	1.0	–	–	P4SMA8.0A	1.0	1SMB8.0A	1.0	1SMB8.0CA	1.0
8.5	CMF8.5A	1.0	C4SMAFL8.5A	1.0	P4SMA8.5A	1.0	1SMB8.5A	1.0	1SMB8.5CA	1.0
9.0	CMF9.0A	1.0	C4SMAFL9.0A	1.0	P4SMA9.0A	1.0	1SMB9.0A	1.0	1SMB9.0CA	1.0
10	CMF10A	1.0	C4SMAFL10A	1.0	P4SMA10A	1.0	1SMB10A	1.0	1SMB10CA	1.0
11	CMF11A	1.0	C4SMAFL11A	1.0	P4SMA11A	1.0	1SMB11A	1.0	1SMB11CA	1.0
12	CMF12A	1.0	C4SMAFL12A	1.0	P4SMA12A	1.0	1SMB12A	1.0	1SMB12CA	1.0
13	CMF13A	1.0	C4SMAFL13A	1.0	P4SMA13A	1.0	1SMB13A	1.0	1SMB13CA	1.0
14	CMF14A	1.0	C4SMAFL14A	1.0	P4SMA14A	1.0	1SMB14A	1.0	1SMB14CA	1.0
15	CMF15A	1.0	C4SMAFL15A	1.0	P4SMA15A	1.0	1SMB15A	1.0	1SMB15CA	1.0
16	CMF16A	1.0	C4SMAFL16A	1.0	P4SMA16A	1.0	1SMB16A	1.0	1SMB16CA	1.0
17	CMF17A	1.0	C4SMAFL17A	1.0	P4SMA17A	1.0	1SMB17A	1.0	1SMB17CA	1.0
18	CMF18A	1.0	C4SMAFL18A	1.0	P4SMA18A	1.0	1SMB18A	1.0	1SMB18CA	1.0
20	CMF20A	1.0	C4SMAFL20A	1.0	P4SMA20A	1.0	1SMB20A	1.0	1SMB20CA	1.0
22	CMF22A	1.0	C4SMAFL22A	1.0	P4SMA22A	1.0	1SMB22A	1.0	1SMB22CA	1.0
24	CMF24A	1.0	C4SMAFL24A	1.0	P4SMA24A	1.0	1SMB24A	1.0	1SMB24CA	1.0
26	CMF26A	1.0	C4SMAFL26A	1.0	P4SMA26A	1.0	1SMB26A	1.0	1SMB26CA	1.0
28	CMF28A	1.0	C4SMAFL28A	1.0	P4SMA28A	1.0	1SMB28A	1.0	1SMB28CA	1.0
30	CMF30A	1.0	C4SMAFL30A	1.0	P4SMA30A	1.0	1SMB30A	1.0	1SMB30CA	1.0
33	CMF33A	1.0	C4SMAFL33A	1.0	P4SMA33A	1.0	1SMB33A	1.0	1SMB33CA	1.0
36	CMF36A	1.0	C4SMAFL36A	1.0	P4SMA36A	1.0	1SMB36A	1.0	1SMB36CA	1.0
40	CMF40A	1.0	C4SMAFL40A	1.0	P4SMA40A	1.0	1SMB40A	1.0	1SMB40CA	1.0
43	CMF43A	1.0	C4SMAFL43A	1.0	P4SMA43A	1.0	1SMB43A	1.0	1SMB43CA	1.0
45	CMF45A	1.0	C4SMAFL45A	1.0	P4SMA45A	1.0	1SMB45A	1.0	1SMB45CA	1.0
48	CMF48A	1.0	C4SMAFL48A	1.0	P4SMA48A	1.0	1SMB48A	1.0	1SMB48CA	1.0
51	CMF51A	1.0	C4SMAFL51A	1.0	P4SMA51A	1.0	1SMB51A	1.0	1SMB51CA	1.0
54	CMF54A	1.0	C4SMAFL54A	1.0	P4SMA54A	1.0	1SMB54A	1.0	1SMB54CA	1.0
58	CMF58A	1.0	C4SMAFL58A	1.0	P4SMA58A	1.0	1SMB58A	1.0	1SMB58CA	1.0
60	CMF60A	1.0	C4SMAFL60A	1.0	P4SMA60A	1.0	1SMB60A	1.0	1SMB60CA	1.0
64	CMF64A	1.0	C4SMAFL64A	1.0	P4SMA64A	1.0	1SMB64A	1.0	1SMB64CA	1.0
70	CMF70A	1.0	C4SMAFL70A	1.0	P4SMA70A	1.0	1SMB70A	1.0	1SMB70CA	1.0
75	CMF75A	1.0	C4SMAFL75A	1.0	P4SMA75A	1.0	1SMB75A	1.0	1SMB75CA	1.0
78	CMF78A	1.0	C4SMAFL78A	1.0	P4SMA78A	1.0	1SMB78A	1.0	1SMB78CA	1.0
85	CMF85A	1.0	C4SMAFL85A	1.0	P4SMA85A	1.0	1SMB85A	1.0	1SMB85CA	1.0
90	CMF90A	1.0	C4SMAFL90A	1.0	P4SMA90A	1.0	1SMB90A	1.0	1SMB90CA	1.0
100	CMF100A	1.0	C4SMAFL100A	1.0	P4SMA100A	1.0	1SMB100A	1.0	1SMB100CA	1.0
110	CMF110A	1.0	C4SMAFL110A	1.0	P4SMA110A	1.0	1SMB110A	1.0	1SMB110CA	1.0
120	CMF120A	1.0	C4SMAFL120A	1.0	P4SMA120A	1.0	1SMB120A	1.0	1SMB120CA	1.0
130	CMF130A	1.0	C4SMAFL130A	1.0	P4SMA130A	1.0	1SMB130A	1.0	1SMB130CA	1.0
150	CMF150A	1.0	C4SMAFL150A	1.0	P4SMA150A	1.0	1SMB150A	1.0	1SMB150CA	1.0
160	CMF160A	1.0	C4SMAFL160A	1.0	P4SMA160A	1.0	1SMB160A	1.0	1SMB160CA	1.0
170	CMF170A	1.0	C4SMAFL170A	1.0	P4SMA170A	1.0	1SMB170A	1.0	1SMB170CA	1.0
180	–	–	–	–	P4SMA180A	1.0	–	–	–	–
190	–	–	–	–	P4SMA190A	1.0	–	–	–	–
200	–	–	–	–	P4SMA200A	1.0	–	–	–	–
210	–	–	–	–	P4SMA210A	1.0	–	–	–	–
220	–	–	–	–	P4SMA220A	1.0	–	–	–	–

Transient Voltage Suppressors (TVS continued)

1500 to 5000W
5.0 to 170V

Specified by

Package dimensions shown are maximum values in mm.

POWER	1500W				3000W				5000W	
CASE	 8.13 x 6.22 x 2.62 SMC									
REVERSE STAND-OFF VOLTAGE V_{RWM}	UNI-POLAR	@ I_T (mA)	BI-POLAR	@ I_T (mA)	UNI-POLAR	@ I_T (mA)	BI-POLAR	@ I_T (mA)	UNI-POLAR	@ I_T (mA)
5.0	1SMC5.0A	10	1SMC5.0CA	10	3SMC5.0A	10	3SMC5.0CA	10	-	-
6.0	1SMC6.0A	10	1SMC6.0CA	10	3SMC6.0A	10	3SMC6.0CA	10	-	-
6.5	1SMC6.5A	10	1SMC6.5CA	10	3SMC6.5A	10	3SMC6.5CA	10	-	-
7.0	1SMC7.0A	10	1SMC7.0CA	10	3SMC7.0A	10	3SMC7.0CA	10	-	-
7.5	1SMC7.5A	1.0	1SMC7.5CA	1.0	3SMC7.5A	1.0	3SMC7.5CA	1.0	-	-
8.0	1SMC8.0A	1.0	1SMC8.0CA	1.0	3SMC8.0A	1.0	3SMC8.0CA	1.0	-	-
8.5	1SMC8.5A	1.0	1SMC8.5CA	1.0	3SMC8.5A	1.0	3SMC8.5CA	1.0	-	-
9.0	1SMC9.0A	1.0	1SMC9.0CA	1.0	3SMC9.0A	1.0	3SMC9.0CA	1.0	-	-
10	1SMC10A	1.0	1SMC10CA	1.0	3SMC10A	1.0	3SMC10CA	1.0	-	-
11	1SMC11A	1.0	1SMC11CA	1.0	3SMC11A	1.0	3SMC11CA	1.0	-	-
12	1SMC12A	1.0	1SMC12CA	1.0	3SMC12A	1.0	3SMC12CA	1.0	-	-
13	1SMC13A	1.0	1SMC13CA	1.0	3SMC13A	1.0	3SMC13CA	1.0	-	-
14	1SMC14A	1.0	1SMC14CA	1.0	3SMC14A	1.0	3SMC14CA	1.0	-	-
15	1SMC15A	1.0	1SMC15CA	1.0	3SMC15A	1.0	3SMC15CA	1.0	-	-
16	1SMC16A	1.0	1SMC16CA	1.0	3SMC16A	1.0	3SMC16CA	1.0	-	-
17	1SMC17A	1.0	1SMC17CA	1.0	3SMC17A	1.0	3SMC17CA	1.0	-	-
18	1SMC18A	1.0	1SMC18CA	1.0	3SMC18A	1.0	3SMC18CA	1.0	-	-
20	1SMC20A	1.0	1SMC20CA	1.0	3SMC20A	1.0	3SMC20CA	1.0	-	-
22	1SMC22A	1.0	1SMC22CA	1.0	3SMC22A	1.0	3SMC22CA	1.0	-	-
24	1SMC24A	1.0	1SMC24CA	1.0	3SMC24A	1.0	3SMC24CA	1.0	-	-
26	1SMC26A	1.0	1SMC26CA	1.0	3SMC26A	1.0	3SMC26CA	1.0	-	-
28	1SMC28A	1.0	1SMC28CA	1.0	3SMC28A	1.0	3SMC28CA	1.0	-	-
30	1SMC30A	1.0	1SMC30CA	1.0	3SMC30A	1.0	3SMC30CA	1.0	-	-
33	1SMC33A	1.0	1SMC33CA	1.0	3SMC33A	1.0	3SMC33CA	1.0	5SMC33A	1.0
36	1SMC36A	1.0	1SMC36CA	1.0	3SMC36A	1.0	3SMC36CA	1.0	5SMC36A	1.0
40	1SMC40A	1.0	1SMC40CA	1.0	3SMC40A	1.0	3SMC40CA	1.0	5SMC40A	1.0
43	1SMC43A	1.0	1SMC43CA	1.0	3SMC43A	1.0	3SMC43CA	1.0	5SMC43A	1.0
45	1SMC45A	1.0	1SMC45CA	1.0	3SMC45A	1.0	3SMC45CA	1.0	5SMC45A	1.0
48	1SMC48A	1.0	1SMC48CA	1.0	3SMC48A	1.0	3SMC48CA	1.0	5SMC48A	1.0
51	1SMC51A	1.0	1SMC51CA	1.0	3SMC51A	1.0	3SMC51CA	1.0	5SMC51A	1.0
54	1SMC54A	1.0	1SMC54CA	1.0	3SMC54A	1.0	3SMC54CA	1.0	5SMC54A	1.0
58	1SMC58A	1.0	1SMC58CA	1.0	3SMC58A	1.0	3SMC58CA	1.0	5SMC58A	1.0
60	1SMC60A	1.0	1SMC60CA	1.0	3SMC60A	1.0	3SMC60CA	1.0	5SMC60A	1.0
64	1SMC64A	1.0	1SMC64CA	1.0	3SMC64A	1.0	3SMC64CA	1.0	5SMC64A	1.0
70	1SMC70A	1.0	1SMC70CA	1.0	3SMC70A	1.0	3SMC70CA	1.0	5SMC70A	1.0
75	1SMC75A	1.0	1SMC75CA	1.0	3SMC75A	1.0	3SMC75CA	1.0	5SMC75A	1.0
78	1SMC78A	1.0	1SMC78CA	1.0	3SMC78A	1.0	3SMC78CA	1.0	5SMC78A	1.0
85	1SMC85A	1.0	1SMC85CA	1.0	3SMC85A	1.0	3SMC85CA	1.0	5SMC85A	1.0
90	1SMC90A	1.0	1SMC90CA	1.0	3SMC90A	1.0	3SMC90CA	1.0	5SMC90A	1.0
100	1SMC100A	1.0	1SMC100CA	1.0	3SMC100A	1.0	3SMC100CA	1.0	5SMC100A	1.0
110	1SMC110A	1.0	1SMC110CA	1.0	3SMC110A	1.0	3SMC110CA	1.0	5SMC110A	1.0
120	1SMC120A	1.0	1SMC120CA	1.0	3SMC120A	1.0	3SMC120CA	1.0	5SMC120A	1.0
130	1SMC130A	1.0	1SMC130CA	1.0	3SMC130A	1.0	3SMC130CA	1.0	5SMC130A	1.0
150	1SMC150A	1.0	1SMC150CA	1.0	3SMC150A	1.0	3SMC150CA	1.0	5SMC150A	1.0
160	1SMC160A	1.0	1SMC160CA	1.0	3SMC160A	1.0	3SMC160CA	1.0	5SMC160A	1.0
170	1SMC170A	1.0	1SMC170CA	1.0	3SMC170A	1.0	3SMC170CA	1.0	5SMC170A	1.0

Transient Voltage Suppressors (TVS continued)

600 to 1500W
6.8 to 250V

Specified by

Package dimensions shown are maximum values in mm.

POWER	600W				1500W			
CASE	 5.59 x 3.81 x 2.44 SMB				 8.13 x 6.22 x 2.62 SMC			
BREAKDOWN VOLTAGE V_{BR}	UNI-POLAR	@ I_T (mA)	BI-POLAR	@ I_T (mA)	UNI-POLAR	@ I_T (mA)	BI-POLAR	@ I_T (mA)
6.8	P6SMB6.8A	10	P6SMB6.8CA	10	1.5SMC6.8A	10	1.5SMC6.8CA	10
7.5	P6SMB7.5A	10	P6SMB7.5CA	10	1.5SMC7.5A	10	1.5SMC7.5CA	10
8.2	P6SMB8.2A	10	P6SMB8.2CA	10	1.5SMC8.2A	10	1.5SMC8.2CA	10
9.1	P6SMB9.1A	1.0	P6SMB9.1CA	1.0	1.5SMC9.1A	1.0	1.5SMC9.1CA	1.0
10	P6SMB10A	1.0	P6SMB10CA	1.0	1.5SMC10A	1.0	1.5SMC10CA	1.0
11	P6SMB11A	1.0	P6SMB11CA	1.0	1.5SMC11A	1.0	1.5SMC11CA	1.0
12	P6SMB12A	1.0	P6SMB12CA	1.0	1.5SMC12A	1.0	1.5SMC12CA	1.0
13	P6SMB13A	1.0	P6SMB13CA	1.0	1.5SMC13A	1.0	1.5SMC13CA	1.0
15	P6SMB15A	1.0	P6SMB15CA	1.0	1.5SMC15A	1.0	1.5SMC15CA	1.0
16	P6SMB16A	1.0	P6SMB16CA	1.0	1.5SMC16A	1.0	1.5SMC16CA	1.0
18	P6SMB18A	1.0	P6SMB18CA	1.0	1.5SMC18A	1.0	1.5SMC18CA	1.0
20	P6SMB20A	1.0	P6SMB20CA	1.0	1.5SMC20A	1.0	1.5SMC20CA	1.0
22	P6SMB22A	1.0	P6SMB22CA	1.0	1.5SMC22A	1.0	1.5SMC22CA	1.0
24	P6SMB24A	1.0	P6SMB24CA	1.0	1.5SMC24A	1.0	1.5SMC24CA	1.0
27	P6SMB27A	1.0	P6SMB27CA	1.0	1.5SMC27A	1.0	1.5SMC27CA	1.0
30	P6SMB30A	1.0	P6SMB30CA	1.0	1.5SMC30A	1.0	1.5SMC30CA	1.0
33	P6SMB33A	1.0	P6SMB33CA	1.0	1.5SMC33A	1.0	1.5SMC33CA	1.0
36	P6SMB36A	1.0	P6SMB36CA	1.0	1.5SMC36A	1.0	1.5SMC36CA	1.0
39	P6SMB39A	1.0	P6SMB39CA	1.0	1.5SMC39A	1.0	1.5SMC39CA	1.0
43	P6SMB43A	1.0	P6SMB43CA	1.0	1.5SMC43A	1.0	1.5SMC43CA	1.0
47	P6SMB47A	1.0	P6SMB47CA	1.0	1.5SMC47A	1.0	1.5SMC47CA	1.0
51	P6SMB51A	1.0	P6SMB51CA	1.0	1.5SMC51A	1.0	1.5SMC51CA	1.0
56	P6SMB56A	1.0	P6SMB56CA	1.0	1.5SMC56A	1.0	1.5SMC56CA	1.0
62	P6SMB62A	1.0	P6SMB62CA	1.0	1.5SMC62A	1.0	1.5SMC62CA	1.0
68	P6SMB68A	1.0	P6SMB68CA	1.0	1.5SMC68A	1.0	1.5SMC68CA	1.0
75	P6SMB75A	1.0	P6SMB75CA	1.0	1.5SMC75A	1.0	1.5SMC75CA	1.0
82	P6SMB82A	1.0	P6SMB82CA	1.0	1.5SMC82A	1.0	1.5SMC82CA	1.0
91	P6SMB91A	1.0	P6SMB91CA	1.0	1.5SMC91A	1.0	1.5SMC91CA	1.0
100	P6SMB100A	1.0	P6SMB100CA	1.0	1.5SMC100A	1.0	1.5SMC100CA	1.0
110	P6SMB110A	1.0	P6SMB110CA	1.0	1.5SMC110A	1.0	1.5SMC110CA	1.0
120	P6SMB120A	1.0	P6SMB120CA	1.0	1.5SMC120A	1.0	1.5SMC120CA	1.0
130	P6SMB130A	1.0	P6SMB130CA	1.0	1.5SMC130A	1.0	1.5SMC130CA	1.0
150	P6SMB150A	1.0	P6SMB150CA	1.0	1.5SMC150A	1.0	1.5SMC150CA	1.0
160	P6SMB160A	1.0	P6SMB160CA	1.0	1.5SMC160A	1.0	1.5SMC160CA	1.0
170	P6SMB170A	1.0	P6SMB170CA	1.0	1.5SMC170A	1.0	1.5SMC170CA	1.0
180	P6SMB180A	1.0	P6SMB180CA	1.0	1.5SMC180A	1.0	1.5SMC180CA	1.0
200	P6SMB200A	1.0	P6SMB200CA	1.0	1.5SMC200A	1.0	1.5SMC200CA	1.0
220	P6SMB220A	1.0	P6SMB220CA	1.0	1.5SMC220A	1.0	1.5SMC220CA	1.0
250	P6SMB250A	1.0	P6SMB250CA	1.0				

Package dimensions shown are maximum values in mm.

ESD Transient Voltage Suppressors

12W to 400W
1.5V to 9.0V

Package dimensions shown are maximum values in mm.

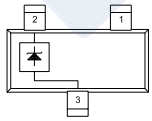
Central Part No.	Case Type	Description	*V_{ESD} MAX (kV)	Peak Pulse Power 8X20µs P_{PK} (W)	Max. Reverse Stand-Off Voltage V_{RWM} (V)	Breakdown Voltage V_{BR} @ I_T MIN (V)	Breakdown Voltage V_{BR} @ I_T MAX (V)	Max. Clamping Voltage 8X20µs V_C @ I_{PP} (V)	Max. Peak Pulse Current 8X20µs I_{PP} (A)	Typical Dynamic Resistance (Note 1) R_{DYN} (Ω)	Max. Junction Capacitance 0V DC, 1MHz C_J (pF)	Max. Off-State Capacitance 0V DC, 1MHz C_J (pF)
Standard												
CMATVS3V3	1.10 x 0.65 x 0.41 SOD-923	Single	15	80	3.3	5.0	–	11	7.0	0.5	45 (TYP)	–
CMATVS5V0		Single	15	80	5.0	6.2	–	12.3	7.0	0.5	40 (TYP)	–
CMOTVS5V7	1.80 x 0.9 x 0.8 SOD-523	Single	15	66	4.0	5.7	6.7	12	5.5	0.53	35 (TYP)	–
CTLTVS6V2	0.65 x 0.35 x 0.32 TLM2D3D6	Single	15	35	4.0	5.8	6.6	10.7	3.0	0.54	25 (TYP)	–
Low Capacitance												
CMPESD24CA	3.05 x 2.49 x 1.09 SOT-23	Dual, Bi-directional	20	210	24	25.4	30.3	70	3.0	1.3	9.0 (TYP)	–
CMPLC1V5		Single	>25	50	1.5	–	–	7.0 (@ I_{PP} = 3.0A)	5.0	0.97	–	10
CMPLC1V5D		Dual	>25	50	1.5	–	–	7.0 (@ I_{PP} = 3.0A)	5.0	0.97	–	10
CFTVS3V3B	1.05 x 0.65 x 0.55 SOD-882	Single, Bi-directional	30	40	3.3	3.5	–	6.5 8.0	1.0 5.0	0.25	10	–
CTLTVS12	0.65 x 0.35 x 0.32 TLM2D3D6	Single	30	35	9.0	10	14	18 (@ I_{PP} = 1.8A)	1.8	0.71	–	14
CTLTVS5V0B	0.65 x 0.35 x 0.32 TLM2D3D6	Single, Bi-directional	15	30	5.0	5.5	10	12 @ 1.0 15 @ 2.0	2.0	0.5	3.5	–
Ultra Low Capacitance												
CSL05	3.05 x 2.49 x 1.09 SOT-23	Single	>25	400	5.0	–	–	12 (@ I_{PP} = 5.0A)	17	0.57	1.2	–
CSL05D		Dual	>25	400	5.0	–	–	12 (@ I_{PP} = 5.0A)	17	0.57	1.2	–
CFTVS5V0BULC	1.05 x 0.65 x 0.4 SOD-882L	Single, Bi-directional	15	14	5.0	6.0	10	14	1.0	2.94	0.35	–
CFTVS5V0LC		Single	15	12	5.0	6.0	–	12	1.0	0.96	0.9	–
CMO5V0LC	1.80 x 0.9 x 0.8 SOD-523	Single	15	12	5.0	6.0	–	12	1.0	0.96	–	0.9

* IEC-61000-4-2 Standard

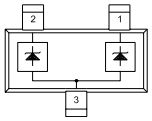
Note 1: Transmission Line Pulse (TLP) conditions: Z_0=50Ω, t_p=100ns

Low Capacitance Pinouts

Pinout for CMPLC1V5

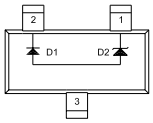


Pinout for CMPLC1V5D

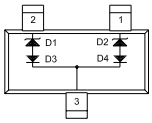


Ultra Low Capacitance Pinouts

Pinout for CSL05



Pinout for CSL05D



Central Semiconductor Corp.

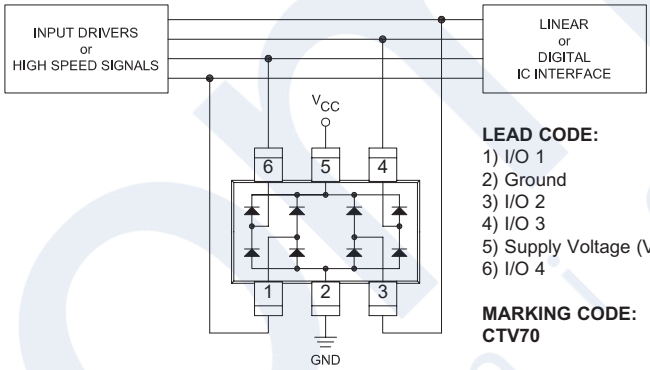
ESD Protection Quad Line Diode Array

ELECTRICAL CHARACTERISTICS PER DIODE: (T_A=25°C)

Central Part No.	Case Type	V_R	V_{ESD}* (Air)	T_J, T_{stg}	V_F @ I_F			Reverse Leakage Current I_R @ V_R		Off State Junction Capacitance I/O to GND (V_R=0, f=1.0MHz) C_J	Off State Junction Capacitance I/O to I/O (V_R=0, f=1.0MHz) C_J
		MAX (V)	MAX (kV)	MAX (°C)	TYP (V)	MAX (V)	(mA)	MAX (µA)	(V)	MAX (pF)	MAX (pF)
CMXESD70-4	 3.0 x 3.0 x 1.2 SOT-26	70	15	-55 to +150	0.61 0.74 0.88 1.07	0.715 0.855 1.0 1.25	1.0 10 50 150	1.0	70	1.0	0.9

*IEC61000-4-2

Theory of operation: In this configuration, when the transient voltage exceeds the sum of the diode forward voltage drop (V_F), plus the supply voltage (V_{CC}), the diode will direct the surge to the supply, thereby protecting the high speed data line.



LEAD CODE:
1) I/O 1
2) Ground
3) I/O 2
4) I/O 3
5) Supply Voltage (V_{CC})
6) I/O 4

MARKING CODE:
CTV70

TVS/Diode Array

ELECTRICAL CHARACTERISTICS PER DIODE: (T_A=25°C)

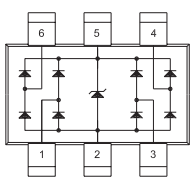
Central Part No.	Case Type	V_I	V_{ESD}* (Air)	Reverse Stand-off Voltage V_{RWM}	Reverse Breakdown Voltage pin 5 to pin 2 V_Z @ I_Z		Reverse Leakage Current pin 5 to pin 2 I_R @ V_{RWM}		Clamping Voltage 8x20µs I/O to pin 2 V_C @ I_{PP}		Dynamic Resistance (Note 1) R_{DYN}	Off State Junction Capacitance I/O to GND (V_R=0, f=1.0MHz) C_J	Off State Junction Capacitance I/O to I/O (V_R=0, f=1.0MHz) C_J
		MAX (V)	MAX (kV)	MAX (V)	MIN (V)	(mA)	MAX (µA)	(V)	MAX (V)	(A)	TYP (Ω)	MAX (pF)	MAX (pF)
CMXTVS5-4	 3.0 x 3.0 x 1.2 SOT-26	5.5	15	5.0	6.0	1.0	5.0	5.0	12	1.0	0.3	1.2	0.6
CMKTVS5-4	 2.2 x 2.3 x 1.1 SOT-363	5.5	15	5.0	6.0	1.0	3.0	5.0	14 23	1.0 5.0	0.72	3.0	1.5

ELECTRICAL CHARACTERISTICS PER DIODE: (T_A=25°C)

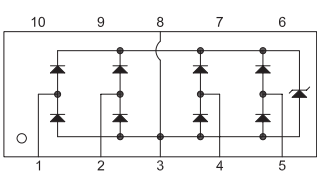
Central Part No.	Case Type	P_{PK} 8x20µs	V_{ESD}* (Air)	Reverse Stand-off Voltage V_{RWM}	Reverse Breakdown Voltage I/O to GND V_Z @ 1.0mA		Reverse Leakage Current I/O to GND I_R @ V_R		Clamping Voltage 8x20µs I/O to GND V_C @ I_{PP}		Dynamic Resistance (Note 1) R_{DYN}	Off State Junction Capacitance I/O to GND (V_R=0, f=1.0MHz) C_J	Off State Junction Capacitance I/O to I/O (V_R=0, f=1.0MHz) C_J
		MAX (W)	MAX (kV)	MAX (V)	MIN (V)	MAX (V)	MAX (µA)	MAX (V)	MAX (V)	MAX (A)	TYP (Ω)	MAX (pF)	MAX (pF)
CTLTVS5-4	 2.55 x 1.05 x 0.55 TLM1031	32.5	15	5.0	6.0	9.0	1.0	5.0	12 13	1.0 2.5	0.5	0.8	0.4

Note 1: Transmission Line Pulse (TLP) conditions: Z_0=50Ω, t_p=100ns

Pinout for CMXTVS5-4 and CMKTVS5-4 in the SOT-26 and SOT363



Pinout for CTLTVS5-4 in the TLM1031



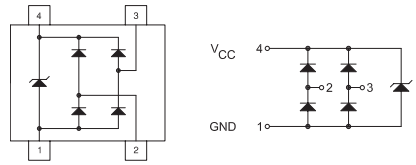
TVS/Diode Array (continued)

ELECTRICAL CHARACTERISTICS PER DIODE: (T_A=25°C)

Central Part No.	Case Type	P_{PK} 8x20µs	V_{ESD}* (Air)	Reverse Stand-off Voltage V_{RWM}	Reverse Breakdown Voltage pin 4 to pin 1 V_Z @ I_Z		Reverse Leakage Current pin 4 to pin 1 I_R @ V_{RWM}		Clamping Voltage 8x20µs I/O to pin 1 V_C @ I_{PP}		Off State Junction Capacitance I/O to GND (V_R=0, f=1.0MHz) C_J	Off State Junction Capacitance I/O to I/O (V_R=0, f=1.0MHz) C_J
		MAX (W)	MAX (kV)	MAX (V)	MIN (V)	(mA)	MAX (µA)	(V)	MAX (V)	(A)	MAX (pF)	MAX (pF)
CMYTVS5-2	 1.7 x 1.7 x 0.6 SOT-543	60	15	5.0	6.2	1.0	1.0	5.0	12	5.0	1.2	0.6

*IEC61000-4-2

Pinout and Schematic for CMYTVS5-2 in the SOT-543



TVS/Zener Array

ELECTRICAL CHARACTERISTICS PER DIODE: (T_A=25°C)

Package dimensions shown are maximum values in mm.

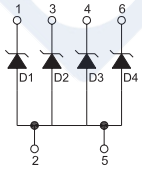
Central Part No.	Case Type	Power (8x20µs)	Breakdown Voltage V_{BR} @ 1.0mA			Maximum Leakage Current I_{RWM} @ V_{RWM}		Maximum Clamping Voltage (10x1000µs) V_C @ I_{PP}		Maximum Clamping Voltage (8x20µs) V_C @ I_{PP}		Dynamic Resistance (Note 1) R_{DYN}	Maximum Capacitance @ 0V Bias	Maximum Capacitance @ 2.8V Bias	Maximum Impedance Z_{ZT} @ 1.0mA
		P_{PK} (W)	MIN (V)	NOM (V)	MAX (V)	(µA)	(V)	(V)	(A)	(V)	(A)	TYP (Ω)	(pF)	(pF)	(Ω)
CMXTVS5V6	 3.0 x 3.0 x 1.2 SOT-26	150	5.32	5.6	5.88	2.0	3.0	8.0	3.0	12	12.5	0.29	275	160	400
CMXTVS6V2			5.89	6.2	6.51	0.7	4.3	9.0	2.66	12.5	12	0.36	260	150	300

ELECTRICAL CHARACTERISTICS PER DIODE: (T_A=25°C)

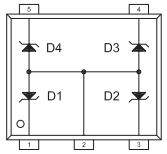
Central Part No.	Case Type	Power	Breakdown Voltage V_{BR} @ I_R				Maximum Leakage Current I_{RWM} @ V_{RWM}		Maximum Clamping Voltage V_C @ I_{PP}		Dynamic Resistance (Note 1) R_{DYN}	Capacitance @ 0V Bias	Capacitance @ 3V Bias	Capacitance @ 3.3V Bias
		P_{PK} (W)	MIN (V)	NOM (V)	MAX (V)	(mA)	(µA)	(V)	(V)	(A)	TYP (Ω)	(pF)	(pF)	(pF)
CMNTVS5V0	 1.05 x 1.05 x 0.5 SOT-953	25	6.0	7.1	8.0	1.0	0.25	5.0	12.5	2.0	1.45	10	–	5.5
CMNTVS12V		18	11.4	12.0	12.7	5.0	0.5	9.0	18	1.0	2.56	10	6.0	–

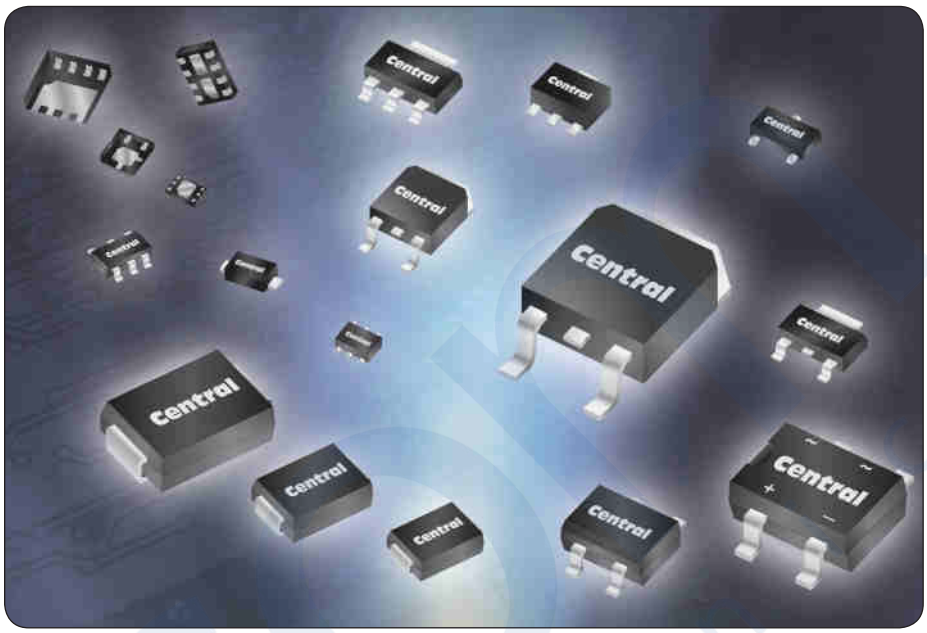
Note 1: Transmission Line Pulse (TLP) conditions: Z_0=50Ω, t_p=100ns

Pinout for CMXTVS5V6 and CMXTVS6V2 in the SOT-26



Pinout for CMNTVS5V0 and CMNTVS12V in the SOT-953



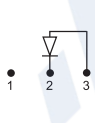
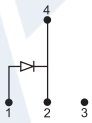
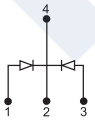
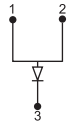


Rectifiers

Central™ Semiconductor Corp.

1.0 to 5.0A
200 to 1000V

Package dimensions shown are maximum values in mm.

I_O (AMPS)	1.0						2.0		3.0	5.0
@ T_A (°C) **T_L	75**	25	25	25	100**	75	50	**120	75	25
I_{FSM} (AMPS)	30	10	10	10	30	30	60	70	200	150
CASE	 3.95 x 1.95 x 1.08 SOD-123F	 4.7 x 4.5 x 1.7 SOT-89	 6.7 x 7.3 x 1.8 SOT-223		 5.59 x 2.92 x 2.62 SMA	 5.59 x 3.81 x 2.44 SMB		 4.9 x 2.6 x 1.1 SMAFL	 8.13 x 6.22 x 2.62 SMC	 6.65 x 4.35 x 1.2 TLM364
	SINGLE	SINGLE	SINGLE	DUAL COMMON CATHODE	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE
V_{RRM} (VOLTS)										
200	**CMMR1-02**	**–**	**–**	**–**	**CMR1-02M**	**CMR1-02**	**CMR2-02**	**–**	**CMR3-02**	**–**
400	**CMMR1-04**	**CXR1-04**	**CZR1-04**	**CZR1-04C†**	**CMR1-04M**	**CMR1-04**	**CMR2-04**	**CMR2-04MFL**	**CMR3-04**	**–**
600	**CMMR1-06**	**–**	**–**	**–**	**CMR1-06M**	**CMR1-06**	**CMR2-06**	**CMR2-06MFL**	**CMR3-06**	**CTLR5-06**
800	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**CMR2-08MFL**	**–**	**–**
1000	**CMMR1-10**	**–**	**–**	**–**	**CMR1-10M**	**CMR1-10**	**CMR2-10**	**CMR2-10MFL**	**CMR3-10**	**–**
V_F MAX @ $I_F = I_O$	1.1V	1.2V	1.2V	1.2V	1.1V	1.1V	1.1V	1.1V	1.2V	1.0V
I_R MAX @ V_{RRM}	10µA	1.0µA	1.0µA	1.0µA	5.0µA	10µA	5.0µA	1.0µA	5.0µA	5.0µA
PINOUT										

† Dual Common Cathode (Ratings Per Diode)

1.0A
200 to 1000V

Package dimensions shown are maximum values in mm.

I_O (AMPS)	1.0	
@ T_A (°C) **T_L	75**	120**
I_{FSM} (AMPS)	30	30
CASE	 3.95 x 1.95 x 1.08 SOD-123F	 5.59 x 2.92 x 2.62 SMA
	SINGLE	SINGLE
V_{RRM} (VOLTS)		
200	**CMMR1F-02**	**CMR1F-02M**
400	**CMMR1F-04**	**CMR1F-04M**
600	**CMMR1F-06**	**CMR1F-06M**
800	**CMMR1F-08**	–
1000	–	**CMR1F-10M**
V_F MAX @ $I_F = I_O$	1.3V	1.3V
I_R MAX @ V_{RRM}	10µA	5.0µA
t_{rr} (200V)	150ns	150ns
t_{rr} (400V)	150ns	150ns
t_{rr} (600V)	250ns	250ns
t_{rr} (800V)	500ns	–
t_{rr} (1000V)	–	500ns
PINOUT		

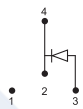
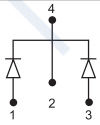
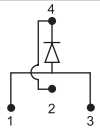
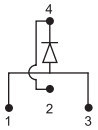
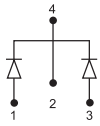
1.0 to 3.0A
100 to 1300V

Package dimensions shown are maximum values in mm.

I_O (AMPS)	1.0					2.0	3.0	
@ T_A (°C) *T_C **T_L	90**	75	75	75	120**	50	75	75
I_{FSM} (AMPS)	30	30	30	30	30	50	100	150
CASE	 3.95 x 1.95 x 1.08 SOD-123F	 5.59 x 2.92 x 2.62 SMA		 5.59 x 3.81 x 2.44 SMB	 5.5 x 3.7 x 1.1 SMBFL	 5.59 x 3.81 x 2.44 SMB		 8.13 x 6.22 x 2.62 SMC
	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE
V_{RRM} (VOLTS)								
100	–	CMR1U-01M	–	CMR1U-01	–	CMR2U-01	CMR3U-01M	CMR3U-01
200	CMMR1U-02	CMR1U-02M	–	CMR1U-02	CMR1U-02FL	CMR2U-02	CMR3U-02M	CMR3U-02
400	CMMR1U-04	CMR1U-04M	–	CMR1U-04	CMR1U-04FL	CMR2U-04	CMR3U-04M	CMR3U-04
600	CMMR1U-06	CMR1U-06M	–	CMR1U-06	CMR1U-06FL	CMR2U-06	CMR3U-06M	CMR3U-06
800	CMMR1U-08	–	–	–	–	–	–	–
1000	–	CMR1U-10M	–	CMR1U-10	–	–	CMR3U-10M	CMR3U-10
1300	–	–	CMR1U-13M	–	–	–	–	–
V_F MAX @ $I_F = I_O$								
100	–	1.0V	–	1.0V	–	1.0V	1.0V	1.0V
200	1.0V	1.0V	–	1.0V	1.0V	1.0V	1.0V	1.0V
400	1.4V	1.25V	–	1.25V	1.3V	1.25V	1.25V	1.25V
600	1.7V	1.4V	–	1.4V	1.7V	1.4V	1.4V	1.4V
800	1.7V	–	–	–	–	–	–	–
1000	–	1.7V	–	1.7V	–	–	1.7V	1.7V
1300	–	–	1.9V	–	–	–	–	–
I_R MAX @ V_{RRM}	1.0µA	5.0µA	5.0µA	5.0µA	1.0µA	10µA	5.0µA	5.0µA
t_{rr} (100V)	–	35ns	–	50ns	–	50ns	50ns	50ns
t_{rr} (200V)	50ns	35ns	–	50ns	50ns	50ns	50ns	50ns
t_{rr} (400V)	50ns	50ns	–	50ns	50ns	50ns	50ns	50ns
t_{rr} (600V)	100ns	75ns	–	100ns	100ns	50ns	100ns	100ns
t_{rr} (800V)	100ns	–	–	–	–	–	–	–
t_{rr} (1000V)	–	100ns	–	100ns	–	–	100ns	100ns
t_{rr} (1300V)	–	–	75ns	–	–	–	–	–
PINOUT								

4.0 to 16A
200 to 800V

Package dimensions shown are maximum values in mm.

I_O (AMPS)	4.0	5.0	6.0	8.0	10	16
@ T_A (°C) *T_C	130*	55	130*	100*	100*	100*
I_{FSM} (AMPS)	70	175	70	125	100	125
CASE	 10.73 x 6.81 x 2.75 DPAK	 8.13 x 6.22 x 2.62 SMC	 10.73 x 6.81 x 2.75 DPAK	 16.6 x 10.4 x 4.8 D^2PAK	 10.73 x 6.81 x 2.75 DPAK	 16.6 x 10.4 x 4.8 D^2PAK
	SINGLE	SINGLE	DUAL COMMON CATHODE	SINGLE	SINGLE	DUAL COMMON CATHODE
V_{RRM} (VOLTS)						
200	**CUD3-02**	**CMR5U-02**	**CUD6-02C**	**CUDD8-02**	**CUD10-02**	**CUDD16-02C**
400	–	**CMR5U-04**	**–**	**CUDD8-04**	**CUD10-04**	**CUDD16-04C**
600	–	**–**	**–**	**–**	**CUD10-06**	**–**
800	–	**CMR5U-08**	**–**	**CUDD8-08**	**–**	**CUDD16-08C**
V_F MAX @ $I_F = I_O$		–	–	–	–	–
200	1.25V @ 12A	1.0V	1.25† @ 10A	0.975V	0.95V	0.975V† @ 8.0A
400	–	1.3V	–	1.3V	1.3V	1.3V† @ 8.0A
600	–	–	–	–	1.7V	–
800	–	1.7V	–	1.5V	–	1.5V† @ 8.0A
I_R MAX @ V_{RRM}	20µA	10µA	20µA †	5µA	10µA	5µA†
t_{rr} (200V)	35ns	50ns	35ns†	25ns	35ns	25ns†
t_{rr} (400V)		50ns	–	25ns	35ns	25ns†
t_{rr} (600V)		–	–	–	35ns	–
t_{rr} (800V)		100ns	–	50ns	–	50ns†
PINOUT						

† Electrical Characteristic Per Diode

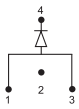
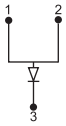
1.0 to 3.0A
100 to 600V

Package dimensions shown are maximum values in mm.

I_O (AMPS)	1.0		2.0	3.0
@ T_A (°C) **T_L	110**	25	110**	75**
I_{FSM} (AMPS)	30	30	50	100
CASE	 3.95 x 1.95 x 1.08 SOD-123F	 5.59 x 3.81 x 2.44 SMB		 8.13 x 6.22 x 2.62 SMC
	SINGLE	SINGLE	SINGLE	SINGLE
V_{RRM} (VOLTS)				
100	–	CMR1S-01	–	CMR3S-01
200	CMMR1S-02	CMR1S-02	CMR2S-02	CMR3S-02
400	–	–	CMR2S-04	CMR3S-04
600	–	–	CMR2S-06	CMR3S-06
V_F MAX @ $I_F = I_O$				
100	–	0.95V	–	0.95V
200	0.95V	0.95V	0.95V	0.95V
400	–	–	1.25V	1.25V
600	–	–	1.70V	1.70V
I_R MAX @ V_{RRM}	10µA	5.0µA	1.0µA	5.0µA
t_{rr}	35ns	35ns	30ns	35ns
PINOUT				

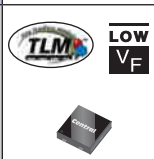
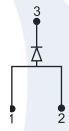
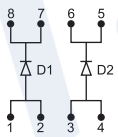
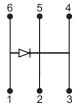
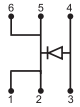
1.0 to 10A
400V, 600V

Package dimensions shown are maximum values in mm.

I_O (AMPS)	1.0	5.0	8.0	10
@ T_A (°C) *T_C **T_L	**120	**75	*100	**90
I_{FSM} (AMPS)	30	100	100	150
CASE	 4.9 x 2.6 x 1.1 SMAFL	 8.13 x 6.22 x 2.62 SMC	 10.73 x 6.81 x 2.75 DPAK	 6.65 x 4.35 x 1.2 TLM364
	SINGLE	SINGLE	SINGLE	SINGLE
V_{RRM} (VOLTS)				
400	**CMR1H-04MFL**	–	–	–
600	–	**CMR5H-06**	**CHD8-06**	**CTLHR10-06**
V_F TYP @ $I_F = I_O$	1.1V	1.55V	1.9V	1.6V
V_F MAX @ $I_F = I_O$	1.25V	1.7V	2.2V	1.7V
I_R MAX @ V_{RRM}	1.0µA	1.0µA	10µA	10µA
t_{rr} TYP	20ns	20ns	22ns	22ns
t_{rr} MAX	25ns	22ns	25ns	25ns
PINOUT				

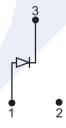
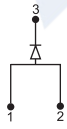
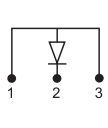
1.0A
20 to 100V

Package dimensions shown are maximum values in mm.

I_O (AMPS)	1.0							
@ T_A (°C) **T_L ††T_J	25	25	25	25	25	110**	75**	25††
I_{FSM} (AMPS)	10	10	10	6.0	10	20	30	50
CASE	 TLM322S	 TLM832DS	 TLM832DS	 TLM621H	 SOT-563	 SOD-323FL	 SOD-123F	
	SINGLE	DUAL ISOLATED	DUAL ISOLATED	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE
V_{RRM} (VOLTS)								
20	–	–	–	–	–	–	**CMMSH1-20**	–
30	–	–	–	–	–	**CMIDSH1-3**	–	–
40	**CTLSH1-40M322S**	**CTLSH1-40M832DS**	–	**CTLSH1-40M621H**	**CMLSH1-40**	**CMIDSH1-4**	**CMMSH1-40**	**CMMSH1-40L**
50	–	–	**CTLSH1-50M832DS**	–	–	–	–	–
60	–	–	–	–	–	**CMIDSH1-6**	**CMMSH1-60**	–
100	–	–	–	–	–	–	**CMMSH1-100**	–
V_F MAX @ $I_F = I_O$								
20	–	–	–	–	–	–	0.45V	–
30	–	–	–	–	–	0.52V	0.45V	–
40	0.55V	0.55V	–	0.60V	0.55V	0.58V	0.55V	0.45V
50			0.55V			–	–	–
60	–	–	–	–	–	0.68V	0.70V	–
100	–	–	–	–	–	–	0.85V	–
I_R MAX @ V_{RRM}	50µA @ 15V	50µA @ 15V	500µA	50µA @ 15V	50µA @ 15V	100µA	500µA	500µA
PINOUT								

1.0A
20 to 200V

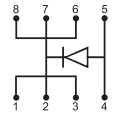
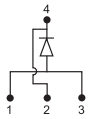
Package dimensions shown are maximum values in mm.

I_O (AMPS)	1.0							
@ T_A (°C) **T_L ††T_J	25	25	25	75**	25	75	25	25
I_{FSM} (AMPS)	12	20	20	30	30	30	10	30
CASE	3.00 x 2.50 x 1.0 SOT-23F			LOW V_F 5.59 x 2.92 x 2.62 SMA	LOW V_F	5.59 x 3.81 x 2.44 SMB	4.7 x 4.5 x 1.7 SOT-89	5.59 x 2.92 x 2.62 SMA
	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	
V_{RRM} (VOLTS)								
20	–	–	–	CMSH1-20M	CMSH1-20ML	CMSH1-20	–	–
30	–	–	–	–	–	–	–	–
40	CMPSH1-4	CMPSH1-4L	CMPSH1-4LE	CMSH1-40M	CMSH1-40ML	CMSH1-40	CXSH-4	CMSH1-40HE
60	–	–	–	CMSH1-60M†	–	CMSH1-60	–	CMSH1-60HE
80	–	–	–	–	–	–	–	CMSH1-80HE
100	–	–	–	CMSH1-100M†	–	CMSH1-100	–	CMSH1-100HE
150	–	–	–	–	–	–	–	CMSH1-150HE
200	–	–	–	–	–	–	–	CMSH1-200HE
V_F MAX @ I_F =I_O								
20	–	–	–	0.50V	0.38V	0.55V	–	
30	–	–	–	–	–	–	–	
40	0.55V	0.39V	0.4V	0.50V	0.40V	0.55V	0.55V	0.70V
60	–	–	–	0.70V	–	0.70V	–	0.74V
80	–	–	–	–	–	–	–	0.80V
100	–	–	–	0.85V	–	0.85V	–	0.80V
150	–	–	–	–	–	–	–	0.90V
200	–	–	–	–	–	–	–	0.90V
I_R MAX @ V_{RRM}	100µA @ 30V	1.5mA @ 30V	900µA @ 40V	500µA	500µA	500µA	1.0mA	50µA
PINOUT								

† T_L = 100°C for 60V & 100V

2.0A
20 to 100V

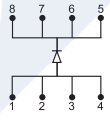
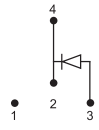
Package dimensions shown are maximum values in mm.

I_O (AMPS)	2.0						
@ T_A (°C) **T_L ††T_J	25	25††	75**	55	105**	25	125**
I_{FSM} (AMPS)	15	50	50	50	50	10	50
CASE	 3.1 x 2.1 x 1.0 TLM832	 3.95 x 1.95 x 1.08 SOD-123F	 5.59 x 2.92 x 2.62 SMA	 5.59 x 3.81 x 2.44 SMB		 6.7 x 7.3 x 1.8 SOT-223	 4.9 x 2.6 x 1.1 SMAFL
	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE
V_{RRM} (VOLTS)							
20	–	–	CMSH2-20M	CMSH2-20	CMSH2-20L	–	–
40	CTLSH2-40M832	CMMSH2-40	CMSH2-40M	CMSH2-40	CMSH2-40L	CZSH-4	CMSH2-40FL
60	–	–	CMSH2-60M	CMSH2-60		–	–
100	–	–	CMSH2-100M	CMSH2-100		–	–
V_F MAX @ $I_F = I_O$							
20	–	–	0.55V	0.50V	0.40V	–	–
40	0.50V	0.50V	0.55V	0.50V	0.40V	0.60V	0.50V
60	–	–	0.70V	0.70V		–	–
100	–	–	0.85V	0.85V		–	–
I_R MAX @ V_{RRM}	200µA	500µA	500µA	500µA	500µA	1.0mA	100µA
PINOUT							

† T_L = 100°C for 60V & 100V

3.0A
20 to 200V

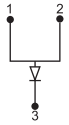
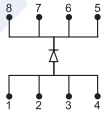
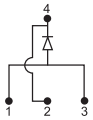
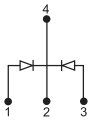
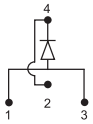
Package dimensions shown are maximum values in mm.

I_O (AMPS)	3.0								
@ T_A (°C) *T_C **T_L	25	25	75**	75**	75	120*	125**	125**	110**
I_{FSM} (AMPS)	25	25	80	80	150	75 50†	80	80	80
CASE	 3.1 x 3.1 x 1.0 TLM833	 3.15 x 3.15 x 1.0 TLM833S	 5.59 x 2.92 x 2.62 SMA	 5.59 x 3.81 x 2.44 SMB	 8.13 x 6.22 x 2.62 SMC	 10.73 x 6.81 x 2.75 DPAK	 5.5 x 3.7 x 1.1 SMBFL	 5.59 x 3.81 x 2.44 SMB	 4.9 x 2.6 x 1.1 SMAFL
	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE
V_{RRM} (VOLTS)									
20	–	–	CMSH3-20MA	CMSH3-20M	CMSH3-20	–	–	–	–
30	CTLSH3-30M833	CTLSH3-30M833S	–	–	–	–	–	–	–
40	–	–	CMSH3-40MA	CMSH3-40M	CMSH3-40	CSHD3-40	CMSH3-40FL	–	–
60	–	–	CMSH3-60MA	CMSH3-60M	CMSH3-60	CSHD3-60	–	–	–
100	–	–	CMSH3-100MA	CMSH3-100M	CMSH3-100	CSHD3-100	–	CMSH3-100MHV	CMSH3-100MFL
150	–	–	–	–	–	–	–	CMSH3-150MHV	CMSH3-150MFL
200	–	–	–	–	–	–	–	CMSH3-200MHV	CMSH3-200MFL
V_F MAX @ $I_F = I_O$									–
20	–	–	0.50V	0.55V	0.50V	–	–	–	–
30	0.45V	0.45V	–	–	–	–	–	–	–
40	–	–	0.50V	0.55V	0.50V	0.65V	0.50V	–	–
60	–	–	0.70V	0.75V	0.70V	0.75V	–	–	–
100	–	–	0.85V	0.85V	0.80V	0.85V	–	0.8V	0.8V
150	–	–	–	–	–	–	–	0.9V	0.9V
200	–	–	–	–	–	–	–	0.9V	0.9V
I_R MAX @ V_{RRM}	1.0mA	1.0mA	500µA	500µA	500µA	30µA†	100µA	50µA	50µA
PINOUT									

† 60V & 100V Devices

4.0A to 5.0A
20 to 200V

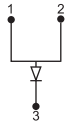
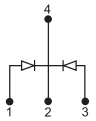
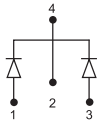
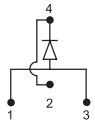
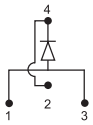
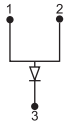
Package dimensions shown are maximum values in mm.

I_O (AMPS)	4.0		5.0						
@ T_A (°C) *T_C **T_L	90**	125**	25	125**	75	75	75	75**	120*
I_{FSM} (AMPS)	150	100	50	100	125	125	75	100	80
CASE	LOW V_F  8.13 x 6.22 x 2.62 SMC	TLM  6.65 x 4.35 x 1.2 TLM364	TLM  3.15 x 3.15 x 1.0 TLM833S	HIGH DENSITY SCHOTTKY LOW V_F  5.5 x 3.7 x 1.1 SMBFL	 8.13 x 6.22 x 2.62 SMC	 6.7 x 7.3 x 1.8 SOT-223		LOW V_F  10.73 x 6.81 x 2.75 DPAK	
	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	DUAL COMMON CATHODE	SINGLE	SINGLE
V_{RRM} (VOLTS)									
20	**CMSH3-20L**	–	–	–	**CMSH5-20**	–	–	–	–
25	–	–	–	–	–	–	–	–	**CSHD5-25L**
40	**CMSH3-40L**	–	**CTLSH5-40M833S**	**CMSH5-40FL**	**CMSH5-40**	**CZSH5-40**	**CZSH5-40C**	**CSHD5-40**	–
60	–	–	–	–	**CMSH5-60**	–	–	**CSHD5-60**	–
100	–	–	–	–	**CMSH5-100**	–	–	**CSHD5-100**	–
150	–	–	–	–	–	–	–	–	–
200	–	**CTLSH4-200M364**	–	–	–	–	–	–	–
V_F MAX @ $I_F = I_O$									
20	0.42V	–	–	–	0.55V	–	–	–	–
25	–	–	–	–	–	–	–	–	0.47V
40	0.44V	–	0.52V	0.46V	0.55V	0.55V	0.55V	0.55V	–
60	–	–	–	–	0.75V	–	–	0.75V	–
100	–	–	–	–	0.85V	–	–	0.85V	–
150	–	–	–	–	–	–	–	–	–
200	–	0.84V	–	–	–	–	–	–	–
I_R MAX @ V_{RRM}	500µA	1.0µA	200µA	100µA	3.0mA	3.0mA	3.0mA	200µA	500µA
PINOUT									

† 60V & 100V Devices

5.0A to 8.0A
20 to 200V

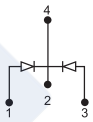
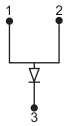
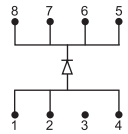
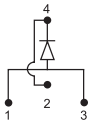
Package dimensions shown are maximum values in mm.

I_O (AMPS)	5.0		6.0		8.0			
@ T_A (°C) *T_C **T_L	75**	125**	75	120*	115**	75**	100*	125**
I_{FSM} (AMPS)	100	150	75	75 50†	150	85	150	280
CASE	 8.13 x 6.22 x 2.62 SMC	 6.65 x 4.35 x 1.2 TLM364	 6.7 x 7.3 x 1.8 SOT-223	 10.73 x 6.81 x 2.75 DPAK	 8.13 x 6.22 x 2.62 SMC	 10.73 x 6.81 x 2.75 DPAK	 16.6 x 10.4 x 4.8 D^2PAK	 6.65 x 4.35 x 1.2 TLM364
	SINGLE	SINGLE	DUAL COMMON CATHODE	DUAL COMMON CATHODE		SINGLE	SINGLE	SINGLE
V_{RRM} (VOLTS)								
20	–	–	–	–	–	–	–	–
25	–	–	–	–	–	–	–	–
40	–	–	–	**CSHD6-40C**	**CMSH8-40**	–	**CSHDD8-40**	–
60	–	–	–	**CSHD6-60C**	–	**CSHD8-60**	**CSHDD8-60**	**CTLSH8-60M364**
100	**CMSH5-100HV**	**CTLSH5-100M364**	**CZSH6-100C**	**CSHD6-100C**	–	**CSHD8-100**	**CSHDD8-100**	–
150	**CMSH5-150HV**	–	–	–	–	–	–	–
200	**CMSH5-200HV**	–	–	–	–	**CSHD8-200**	–	–
V_F MAX @ $I_F = I_O$								
20	–	–	–	–	–	–	–	–
25	–	–	–	–	–	–	–	–
40	–	–	–	0.85V Per Leg	**0.55V**	–	0.65V	–
60	–	–	–	0.9V Per Leg	–	0.75V	0.75V	**0.54V**
100	0.80V	0.80V	1.0V Per Leg	1.1V Per Leg	–	0.8V	0.85V	–
150	0.90V	–	–	–	–	–	–	–
200	0.90V	–	–	–	–	0.9V	–	–
I_R MAX @ V_{RRM}	50µA	15µA	10µA	30µA†	500µA	50µA	100µA	0.6mA
PINOUT								

† 60V & 100V Devices

10A
40 to 100V

Package dimensions shown are maximum values in mm.

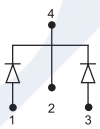
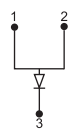
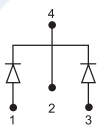
I_O (AMPS)	10					
@ T_A (°C) *T_C **T_L	100*	75	110** †90**	100**	25	120*
I_{FSM} (AMPS)	100	125	275 †300	300	250	200
CASE	 10.73 x 6.81 x 2.75 DPAK	 6.7 x 7.3 x 1.8 SOT-223C	LOW V_F   6.65 x 4.35 x 1.2 TLM364		  6.1 x 5.1 x 1.025 TLM856	 10.73 x 6.81 x 2.75 DPAK
	DUAL COMMON CATHODE	DUAL COMMON CATHODE	SINGLE	SINGLE	SINGLE	SINGLE
V_{RRM} (VOLTS)						
40	–	**CZSH10-40CN**	–	–	–	–
45	–	–	**CTLSH10-45L**	**CTLSH10-45M364**	–	**CSHD10-45L**
60	–	–	–	–	**CTLSH10-60M856**	–
100	**CSHD10-100C**	–	**CTLSH10-100L**	–	–	–
V_F MAX @ I_F = I_O						
40	–	0.60V Per Leg	–	–	–	–
45	–	–	0.47V	0.55V	–	0.75V
60	–	–	–	–	0.67V	–
100	0.9V (TYP)	–	0.68V	–	–	–
I_R MAX @ V_{RRM}	50µA	3.0mA	250µA	50µA	500µA	100µA
100	50µA	–	150µA	–	–	–
PINOUT						

†100V Devices

Schottky Rectifiers (continued)

12 to 16A
40 to 200V

Package dimensions shown are maximum values in mm.

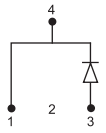
I_O (AMPS)	12	15	16
@ T_A (°C) *T_C **T_L	75*	**120	75*
I_{FSM} (AMPS)	100	275	150
CASE	 10.73 x 6.81 x 2.75 DPAK	 6.65 x 4.35 x 1.2 TLM364	 16.6 x 10.4 x 4.8 D^2PAK
	DUAL COMMON CATHODE	SINGLE	DUAL COMMON CATHODE
V_{RRM} (VOLTS)			
30	–	CTLSH15-30M364	–
40	–	–	CSHDD16-40C
60	CSHD12-60C	CTLSH15-60M364	CSHDD16-60C
100	–	–	CSHDD16-100C
200	–	–	CSHDD16-200C
V_F MAX @ $I_F = I_O$			
30	–	0.56V	–
40	–	–	0.84V Per Leg
60	0.75V @ 6.0A	0.59V	0.95V Per Leg
100	–	–	1.1V Per Leg
200	–	–	1.2V Per Leg
I_R MAX @ V_{RRM}	50µA	100µA	50µA
60	–	200µA	–
100	–	–	50µA
PINOUT			

†100V Devices

Silicon Carbide (SiC) Schottky Rectifiers

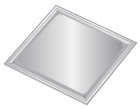
10A
650V

Package dimensions shown are maximum values in mm.

I_F (AMPS)	10
@ T_A (°C) *T_C **T_L	135*
I_{FSM} (AMPS)	60
CASE	 10.73 x 6.81 x 2.75 DPAK
	SINGLE
V_{RRM} (VOLTS)	
650	CSICD10-650
V_F MAX @ $I_F = I_O$	1.7V @ 25˚C 2.5V @ 175˚C
I_R MAX @ V_{RRM}	125µA
PINOUT	

Also Available CSIC10-1200, 1200V, 10A device in TO-220-2 package
(see page 64)

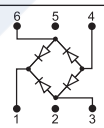
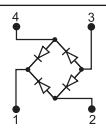
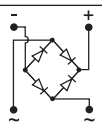
TO-220-2



Also available in bare die form.
Process CPC01

Single Phase, Full Wave
0.14 to 1.0A
40 to 1000V

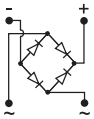
Package dimensions shown are maximum values in mm.

I_O (AMPS)	0.14		0.5	1.0				
@ T_A (°C)	25	25	40	25	25	50	40	40
I_{FSM} (AMPS)	–	–	30	20	20	50	50	50
CASE	 2.2 x 2.3 x 1.1 SOT-363	 3.04 x 2.50 x 1.14 SOT-143	HDBRIDGE  4.9 x 7.0 x 2.7 HD DIP			 8.51 x 10.41 x 2.49 SMDIP		
	GENERAL PURPOSE	GENERAL PURPOSE	GENERAL PURPOSE	SCHOTTKY	LOW V_F SCHOTTKY	GENERAL PURPOSE	FAST RECOVERY	ULTRA FAST RECOVERY
V_{RRM} (VOLTS)								
40	–	–	–	–	**CBRHDSH1-40L**	–	–	–
60	**CMKBR-6F**	**CMFBR-6F**	–	–	**CBRHDSH1-60**	–	–	–
100	–	–	**CBRHD-01**	**CBRHDSH1-100**	**CBRHDSH1-100**	–	–	**CBR1U-D010S**
200	–	–	**CBRHD-02**	–	**CBRHDSH1-200**	**CBR1-D020S**	**CBR1F-D020S**	**CBR1U-D020S**
400	–	–	**CBRHD-04**	–	–	**CBR1-D040S**	**CBR1F-D040S**	–
600	–	–	**CBRHD-06**	–	–	**CBR1-D060S**	**CBR1F-D060S**	–
1000	–	–	**CBRHD-10***	–	–	**CBR1-D100S**	**CBR1F-D100S***	–
V_F MAX @ I_F (40V)	–	–	–	–	0.44V	–	–	–
V_F MAX @ I_F (60V)	1.0V @ 20mA	1.0V @ 20mA	–	–	0.6V	–	–	–
V_F MAX @ I_F (100V)	–	–	1.0V @ 0.4A	0.75V @ 1.0A	0.75V	–	–	1.05V @ 1.0A
V_F MAX @ I_F (200V-1000V)	–	–	1.0V @ 0.4A	–	0.9V	1.1V @ 1.0A	1.3V @ 1.0A	1.05V @ 1.0A
I_R MAX @ V_{RRM} (40V)	–	–	–	–	50µA	–	–	–
I_R MAX @ V_{RRM} (60V)	10nA @ 50V	10nA @ 50V	–	–	20µA	–	–	–
I_R MAX @ V_{RRM} (100V)	–	–	5.0µA	10µA	10µA	–	–	5µA
I_R MAX @ V_{RRM} (200V - 1000V)	–	–	5.0µA	–	50µA	10µA	5.0µA	5µA
t_{rr} (60V)	1.0µs typ.	1.0µs typ.	–	–	–	–	–	–
t_{rr} (100 - 400V)	–	–	–	–	–	–	200ns	50ns
t_{rr} (600V)	–	–	–	–	–	–	300ns	–
t_{rr} (1000V)	–	–	–	–	–	–	500ns	–
PINOUT								

* Available on special order; please consult factory.

Single Phase, Full Wave
1.0 to 2.0A
40 to 1000V

Package dimensions shown are maximum values in mm.

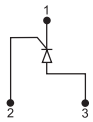
I_O (AMPS)	1.0		2.0				
@ T_A (°C)	25	25	50**	25	25	25	25
I_{FSM} (AMPS)	30	30	50	30	50	50	110
CASE	 6.7 x 5.15 x 1.45 LPDIP			HD BRIDGE  4.9 x 7.0 x 2.7 HD DIP		 8.51 x 10.41 x 2.49 SMDIP	
	SCHOTTKY	GENERAL PURPOSE	SCHOTTKY	SCHOTTKY	SCHOTTKY	GENERAL PURPOSE	SCHOTTKY
V_{RRM} (VOLTS)							
40	**CBRLDSH1-40**	–	**CBRLDSH2-40**	**CBRHDSH2-40**	–	–	**CBRSDSH2-40**
60	–	–	**CBRLDSH2-60**	–	–	–	**CBRSDSH2-60**
100	–	–	**CBRLDSH2-100**	–	**CBRHDSH2-100**	–	**CBRSDSH2-100**
200	–	**CBRLD1-02**	–	–	–	**CBR2-D020S**	–
400	–	**CBRLD1-04**	–	–	–	**CBR2-D040S**	–
600	–	**CBRLD1-06**	–	–	–	**CBR2-D060S**	–
800	–	**CBRLD1-08**	–	–	–	**CBR2-D080S**	–
1000	–	**CBRLD1-10**	–	–	–	**CBR2-D100S**	–
V_F MAX @ I_F (40V)	500mV @ 1.0A	–	500mV @ 2.0A	0.5V @ 2.0A	–	–	450mV @ 2.0A
V_F MAX @ I_F (60V)	–	–	700mV @ 2.0A	–	–	–	600mV @ 2.0A
V_F MAX @ I_F (100V)	–	–	840mV @ 2.0A	–	0.84V @ 2.0A	–	700mV @ 2.0A
V_F MAX @ I_F (200V - 1000V)	–	1.0V @ 1.0A	–	–	–	1.1V @ 2.0A	–
I_R MAX @ V_{RRM} (40V)	100µA	–	100µA	50µA	–	–	70µA
I_R MAX @ V_{RRM} (60V)	–	–	500µA	–	–	–	70µA
I_R MAX @ V_{RRM} (100V)	–	–	4.0µA	–	4.0µA	–	50µA
I_R MAX @ V_{RRM} (200V - 1000V)	–	10µA	–	–	–	5.0µA	–
PINOUT							

* Available on special order; please consult factory.

Thyristors

0.2 to 4.0A
100 to 800V

Package dimensions shown are maximum values in mm.

I_T (AMPS)	0.2	0.8			2.0	4.0	
@ T_C / *T_A (°C)	25	60	25	25	60	85	25
I_{TSM} (AMPS)	7.5	10	10	10	10	30	15
CASE	 3.05 x 2.49 x 1.09 SOT-23	 4.7 x 4.5 x 1.7 SOT-89	 6.7 x 7.3 x 1.8 SOT-223				 10.73 x 6.81 x 2.75 DPAK
V_{RRM} (VOLTS)							
100	–	–	–	–	–	–	**MCR703A**
200	–	–	–	–	–	–	**MCR704A**
300	–	–	–	–	–	–	–
400	**CMPS5064**	–	**CZS5064**	–	–	–	**MCR706A**
600	–	**CS89M**	–	**CS223M**	**CS223-2M**	**CS223-4M**	**MCR708A**
800	–	**CS89N***	–	–	**CS223-2N***	**CS223-4N***	–
I_{GT}	200µA	200µA	200µA	200µA	200µA	200µA	75µA
V_{GT}	0.8V	0.8V	0.8V	0.8V	0.8V	0.8V	0.8V
I_H	5.0mA	5.0mA	5.0mA	5.0mA	2.0mA	2.0mA	2.0mA
PINOUT							

* Available on request. Please consult factory.

4.0 to 25A
400 to 800V

Package dimensions shown are maximum values in mm.

I_T (AMPS)	4.0		8.0		12	16	25
@ T_C (°C)	25	85	90	90	90	90	90
I_{TSM} (AMPS)	15	30	80	80	120	160	250
CASE	 10.73 x 6.81 x 2.75 DPAK			 16.6 x 10.4 x 4.8 D^2PAK			
V_{RRM} (VOLTS)							
400	MCR716	–	–	–	–	–	–
600	MCR718	CSD-4M	CSD-8M	CSDD-8M	CSDD-12M	CSDD-16M	CSDD-25M
800	–	CSD-4N*	CSD-8N*	CSDD-8N*	CSDD-12N*	CSDD-16N*	CSDD-25N*
I_{GT}	75µA	200µA	15mA	15mA	15mA	15mA	30mA
V_{GT}	0.8V	0.8V	1.5V	1.5V	1.5V	1.5V	1.5V
I_H	2.0mA	2.0mA	20mA	20mA	20mA	20mA	50mA
PINOUT							

* Available on request. Please consult factory.

2.0 to 4.0A
400 to 800V

Package dimensions shown are maximum values in mm.

I_T (AMPS)	2.0		4.0
@ T_C (°C)	50	80	80
I_{TSM} (AMPS)	20	10	40
CASE	 4.7 x 4.5 x 1.7 SOT-89	 6.7 x 7.3 x 1.8 SOT-223	
V_{RRM} (VOLTS)			
400	–	–	–
600	**CQ89-2M**	**CQ223-2M**	**CQ223-4M**
800	**CQ89-2N***	**CQ223-2N***	**CQ223-4N***

I_{GT} QI	5.0mA	5.0mA	5.0mA
I_{GT} QII	5.0mA	5.0mA	5.0mA
I_{GT} QIII	5.0mA	5.0mA	5.0mA
I_{GT} QIV	8.0mA	8.0mA	9.0mA
V_{GT} QI-QIII	1.8V	1.8V	1.75V
V_{GT} QIV	1.8V	1.8V	1.75V
I_H	5.0mA	5.0mA	5.0mA

PINOUT		

* Available on request. Please consult factory.

4.0 to 25A
600 to 800V

Package dimensions shown are maximum values in mm.

I_T (AMPS)	4.0	8.0		12		16	25
@ T_C (°C) *T_J	80	25**	90	90	25	90	90
I_{TSM} (AMPS)	40	70	90	125	100	170	210
CASE	 10.73 x 6.81 x 2.75 DPAK			 16.6 x 10.4 x 4.8 D^2PAK			
V_{RRM} (VOLTS)		THREE QUADRANT			THREE QUADRANT		
600	CQD-4M	CQD-8M3	CQDD-8M	CQDD-12M	CQDD-12M3	CQDD-16M	CQDD-25M
800	CQD-4N*	–	CQDD-8N*	CQDD-12N*	–	CQDD-16N*	CQDD-25N*

I_{GT} QI	5.0mA	50mA	20mA	20mA	50mA	25mA	30mA
I_{GT} QII	5.0mA	50mA	20mA	20mA	50mA	25mA	30mA
I_{GT} QIII	5.0mA	50mA	20mA	20mA	50mA	25mA	30mA
I_{GT} QIV	9.0mA	–	50mA	50mA	–	75mA	60mA
V_{GT} QI-QIII	1.75V	1.3V	1.5V	1.5V	1.3V	1.5V	1.5V
V_{GT} QIV	1.75V	–	2.5V	2.5V	–	2.5V	2.5V
I_H	5.0mA	50mA	25mA	25mA	50mA	25mA	50mA

PINOUT	 1 2,4 3	 1 2,4 3

* Available on request. Please consult factory.

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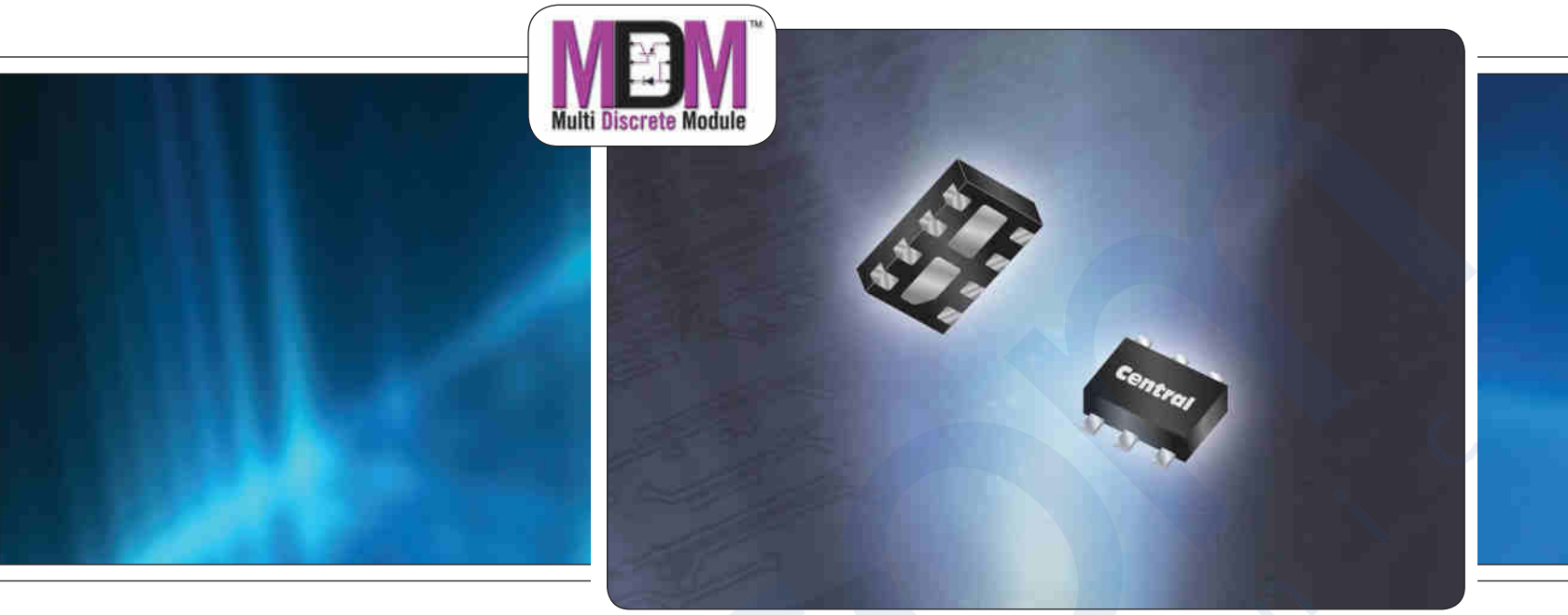


Multi Discrete Modules (MDMs)

Integrating different device types into a single package often facilitates assembly cost reductions. MOSFETs and diodes, MOSFETs and rectifiers, transistors and rectifiers, and other custom combinations are available.

MDM™ Multi Discrete Module

SOT-563 Case

1.7 x 1.7 x 0.6

3.1 x 2.1 x 1.0

TLM832D Case

Package dimensions shown are maximum values in mm.

N-Channel MOSFET and Low V_F Schottky Diode

			N-Channel MOSFET									Low V_F Schottky Diode				
TYPE NO.	CASE	DESCRIPTION	BV_{DSS} (V) MIN	I_D (mA) MAX	$r_{DS(ON)}$ (Ω) MAX	@ I_D (A)	@ V_{GS} (V)	$V_{GS(th)}$ (V) MIN	$V_{GS(th)}$ (V) MAX	t_{on}, t_{off} (ns) MAX		V_{RRM} (V) MAX	I_F (mA) MAX	V_F (V) MAX	@ I_F (mA)	C_T (pF) MAX
CMLM0205	SOT-563	**Combination:** N-Channel MOSFET and Low V_F Schottky diode	60	280	2.0 3.0	0.5 0.05	10 5.0	1.0	2.5	20	+	40	500	0.27 0.35 0.47	10 100 500	50
CMLM0574	SOT-563	**Combination:** N-Channel MOSFET and Low V_F Schottky diode	30	450	0.46 0.56 0.73	0.2 0.1 0.075	4.5 2.5 1.8	0.5	1.0	– / –	+	40	500	0.27 0.35 0.47	10 100 500	50
CMLM0575	SOT-563	**Combination:** N-Channel MOSFET and Low V_F Schottky diode	20	650	0.23 0.275 0.7	0.6 0.5 0.35	4.5 2.5 1.8	0.5	1.1	10, 25 (TYP)	+	40	500	0.27 0.35 0.47	10 100 500	50
CTLM7110-M832D	TLM832D	**Combination:** N-Channel MOSFET and Low V_F Schottky diode	20	1000	0.10 0.14 0.25	0.5 0.5 0.1	4.5 2.5 1.5	0.5	1.2	25, 140 (TYP)	+	40	1000	0.29 0.36 0.45 0.55	10 100 500 1000	–

P-Channel MOSFET and Low V_F Schottky Diode

			P-Channel MOSFET									Low V_F Schottky Diode				
TYPE NO.	CASE	DESCRIPTION	BV_{DSS} (V) MIN	I_D (mA) MAX	$r_{DS(ON)}$ (Ω) MAX	@ I_D (A)	@ V_{GS} (V)	$V_{GS(th)}$ (V) MIN	$V_{GS(th)}$ (V) MAX	t_{on}, t_{off} (ns) MAX		V_{RRM} (V) MAX	I_F (mA) MAX	V_F (V) MAX	@ I_F (mA)	C_T (pF) MAX
CMLM0584	SOT-563	**Combination:** P-Channel MOSFET and Low V_F Schottky diode	30	450	1.1 2.0 3.3	0.43 0.2 0.1	4.5 2.5 1.8	0.5	1.0	– / –	+	40	500	0.27 0.35 0.47	10 100 500	50
CMLM0585	SOT-563	**Combination:** P-Channel MOSFET and Low V_F Schottky diode	20	650	0.36 0.5 0.8	0.35 0.3 0.15	4.5 2.5 1.8	0.5	1.0	38, 48 (TYP)	+	40	500	0.27 0.35 0.47	10 100 500	50
CMLM0305	SOT-563	**Combination:** P-Channel MOSFET and Low V_F Schottky diode	50	280	2.0 2.5 3.0	0.05 0.05 0.05	5.0 2.5 1.8	0.75	1.2	–	+	40	500	0.27 0.35 0.47	10 100 500	50
CMLM0305T	SOT-563	**Combination:** P-Channel MOSFET and Low V_F Schottky diode	50	280	1.5 1.9 2.3	0.05 0.05 0.05	5.0 2.5 1.8	0.75	1.2	–	+	40	500	0.27 0.35 0.47	10 100 500	50
CMLM8205	SOT-563	**Combination:** P-Channel MOSFET and Low V_F Schottky diode	50	280	2.5 3.0	0.5 0.05	10 5.0	1.0	2.5	20	+	40	500	0.27 0.35 0.47	10 100 500	50
CTLM8110-M832D	TLM832D	**Combination:** P-Channel MOSFET and Low V_F Schottky diode	20	860	0.150 0.142 0.200 0.240	0.95 0.77 0.67 0.2	4.5 4.5 2.5 1.8	0.45	1.0	20, 25 (TYP)	+	40	1000	0.45	500	–

SOT-563 Case

1.7 x 1.7 x 0.6

TLM832D Case

3.1 x 2.1 x 1.0

Package dimensions shown are maximum values in mm.

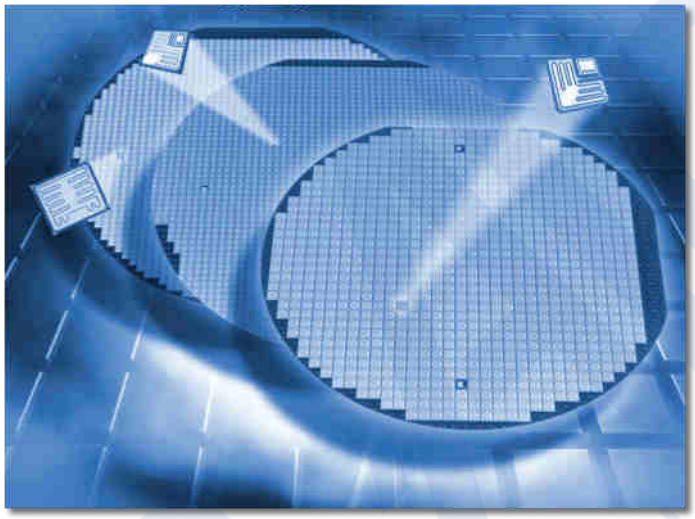
Low $V_{CE(SAT)}$ Small Signal Transistor and Low V_F Schottky Diode

			Low $V_{CE(SAT)}$ Small Signal Transistor							Low V_F Schottky Diode				
TYPE NO.	CASE	DESCRIPTION	BV_{CBO} (V) MIN	BV_{CEO} (V) MIN	BV_{EBO} (V) MIN	$V_{CE(SAT)}$ (V) TYP	$V_{CE(SAT)}$ (V) MAX	@ I_C (mA)		V_{RRM} (V) MAX	I_F (mA) MAX	V_F (V) MAX	@ I_F (mA)	C_T (pF) MAX
CMLM0405	SOT-563	**Combination:** Low $V_{CE(SAT)}$ General Purpose NPN transistor and Low V_F Schottky diode	60	40	6.0	0.057 0.090	0.1 0.2	10 50	+	40	500	0.27 0.35 0.47	10 100 500	50
CMLM0605	SOT-563	**Combination:** Low $V_{CE(SAT)}$ General Purpose PNP transistor and Low V_F Schottky diode	60	40	6.0	0.05 0.10	0.1 0.2	10 50	+	40	500	0.27 0.35 0.47	10 100 500	50
CMLM0705	SOT-563	**Combination:** Low $V_{CE(SAT)}$ General Purpose PNP transistor and Low V_F Schottky diode	60	60	5.0	0.113 0.280	0.2 0.7	150 500	+	40	500	0.27 0.35 0.47	10 100 500	50
CMLM2205	SOT-563	**Combination:** Low $V_{CE(SAT)}$ General Purpose NPN transistor and Low V_F Schottky diode	100	45	6.0	0.09 0.12	0.15 0.50	150 500	+	40	500	0.27 0.35 0.47	10 100 500	50
CMLM3405	SOT-563	**Combination:** Low $V_{CE(SAT)}$ General Purpose NPN transistor and Low V_F Schottky diode	40	25	6.0	0.250	0.45	1000	+	40	500	0.27 0.35 0.47	10 100 500	50
CMLM7405	SOT-563	**Combination:** Low $V_{CE(SAT)}$ General Purpose PNP transistor and Low V_F Schottky diode	40	25	6.0	0.275	0.45	1000	+	40	500	0.27 0.35 0.47	10 100 500	50
CTLM1034-M832D	TLM832D	**Combination:** Low $V_{CE(SAT)}$ General Purpose NPN transistor and Low V_F Schottky diode	40	25	6.0	0.250	0.45	1000	+	40	1000	0.29 0.36 0.45 0.55	10 100 500 1000	–
CTLM1074-M832D	TLM832D	**Combination:** Low $V_{CE(SAT)}$ General Purpose PNP transistor and Low V_F Schottky diode	40	25	6.0	0.275	0.45	1000	+	40	1000	0.29 0.36 0.45 0.55	10 100 500 1000	–

Services

Up-screening for bare die

Central offers a broad range of up-screening options for Bare die.



Up-screening options available:

- MIL-PRF-38534 equivalent screening for Class K and Class H
- MIL-PRF-19500 equivalent screening for Class KC and Class HC
- Customer-specific screening

Bare die applications:

- Solar
- Smart Wearables
- Medical
- Industrial
- Mil/Aero

Bare die Application Support

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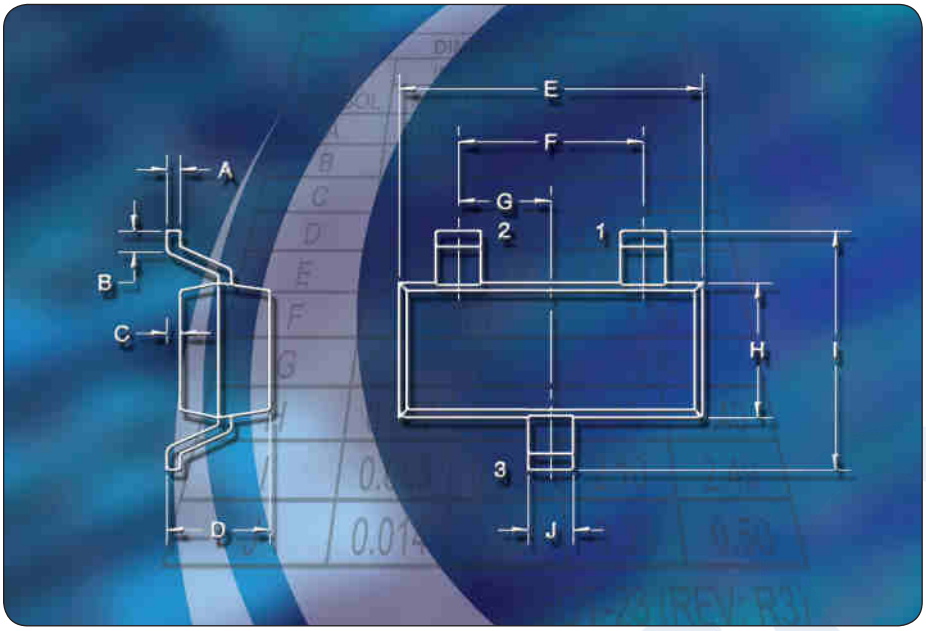
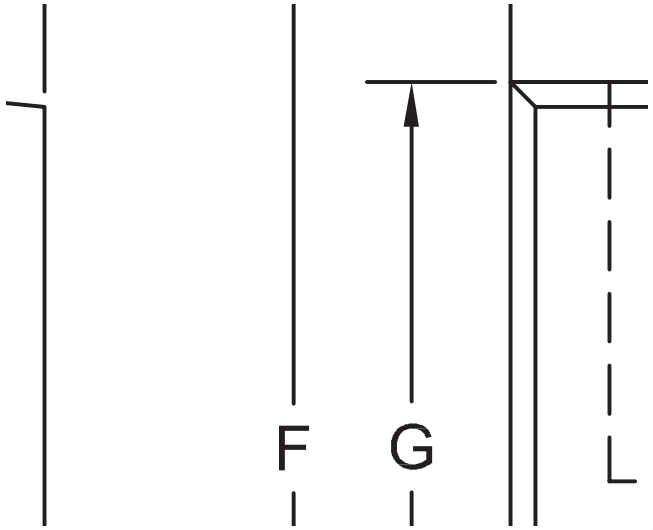


Package Mechanical Specifications

Package Mechanical Specifications

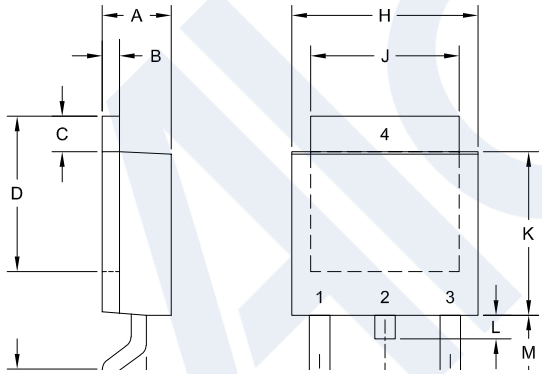
D²PAK



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.163	0.189	4.14	4.80
B	0.045	0.055	1.14	1.40
C	0.000	0.010	0.00	0.25
D	0.012	0.028	0.30	0.70
E	0.386	0.415	9.80	10.55
F	0.378	0.417	9.60	10.60
G	0.335	0.358	8.50	9.10
H	0.188	0.236	4.78	6.00
J	0.093	0.108	2.35	2.75
K	0.030	0.035	0.75	0.90

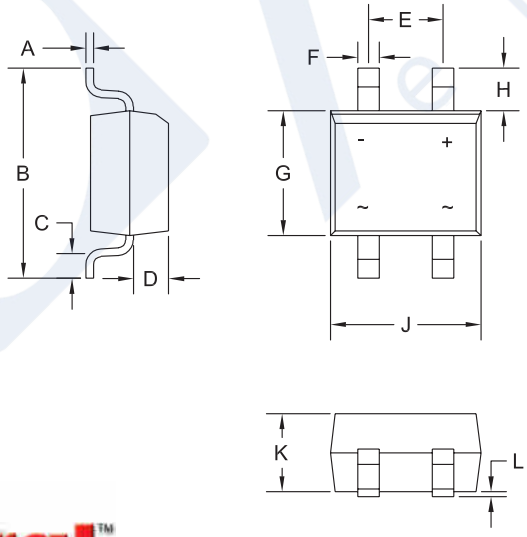
D2PAK (REV: R3)

DPAK



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.083	0.108	2.10	2.75
B	0.016	0.032	0.40	0.81
C	0.035	0.063	0.89	1.60
D	0.203	0.228	5.15	5.79
E	0.020	-	0.51	-
F	0.016	0.024	0.40	0.60
G	0.051	0.071	1.30	1.80
H	0.248	0.268	6.30	6.81
J	0.197	0.217	5.00	5.50
K	0.209	0.245	5.30	6.22
L	0.025	0.040	0.64	1.02
M	0.090	0.115	2.30	2.91
N	0.012	0.045	0.30	1.14
P	0.180		4.60	

HD DIP



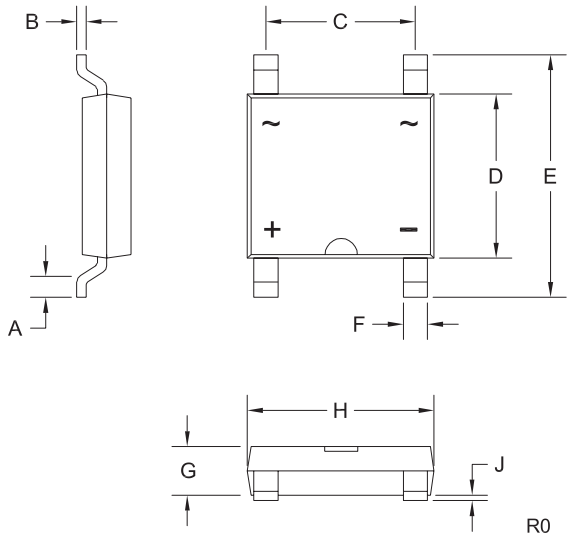
DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.006	0.014	0.15	0.35
B	-	0.275	-	7.00
C	0.027	0.043	0.70	1.10
D	0.035	0.051	0.90	1.30
E	0.090	0.106	2.30	2.70
F	0.019	0.031	0.50	0.80
G	0.150	0.165	3.80	4.20
H	0.051	0.067	1.30	1.70
J	0.177	0.193	4.50	4.90
K	0.090	0.106	2.30	2.70
L	0.000	0.008	0.00	0.20

HD DIP (REV: R2)

R2

Package Mechanical Specifications (continued)

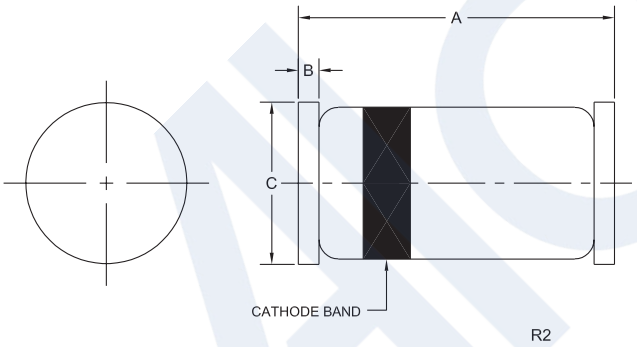
LPDIP



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.019	0.028	0.50	0.70
B	0.007	0.012	0.20	0.30
C	0.153	0.162	3.90	4.10
D	0.167	0.179	4.25	4.55
E	0.248	0.264	6.30	6.70
F	0.023	0.028	0.60	0.70
G	0.045	0.058	1.15	1.45
H	0.190	0.203	4.85	5.15
J	0.002	0.006	0.05	0.15

LPDIP (REV: R0)

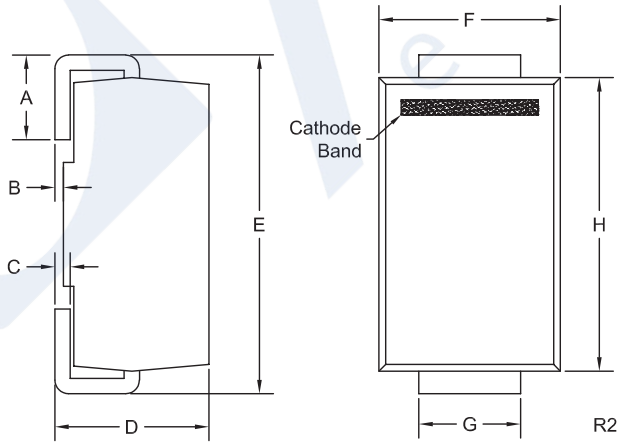
MELF



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.185	0.217	4.70	5.50
B	0.012	0.022	0.30	0.56
C (DIA)	0.094	0.110	2.40	2.80

MELF (REV:R2)

SMA

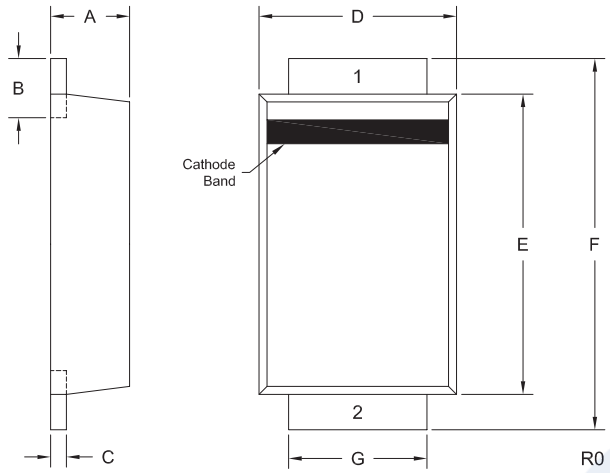


DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.030	0.060	0.76	1.52
B	0.004	0.008	0.10	0.20
C	0.006	0.012	0.15	0.30
D	0.078	0.103	1.98	2.62
E	0.188	0.220	4.78	5.59
F	0.090	0.115	2.29	2.92
G	0.050	0.070	1.27	1.78
H	0.157	0.181	3.99	4.60

SMA (REV: R2)

Package Mechanical Specifications (continued)

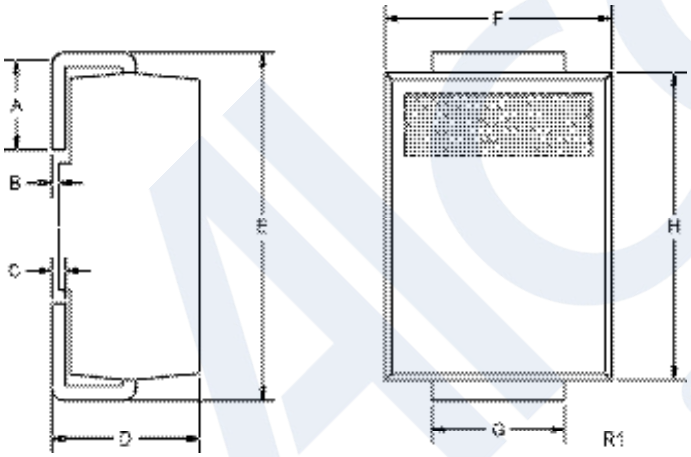
SMAFL



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.035	0.044	0.90	1.10
B	0.021	0.038	0.55	0.95
C	0.006	0.010	0.15	0.25
D	0.094	0.103	2.40	2.60
E	0.145	0.154	3.70	3.90
F	0.177	0.193	4.50	4.90
G	0.065	0.073	1.65	1.85

SMAFL (REV: R0)

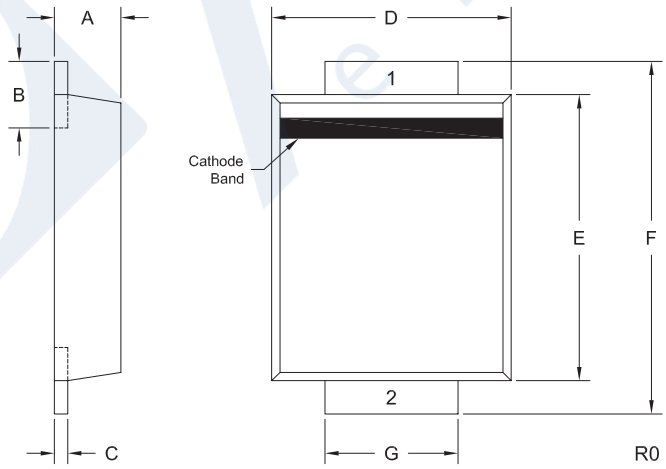
SMB



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.030	0.060	0.76	1.52
B	0.004	0.008	0.10	0.20
C	0.006	0.012	0.15	0.30
D	0.086	0.096	2.18	2.44
E	0.200	0.220	5.08	5.59
F	0.130	0.150	3.30	3.81
G	0.077	0.083	1.96	2.11
H	0.160	0.180	4.06	4.57

SMB (REV: R1)

SMBFL

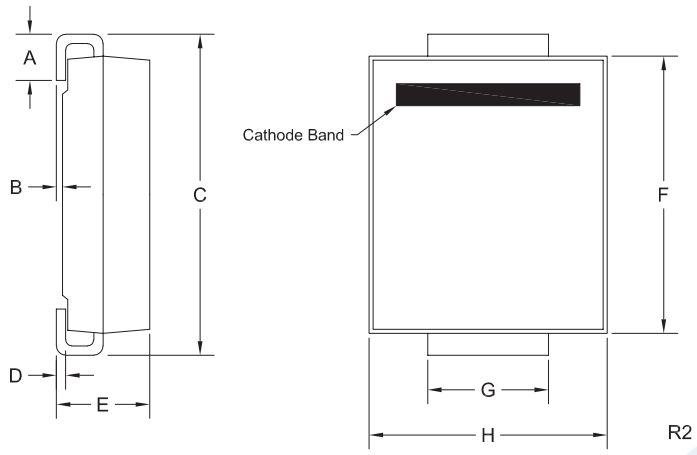


DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.035	0.044	0.90	1.10
B	0.031	0.048	0.80	1.20
C	0.006	0.010	0.15	0.25
D	0.137	0.146	3.50	3.70
E	0.161	0.178	4.10	4.50
F	0.200	0.217	5.10	5.50
G	0.074	0.083	1.90	2.10

SMBFL (REV: R0)

Package Mechanical Specifications (continued)

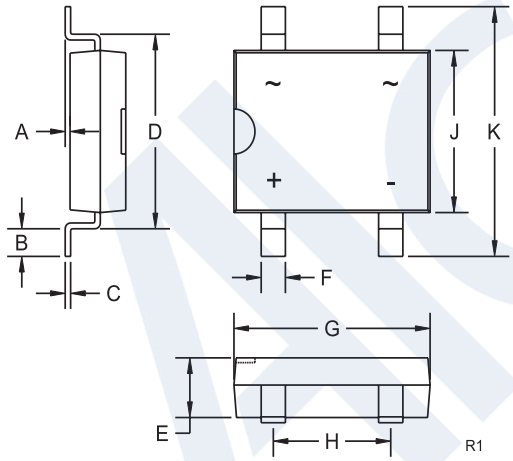
SMC



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.030	0.060	0.76	1.52
B	0.002	0.008	0.05	0.20
C	0.305	0.320	7.75	8.13
D	0.006	0.012	0.15	0.31
E	0.079	0.103	2.00	2.62
F	0.260	0.280	6.60	7.11
G	0.108	0.128	2.75	3.25
H	0.220	0.245	5.59	6.22

SMC (REV: R2)

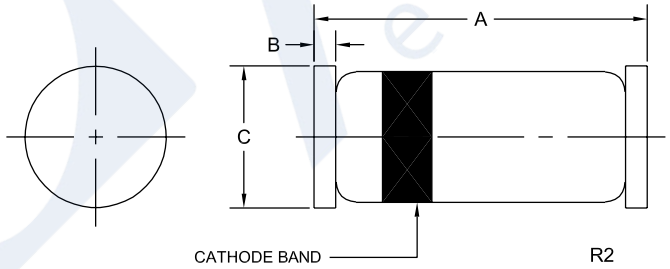
SMDIP



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.004	0.008	0.10	0.20
B	0.040	0.060	1.02	1.52
C	0.009		0.23	
D	0.290	0.310	7.37	7.87
E	0.086	0.098	2.18	2.49
F	0.038	0.042	0.97	1.07
G	0.316	0.335	8.03	8.51
H	0.195	0.205	4.95	5.21
J	0.245	0.255	6.22	6.48
K	0.360	0.410	9.14	10.41

SMDIP (REV: R1)

SOD-80

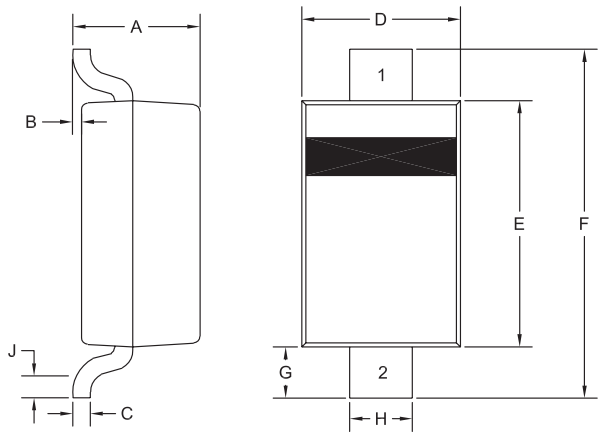


DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.130	0.146	3.30	3.71
B	0.014		0.35	
C (DIA)	0.049	0.067	1.25	1.70

SOD-80 (REV:R2)

Package Mechanical Specifications (continued)

SOD-123

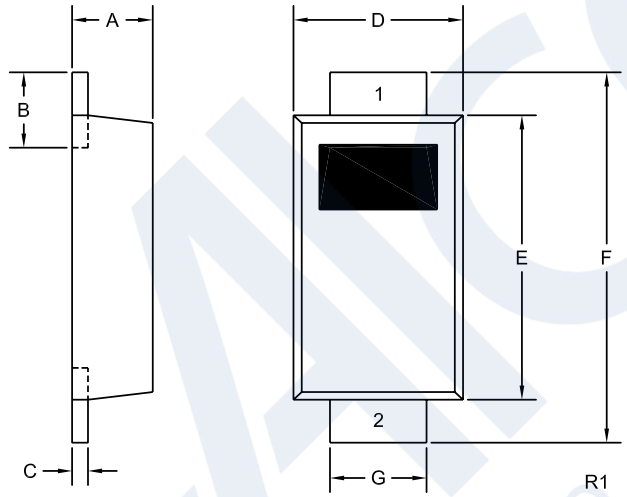


R5

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.037	0.053	0.95	1.35
B	0.000	0.005	0.00	0.12
C	-	0.008	-	0.20
D	0.055	0.071	1.40	1.80
E	0.098	0.110	2.50	2.80
F	0.142	0.154	3.60	3.90
G	0.016	-	0.40	-
H	0.020	0.028	0.50	0.70
J	0.010	-	0.25	-

SOD-123 (REV:R5)

SOD-123F

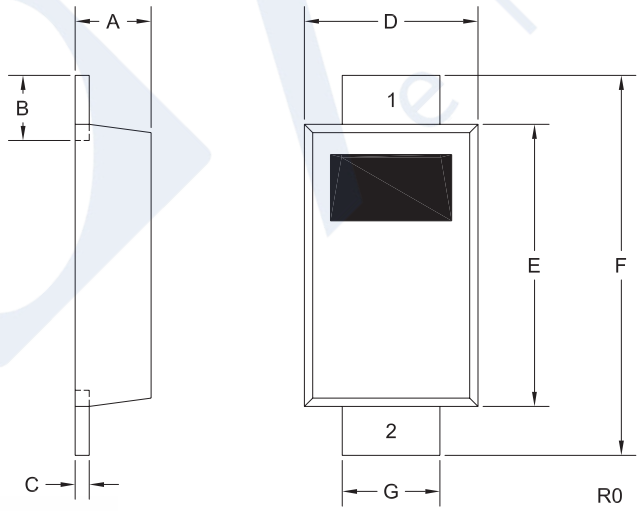


R1

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.035	0.043	0.88	1.08
B	0.020	0.031	0.50	0.80
C	0.004	0.008	0.10	0.20
D	0.065	0.077	1.65	1.95
E	0.104	0.116	2.65	2.95
F	0.140	0.156	3.55	3.95
G	0.030	0.041	0.75	1.05

SOD-123F (REV:R1)

SOD-123FL



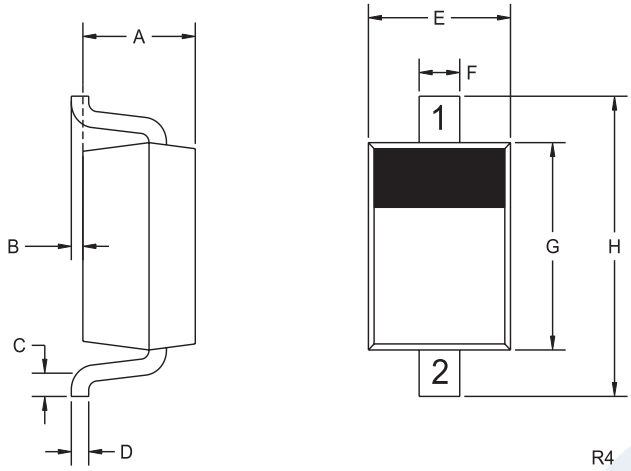
R0

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.024	0.031	0.60	0.80
B	0.020	0.028	0.50	0.70
C	0.003	0.007	0.08	0.18
D	0.059	0.067	1.50	1.70
E	0.094	0.110	2.40	2.80
F	0.130	0.146	3.30	3.70
G	0.031	0.039	0.80	1.00

SOD-123FL (REV:R0)

Package Mechanical Specifications (continued)

SOD-323

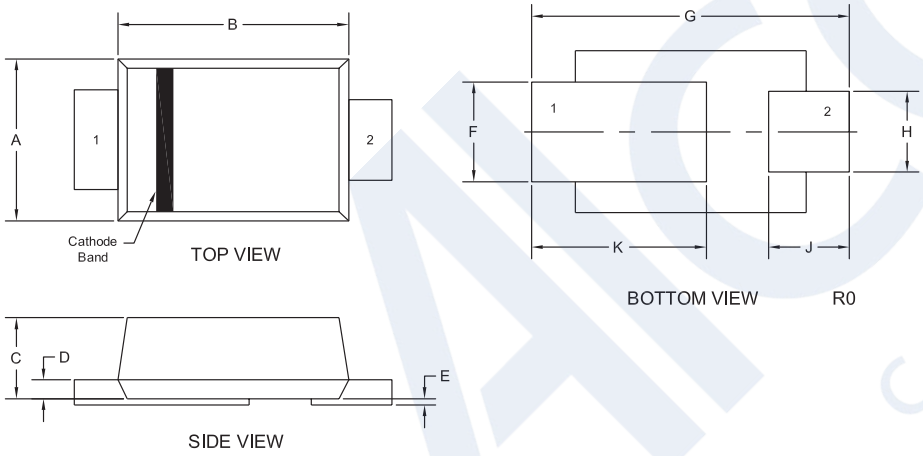


R4

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.031	0.039	0.80	1.00
B	0.000	0.004	0.00	0.10
C	0.008	-	0.20	-
D	0.004	0.007	0.11	0.19
E	0.045	0.053	1.15	1.35
F	-	0.014	-	0.35
G	0.063	0.071	1.60	1.80
H	0.094	0.102	2.40	2.60

SOD-323 (REV: R4)

SOD-323FL

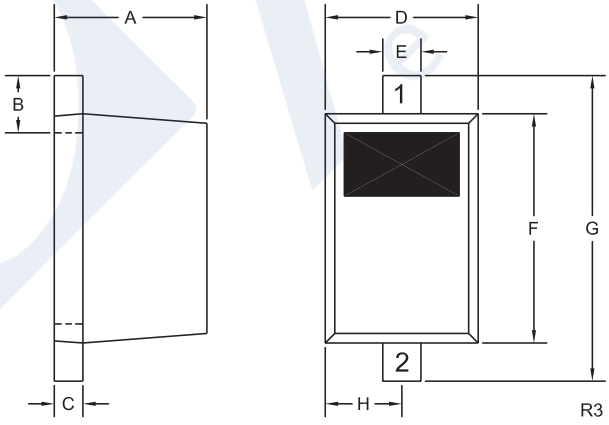


R0

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.047	0.055	1.20	1.40
B	0.068	0.077	1.75	1.95
C	0.021	0.030	0.55	0.75
D	0.004	0.008	0.10	0.20
E	-	0.004	-	0.10
F	0.025	0.038	0.65	0.95
G	0.090	0.107	2.30	2.70
H	0.017	0.030	0.45	0.75
J	0.015	0.032	0.40	0.80
K	0.045	0.061	1.15	1.55

SOD-323FL (REV:R0)

SOD-523

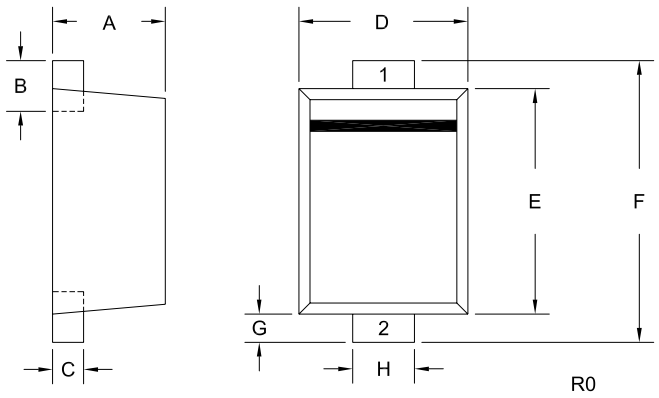


R3

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.020	0.031	0.50	0.80
B	0.008	0.016	0.20	0.40
C	0.002	0.008	0.05	0.20
D	0.028	0.035	0.70	0.90
E	0.008	0.014	0.20	0.35
F	0.039	0.055	1.00	1.40
G	0.055	0.071	1.40	1.80
H	0.016		0.40	

SOD-523 (REV: R3)

SOD-923

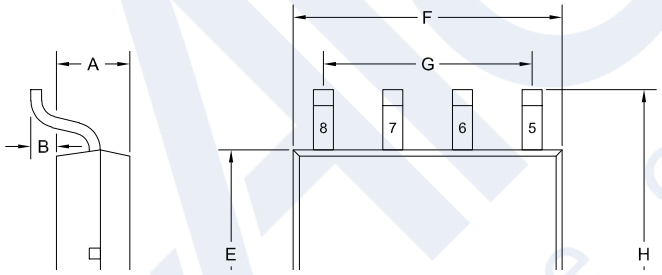


DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.015	0.016	0.39	0.41
B	0.004	0.010	0.10	0.26
C	0.003	0.006	0.08	0.14
D	0.022	0.026	0.55	0.65
E	0.030	0.033	0.75	0.85
F	0.035	0.043	0.90	1.10
G	0.002	0.006	0.05	0.15
H	0.007	0.011	0.17	0.27

SOD-923 (REV: R0)

SOIC-8

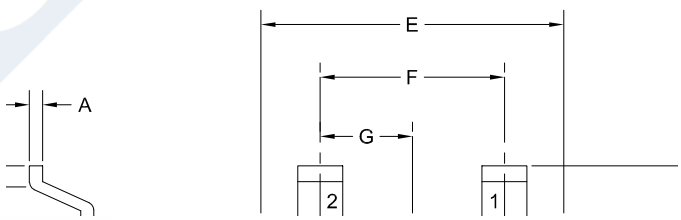
Mechanical Drawing: SOIC-8



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.055	0.061	1.392	1.554
B	0.004	0.009	0.100	0.224
C	0.016	0.035	0.40	0.90
D	0.007	0.010	0.19	0.25
E	0.145	0.157	3.80	4.00
F	0.189	0.198	4.80	5.00
G	0.150		3.81	
H	0.228	0.244	5.80	6.20
J	0.013	0.020	0.33	0.51
K	0.050		1.27	

SOT-23

Mechanical Drawing: SOT-23

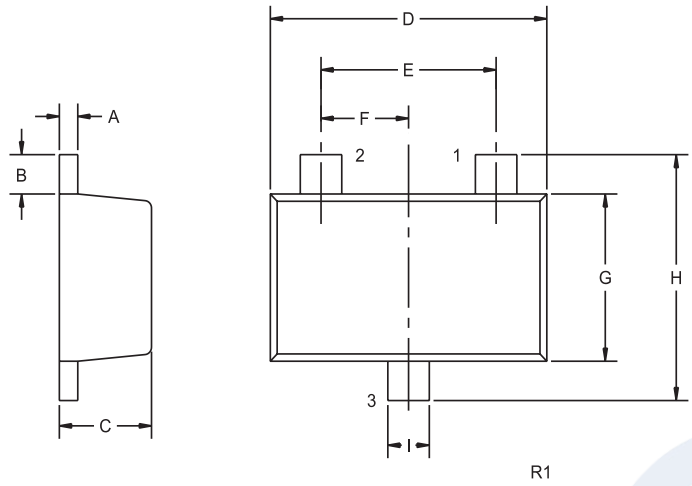


DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.003	0.007	0.08	0.18
B	0.006	-	0.15	-
C	-	0.005	-	0.13
D	0.035	0.044	0.89	1.12
E	0.110	0.120	2.80	3.05
F	0.075		1.90	
G	0.037		0.95	
H	0.047	0.055	1.19	1.40
I	0.083	0.104	2.10	2.64
J	0.014	0.020	0.35	0.50

SOT-23 (REV: R4)

Package Mechanical Specifications (continued)

SOT-23F

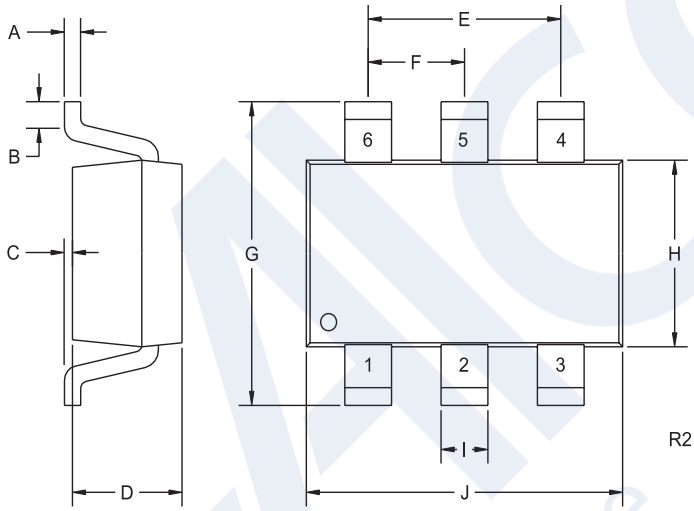


R1

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.004	0.008	0.10	0.20
B	0.012	0.020	0.30	0.50
C	0.031	0.039	0.80	1.00
D	0.110	0.118	2.80	3.00
E	0.075		1.90	
F	0.037		0.95	
G	0.059	0.067	1.50	1.70
H	0.091	0.098	2.30	2.50
I	0.014	0.018	0.35	0.45

SOT-23F (REV: R1)

SOT-26

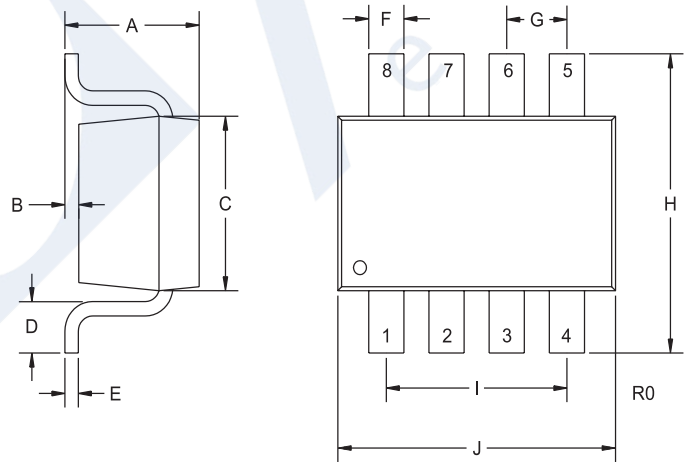


R2

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.004	0.007	0.11	0.19
B	0.016	-	0.40	-
C	-	0.004	-	0.10
D	0.039	0.047	1.00	1.20
E	0.074	0.075	1.88	1.92
F	0.037	0.038	0.93	0.97
G	0.102	0.118	2.60	3.00
H	0.059	0.067	1.50	1.70
I	0.016		0.41	
J	0.110	0.118	2.80	3.00

SOT-26 (REV: R2)

SOT-28

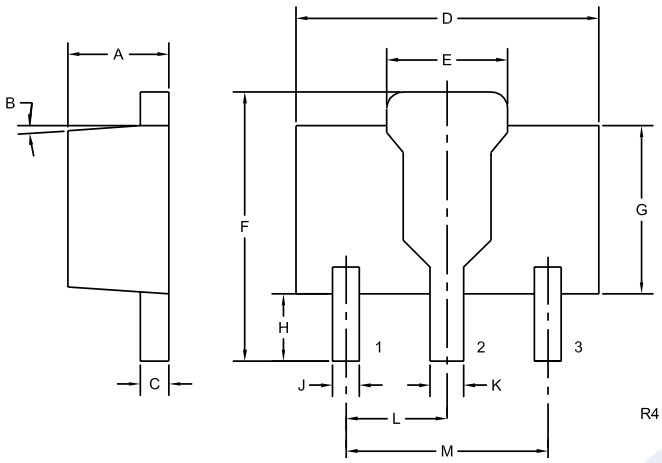


R0

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.035	0.057	0.90	1.45
B	0.000	0.006	0.00	0.15
C	0.059	0.069	1.50	1.75
D	0.014	0.022	0.35	0.55
E	0.004	0.008	0.09	0.20
F	0.009	0.015	0.22	0.38
G	0.026		0.65	
H	0.102	0.118	2.60	3.00
I	0.077		1.95	
J	0.110	0.118	2.80	3.00

SOT-28 (REV: R0)

SOT-89



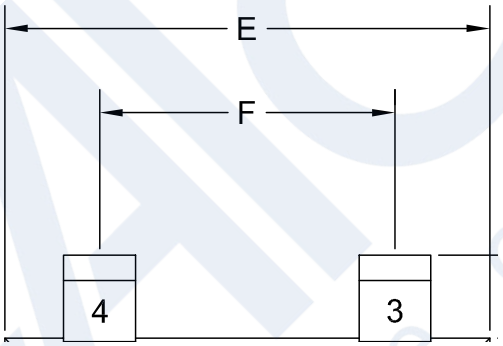
BOTTOM VIEW

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.055	0.067	1.40	1.70
B	4°		4°	
C	0.014	0.018	0.35	0.46
D	0.173	0.185	4.40	4.70
E	0.064	0.074	1.62	1.87
F	0.146	0.177	3.70	4.50
G	0.090	0.106	2.29	2.70
H	0.028	0.051	0.70	1.30
J	0.014	0.019	0.36	0.48
K	0.017	0.023	0.44	0.58
L	0.059		1.50	
M	0.118		3.00	

SOT-89 (REV: R4)

SOT-143

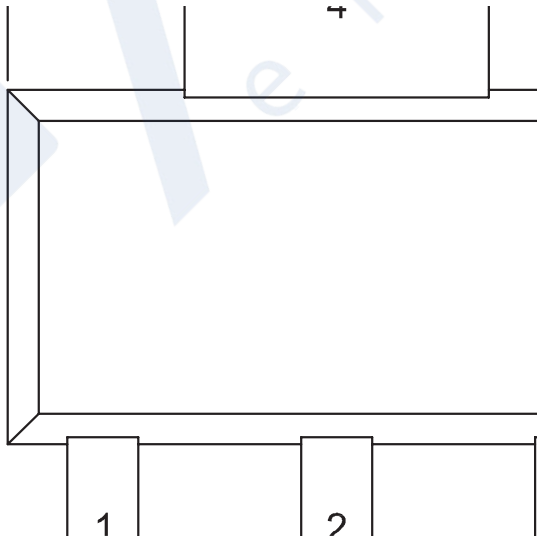
SOT-143 MECHANICAL DRAWING



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.003	0.008	0.08	0.20
B	0.006	-	0.15	-
C	0.000	0.005	0.01	0.13
D	0.035	0.045	0.89	1.14
E	0.110	0.120	2.79	3.04
F	0.075		1.90	
G	0.083	0.102	2.10	2.60
H	0.047	0.055	1.19	1.40
J	0.012	0.020	0.30	0.50
K	0.030	0.037	0.76	0.93
L	0.067		1.70	

SOT-143 (REV: R3)

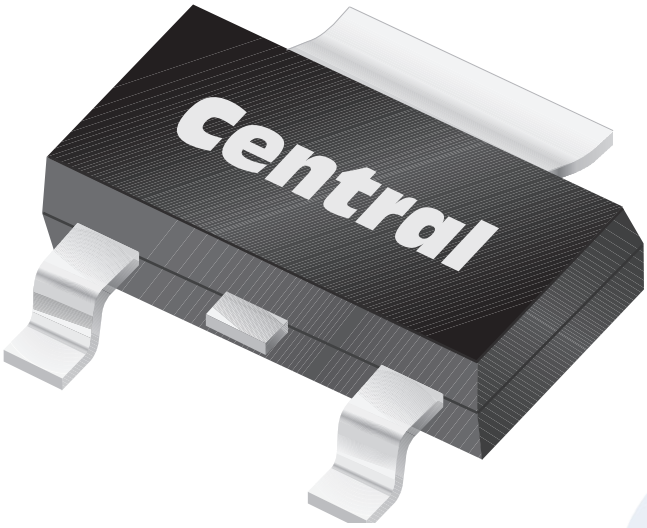
SOT-223



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0°	10°	0°	10°
B	0.059	0.071	1.50	1.80
C	0.018	—	0.45	—
D	0.000	0.004	0.00	0.10
E	10°		10°	
F	0.009	0.014	0.23	0.35
G	0.248	0.264	6.30	6.70
H	0.114	0.122	2.90	3.10
I	0.130	0.146	3.30	3.70
J	0.264	0.287	6.70	7.30
K	0.024	0.033	0.60	0.85
L	0.091		2.30	
M	0.181		4.60	

SOT-223 (REV: R4)

SOT-223C

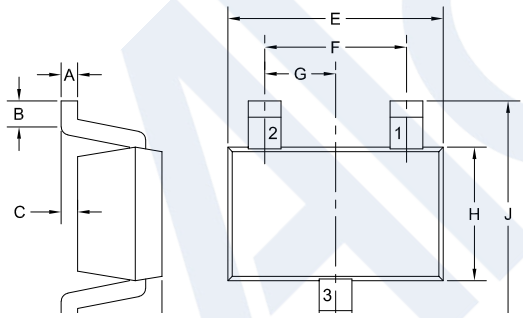


DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0°	10°	0°	10°
B	0.059	0.071	1.50	1.80
C	0.018	-	0.45	-
D	0.000	0.004	0.00	0.10
E	15°		15°	
F	0.009	0.014	0.23	0.35
G	0.248	0.264	6.30	6.70
H	0.114	0.122	2.90	3.10
J	0.130	0.146	3.30	3.70
K	0.264	0.287	6.70	7.30
L	0.024	0.033	0.60	0.85
M	0.091		2.30	
N	0.181		4.60	
P	-	0.025	-	0.64

SOT-223C (REV: R2)

SOT-323

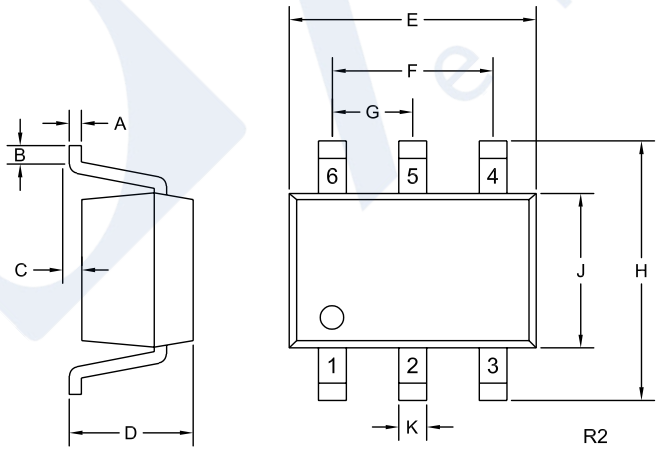
Mechanical Drawing: SOT-323



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.002	0.008	0.05	0.20
B	0.004	-	0.10	-
C	-	0.004	-	0.10
D	0.031	0.043	0.80	1.10
E	0.071	0.087	1.80	2.20
F	0.051		1.30	
G	0.026		0.65	
H	0.045	0.053	1.15	1.35
J	0.079	0.087	2.00	2.20
K	0.008	0.016	0.20	0.40

SOT-323 (REV: R3)

SOT-363

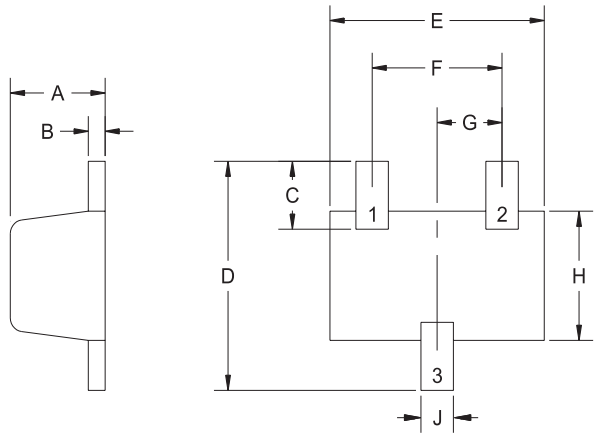


DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.004	0.010	0.10	0.25
B	0.005	-	0.12	-
C	0.000	0.004	0.00	0.10
D	0.031	0.043	0.80	1.10
E	0.071	0.087	1.80	2.20
F	0.051		1.30	
G	0.026		0.65	
H	0.075	0.091	1.90	2.30
J	0.043	0.055	1.10	1.40
K	0.006	0.012	0.15	0.30

SOT-363 (REV: R2)

SOT-523

BOTTOM VIEW

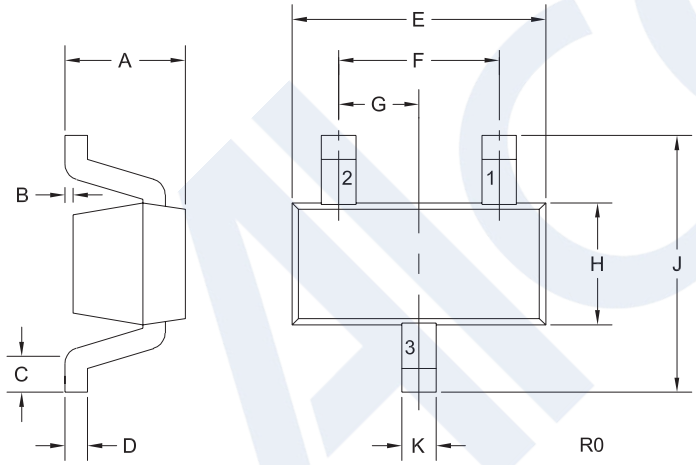


R2

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.023	0.031	0.58	0.78
B	0.002	0.008	0.04	0.20
C	0.013	0.021	0.34	0.54
D	0.059	0.067	1.50	1.70
E	0.059	0.067	1.50	1.70
F	0.035	0.043	0.90	1.10
G	0.020		0.50	
H	0.031	0.039	0.78	0.98
J	0.010	0.014	0.25	0.35

SOT-523 (REV: R2)

SOT-523W

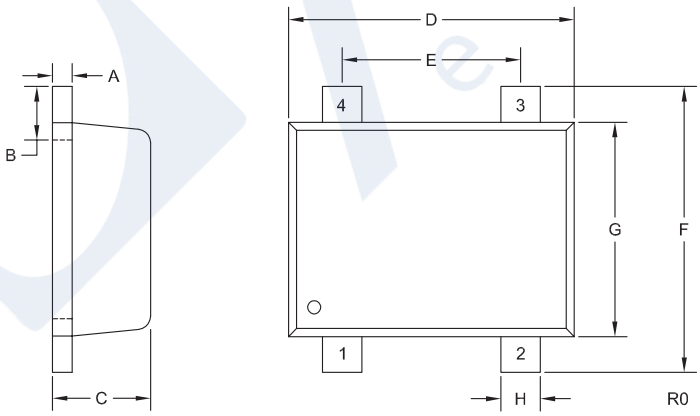


R0

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	-	0.031	-	0.80
B	0.000	0.004	0.00	0.10
C	0.006	0.012	0.15	0.30
D	0.005	0.006	0.13	0.15
E	0.058	0.066	1.48	1.68
F	0.039		1.00	
G	0.020		0.50	
H	0.026	0.034	0.66	0.86
J	0.059	0.067	1.50	1.70
K	0.007	0.009	0.19	0.24

SOT-523W (REV: R0)

SOT-543



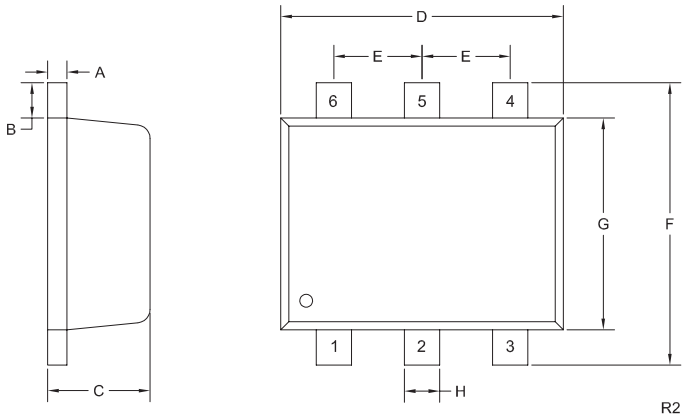
R0

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.002	0.007	0.07	0.17
B	0.004	0.012	0.10	0.30
C	0.019	0.024	0.50	0.60
D	0.059	0.067	1.50	1.70
E	0.035	0.044	0.90	1.10
F	0.059	0.067	1.50	1.70
G	0.044	0.052	1.10	1.30
H	0.006	0.011	0.17	0.27

SOT-543 (REV: R0)

Package Mechanical Specifications (continued)

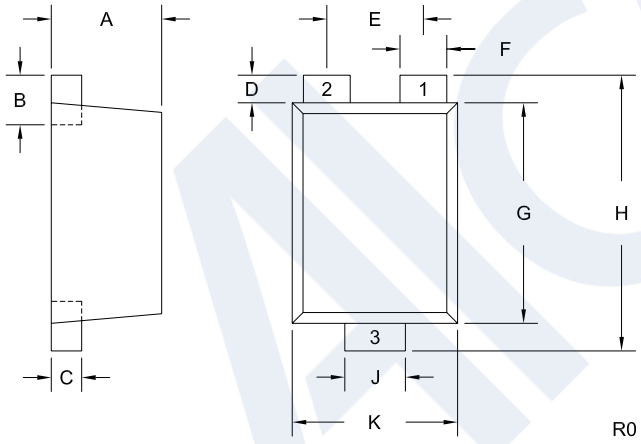
SOT-563



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.0027	0.007	0.07	0.18
B	0.008		0.20	
C	0.017	0.024	0.45	0.60
D	0.059	0.067	1.50	1.70
E	0.020		0.50	
F	0.059	0.067	1.50	1.70
G	0.043	0.051	1.10	1.30
H	0.006	0.012	0.15	0.30

SOT-563 (REV: R2)

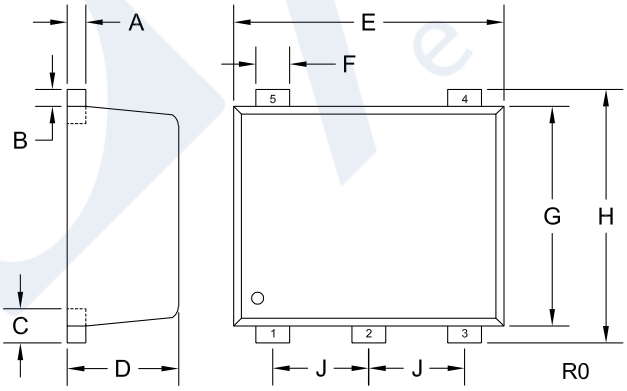
SOT-923



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.015	0.016	0.39	0.41
B	0.004	0.010	0.10	0.26
C	0.003	0.006	0.08	0.14
D	0.002	0.006	0.05	0.15
E	0.014		0.35	
F	0.005	0.009	0.12	0.22
G	0.030	0.033	0.75	0.85
H	0.035	0.043	0.90	1.10
J	0.007	0.011	0.17	0.27
K	0.022	0.026	0.55	0.65

SOT-923 (REV: R0)

SOT-953

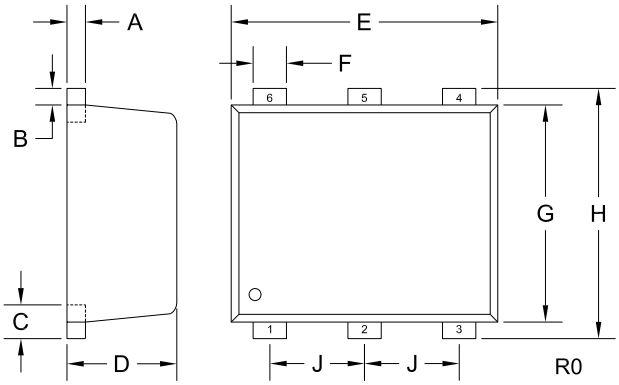


DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.002	0.006	0.050	0.150
B	0.002	0.006	0.050	0.150
C	0.005	0.007	0.125	0.175
D	0.016	0.020	0.400	0.500
E	0.037	0.041	0.950	1.050
F	0.004	0.008	0.100	0.200
G	0.030	0.033	0.750	0.850
H	0.037	0.041	0.950	1.050
J	0.014		0.350	

SOT-953 (REV: R0)

Package Mechanical Specifications (continued)

SOT-963

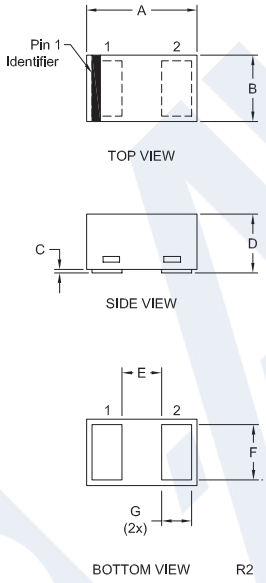


DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.002	0.006	0.050	0.150
B	0.002	0.006	0.050	0.150
C	0.005	0.007	0.125	0.175
D	0.016	0.020	0.400	0.500
E	0.037	0.041	0.950	1.050
F	0.004	0.008	0.100	0.200
G	0.030	0.033	0.750	0.850
H	0.037	0.041	0.950	1.050
J	0.014		0.350	

SOT-963 (REV: R0)

Leadless Packages, Mechanical Specifications

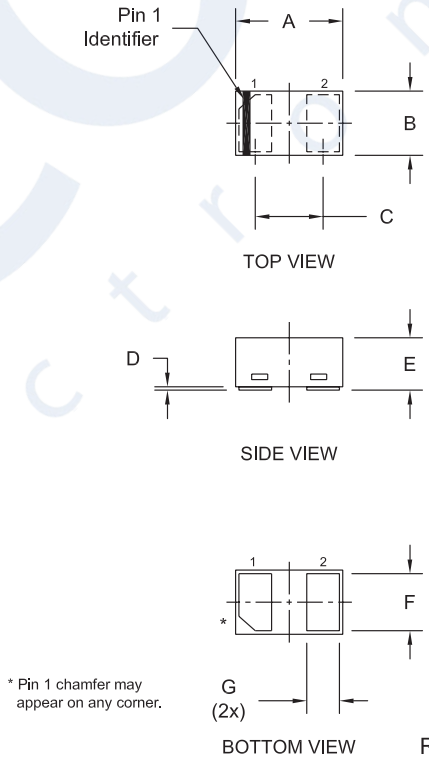
SOD-882



DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.037	0.042	0.95	1.05
B	0.022	0.026	0.55	0.65
C	0.000	0.002	0.00	0.05
D	0.017	0.022	0.45	0.55
E	0.014		0.36	
F	0.017	0.022	0.45	0.55
G	0.008	0.013	0.22	0.32

SOD-882 (REV:R2)

SOD-882L

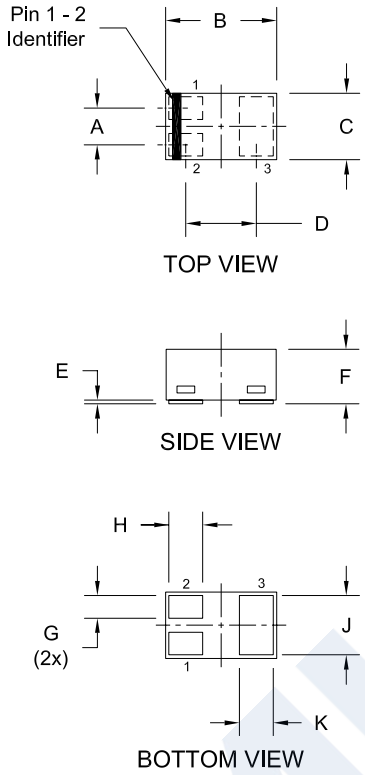


* Pin 1 chamfer may appear on any corner.

DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.037	0.041	0.95	1.05
B	0.022	0.026	0.55	0.65
C	0.026		0.65	
D	0.000	0.002	0.00	0.05
E	0.012	0.016	0.30	0.40
F	0.018	0.022	0.45	0.55
G	0.008	0.012	0.20	0.30

SOD-882L (REV:R2)

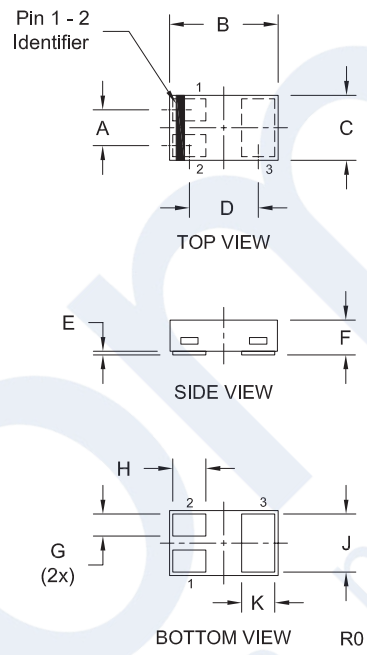
SOT-883L



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.014		0.35	
B	0.037	0.041	0.95	1.05
C	0.022	0.026	0.55	0.65
D	0.026		0.65	
E	0.000	0.002	0.00	0.05
F	0.012	0.016	0.30	0.40
G	0.005	0.007	0.13	0.18
H	0.008	0.012	0.20	0.30
J	0.018	0.022	0.45	0.55
K	0.008	0.012	0.20	0.30

SOT-883L (REV:R2)

SOT-883VL

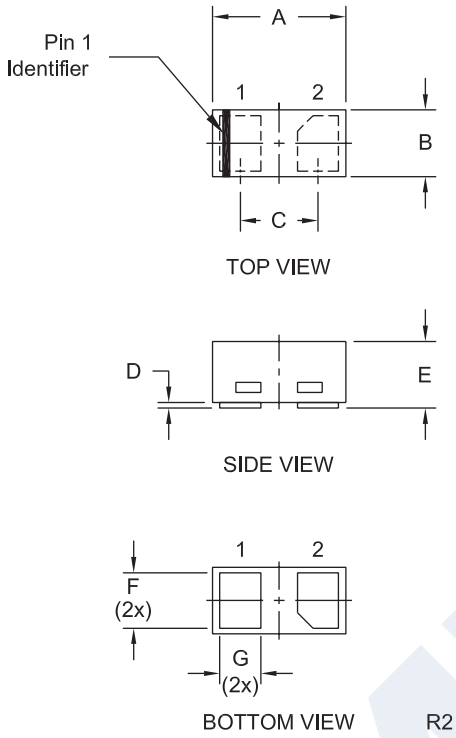


DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.014		0.35	
B	0.037	0.041	0.95	1.05
C	0.022	0.026	0.55	0.65
D	0.026		0.65	
E	0.000	0.002	0.00	0.05
F	0.012	0.013	0.30	0.32
G	0.004	0.008	0.10	0.20
H	0.008	0.012	0.20	0.30
J	0.018	0.022	0.45	0.55
K	0.008	0.012	0.20	0.30

SOT-883VL (REV:R0)

Leadless Packages, Mechanical Specifications (continued)

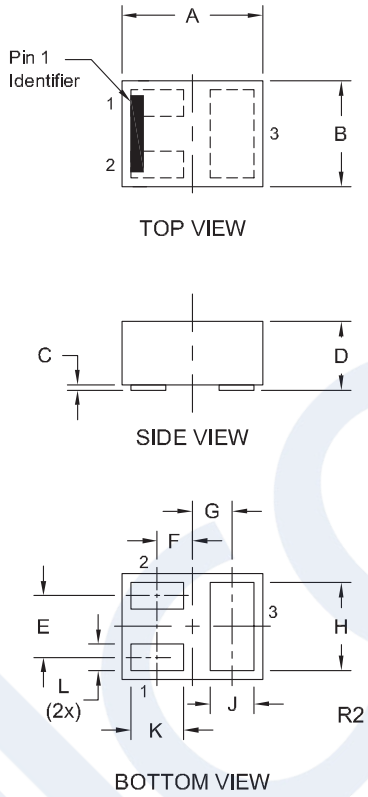
TLM2D3D6



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.022	0.026	0.55	0.65
B	0.010	0.014	0.25	0.35
C	0.014		0.35	
D	0.000	0.002	0.00	0.05
E	0.011	0.013	0.28	0.32
F	0.008	0.012	0.20	0.30
G	0.005	0.009	0.13	0.24

TLM2D3D6 (REV: R2)

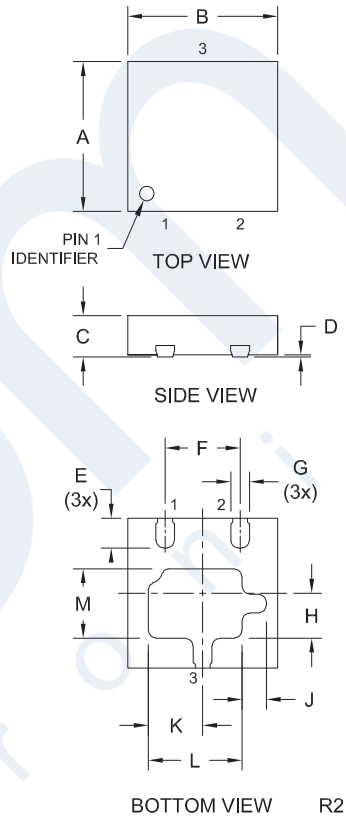
TLM3D6D8



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.029	0.034	0.75	0.85
B	0.021	0.026	0.55	0.65
C	0.000	0.002	0.00	0.05
D	0.012	0.016	0.31	0.40
E	0.014		0.35	
F	0.008		0.20	
G	0.009		0.225	
H	0.017	0.022	0.45	0.55
J	0.008	0.012	0.20	0.30
K	0.010	0.014	0.25	0.35
L	0.004	0.008	0.10	0.20

TLM3D6D8 (REV: R2)

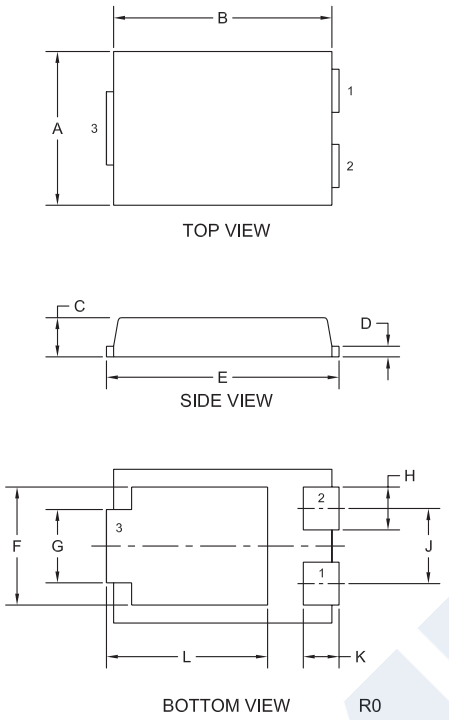
TLM322S



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.076	0.081	1.95	2.05
B	0.076	0.081	1.95	2.05
C	0.019	0.024	0.50	0.60
D	0.000	0.002	0.00	0.05
E	0.011	0.020	0.30	0.50
F	0.039		1.00	
G	0.007	0.012	0.18	0.30
H	0.017	0.028	0.45	0.70
J	0.008	0.017	0.22	0.43
K	0.024	0.033	0.62	0.83
L	0.043	0.054	1.10	1.35
M	0.030	0.041	0.77	1.03

TLM322S (REV:R2)

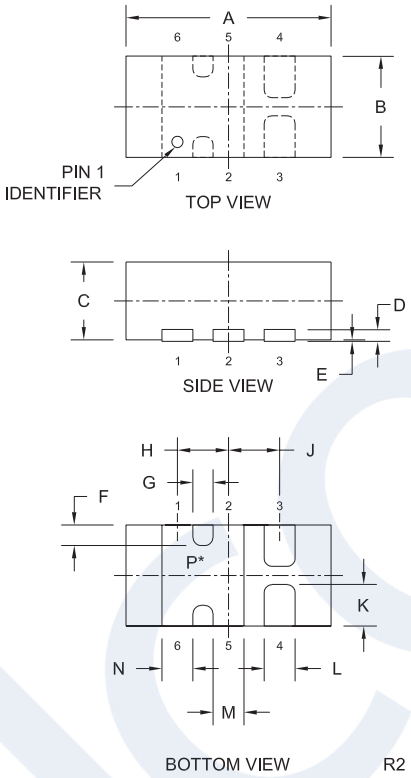
TLM364



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.167	0.172	4.25	4.35
B	0.238	0.243	6.05	6.15
C	0.039	0.048	1.00	1.20
D	0.009	0.014	0.25	0.35
E	0.250	0.262	6.35	6.65
F	0.128	0.136	3.25	3.45
G	0.076	0.085	1.95	2.15
H	0.044	0.052	1.10	1.30
J	0.083		2.10	
K	0.035	0.044	0.90	1.10
L	0.171	0.183	4.35	4.65

TLM364 (REV:R0)

TLM621

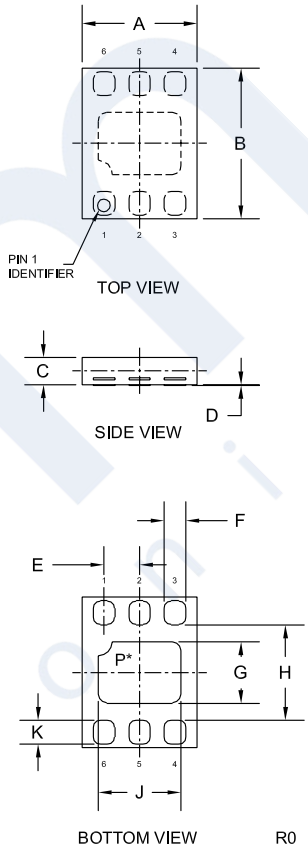


Exposed pad P connects pins 1, 2, 5, and 6

DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.073	0.085	1.850	2.150
B	0.033	0.045	0.850	1.150
C	0.028	0.031	0.700	0.800
D	0.006		0.150	
E	0.000	0.002	0.000	0.050
F	0.008		0.200	
G	0.010		0.250	
H	0.020		0.500	
J	0.020		0.500	
K	0.012	0.020	0.300	0.500
L	0.007	0.012	0.180	0.300
M	0.007	0.012	0.180	0.300
N	0.007	0.012	0.180	0.300

TLM621 (REV: R2)

TLM621H

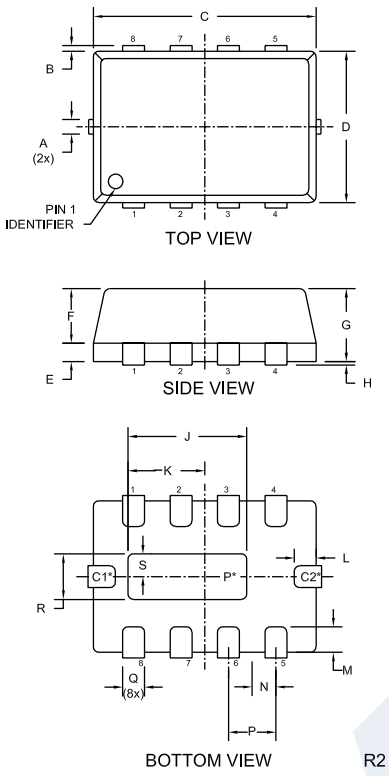


*Exposed pad P internally connected to pins 3 and 4

DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.053	0.065	1.35	1.65
B	0.073	0.085	1.85	2.15
C	0.012	0.016	0.30	0.40
D	0.000	0.002	0.00	0.05
E	0.020		0.50	
F	0.008	0.012	0.20	0.30
G	0.027	0.035	0.69	0.89
H	0.053	0.057	1.35	1.45
J	0.039	0.047	0.99	1.19
K	0.011	0.015	0.28	0.38

TLM621H (REV:R0)

TLM832

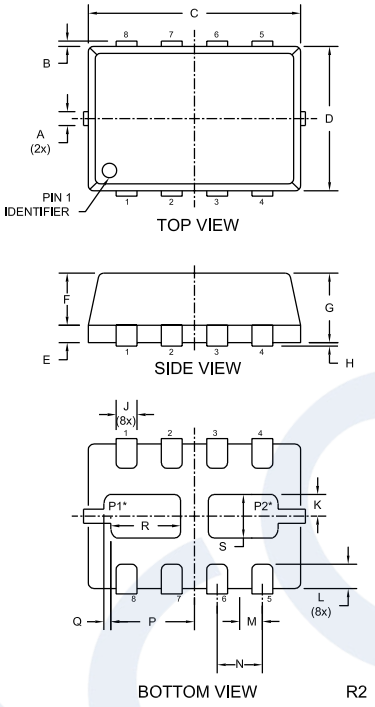


* Note:
- Exposed pad P internally connected to pins 1, 2, 3, 6, 7, 8
- Exposed metallized connection C1 internally connected to pins 1, 2, 3, 6, 7, 8
- Exposed metallized connection C2 internally connected to pin 5

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.007	0.012	0.170	0.300
B	-	0.005	-	0.125
C	0.114	0.122	2.900	3.100
D	0.075	0.083	1.900	2.100
E	0.006	0.010	0.150	0.250
F	0.026	0.030	0.650	0.750
G	0.031	0.039	0.800	1.000
H	0.000	0.002	0.000	0.050
J	0.059	0.067	1.500	1.700
K	0.036	0.044	0.910	1.110
L	0.008	0.018	0.200	0.450
M	0.008	0.018	0.200	0.450
N	0.013		0.325	
P	0.026		0.650	
Q	0.009	0.013	0.240	0.340
R	0.017	0.025	0.430	0.630
S	0.006	0.014	0.160	0.360

TLM832 (REV: R2)

TLM832D

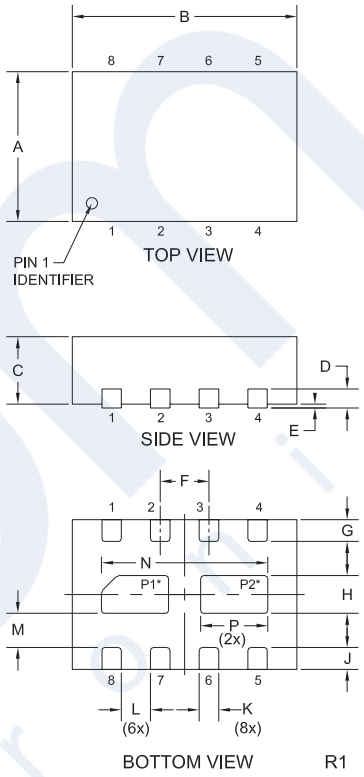


* Note:
- Exposed pad P1 common to pins 7 and 8
- Exposed pad P2 common to pins 5 and 6

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.007	0.012	0.170	0.300
B	-	0.005	-	0.125
C	0.114	0.122	2.900	3.100
D	0.075	0.083	1.900	2.100
E	0.006	0.010	0.150	0.250
F	0.026	0.030	0.650	0.750
G	0.031	0.039	0.800	1.000
H	0.000	0.002	0.000	0.050
J	0.009	0.013	0.240	0.340
K	0.006	0.014	0.160	0.360
L	0.008	0.018	0.200	0.450
M	0.013		0.325	
N	0.026		0.650	
P	0.040	0.048	1.010	1.210
Q	0.004		0.100	
R	0.032	0.040	0.820	1.020
S	0.017	0.025	0.430	0.630

TLM832D (REV: R2)

TLM832DS

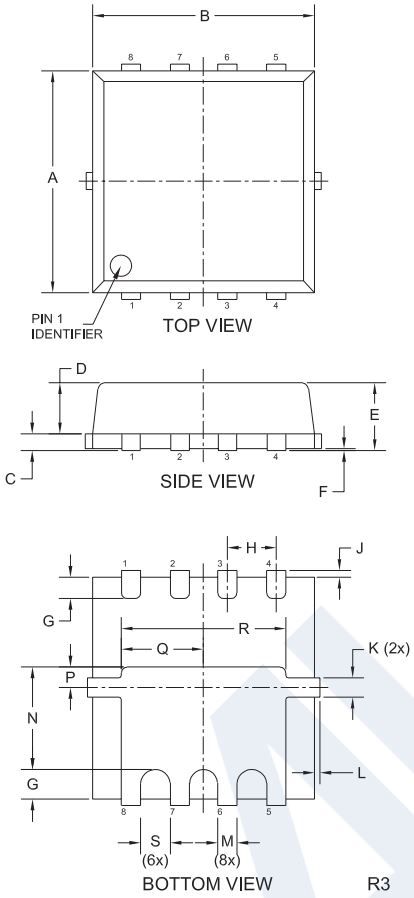


* Exposed pad P1 common to pins 7 and 8
Exposed pad P2 common to pins 5 and 6

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.077	0.081	1.95	2.05
B	0.116	0.120	2.95	3.05
C	0.031	0.039	0.80	1.00
D	0.006	0.010	0.16	0.25
E	0.000	0.002	0.00	0.05
F	0.026		0.65	
G	0.008	0.016	0.19	0.40
H	0.014	0.024	0.35	0.61
J	0.008	0.016	0.19	0.40
K	0.008	0.012	0.21	0.31
L	0.013	0.017	0.34	0.44
M	0.006	--	0.15	--
N	0.087		2.22	
P	0.029	0.039	0.74	1.00

TLM832DS (REV:R1)

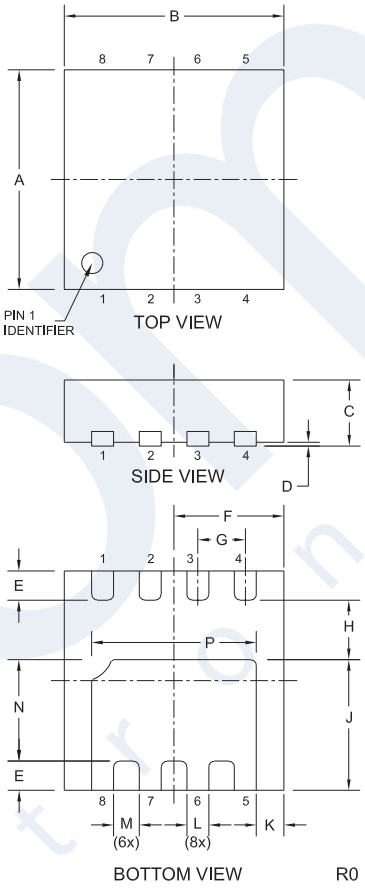
TLM833



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.114	0.122	2.90	3.10
B	0.114	0.122	2.90	3.10
C	0.006	0.010	0.15	0.25
D	0.026	0.030	0.65	0.75
E	0.031	0.039	0.80	1.00
F	0.000	0.002	0.00	0.05
G	0.008	0.018	0.20	0.45
H	0.026		0.65	
J	---	0.005	---	0.125
K	0.007	0.012	0.17	0.30
L	---	0.005	---	0.125
M	0.011	0.015	0.29	0.39
N	0.049	0.057	1.25	1.45
P	0.006	0.014	0.15	0.35
Q	0.040	0.048	1.01	1.21
R	0.085	0.093	2.16	2.36
S	0.012	0.016	0.30	0.40

TLM833 (REV:R3)

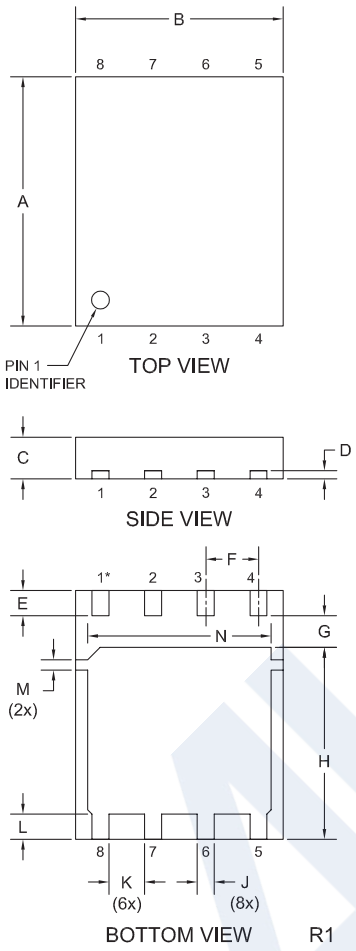
TLM833S



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.112	0.124	2.85	3.15
B	0.112	0.124	2.85	3.15
C	0.031	0.039	0.80	1.00
D	0.000	0.002	0.00	0.05
E	0.012	0.020	0.30	0.50
F	0.056	0.062	1.43	1.57
G	0.026		0.65	
H	0.030	0.033	0.75	0.85
J	0.065	0.073	1.65	1.85
K	0.012	0.016	0.30	0.40
L	0.010	0.014	0.25	0.35
M	0.012	0.016	0.30	0.40
N	0.047	0.057	1.20	1.45
P	0.081	0.091	2.07	2.32

TLM833S (REV:R0)

TLM856

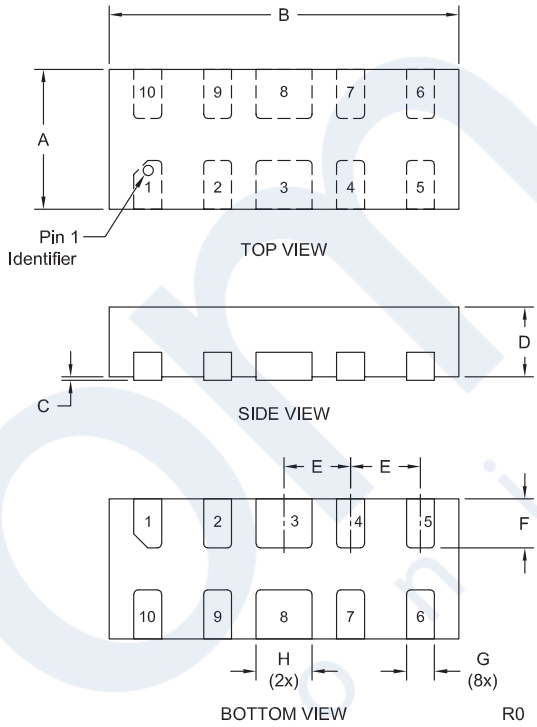


* Pins 1, 2, and 3 are internally connected

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.232	0.240	5.90	6.10
B	0.193	0.201	4.90	5.10
C	0.037	0.040	0.95	1.025
D	0.008		0.20	
E	0.022	0.026	0.56	0.66
F	0.050		1.27	
G	0.028	0.032	0.71	0.81
H	0.180	0.184	4.58	4.68
J	0.014	0.018	0.36	0.46
K	0.034		0.86	
L	0.022	0.026	0.56	0.66
M	0.008	0.012	0.20	0.30
N	0.172	0.176	4.37	4.47

TLM856 (REV:R1)

TLM1031



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.037	0.041	0.95	1.05
B	0.096	0.100	2.45	2.55
C	0.000	0.002	0.00	0.05
D	0.018	0.022	0.45	0.55
E	0.020		0.50	
F	0.012	0.016	0.30	0.40
G	0.006	0.010	0.15	0.25
H	0.014	0.018	0.35	0.45

TLM1031 (REV:R0)

QUALITY POLICY

- Our definition of quality is **Complete Customer Satisfaction**.
- We are dedicated to manufacturing Competitively Priced, **Quality Products** delivered on time and professionally serviced.
- We define **Excellence** as surpassing our customers' expectations.
- Our perpetual challenge is the pursuit of **Achieving Excellence** in everything we do, and we strive to accomplish this by utilizing **Ongoing Training** for **Continuous Improvement** in all areas.
- We recognize that customer satisfaction results in **Repeat Business**.

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Product Support

Central's sales-operations team provides the highest level of support to insure product is delivered on-time.

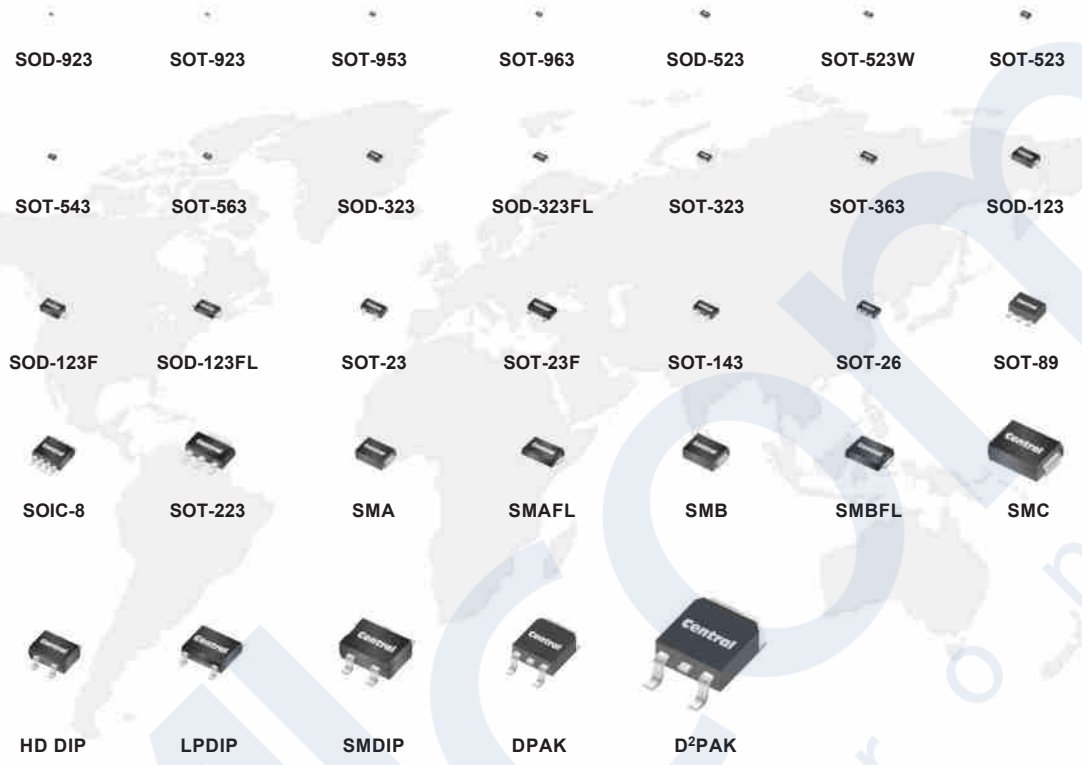
- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom packing
- Custom bar coding for shipments

Designer Support/Services

Central's engineering team is ready to discuss your design challenges. Just ask.

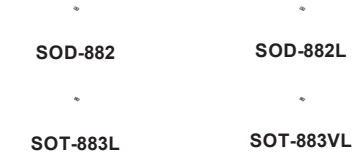
- Quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

Surface Mount Packages
(Actual Size)



TLM™ Tiny Leadless Module
Bottom View

TLP™ Tiny Leadless Package
Bottom View



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