

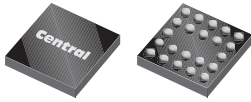
CCSPG0420N

**N-CH GALLIUM NITRIDE  
FIELD EFFECT TRANSISTOR**

**Central**  
Semiconductor™

[www.centrasemi.com](http://www.centrasemi.com)
**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CCSPG0420N is an N-channel gallium nitride field effect transistor designed for use in power modules and fast-charging power circuit designs.

**MARKING: CSP 0420**

Top View Bottom View

**CSP2X2 CASE**

**MAXIMUM RATINGS:** ( $T_J=25^\circ\text{C}$ )

	SYMBOL		UNITS
Drain-Source Voltage	$V_{DS}$	40	V
Gate-Source Voltage	$V_{GS}$	6.0	V
Continuous Drain Current	$I_D$	20	A
Pulsed Drain Current ( $t_p=300\mu\text{s}$ )	$I_{DM}$	100	A
Operating and Storage Junction Temperature	$T_J, T_{stg}$	-40 to +125	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS:** ( $T_J=25^\circ\text{C}$  unless otherwise noted)

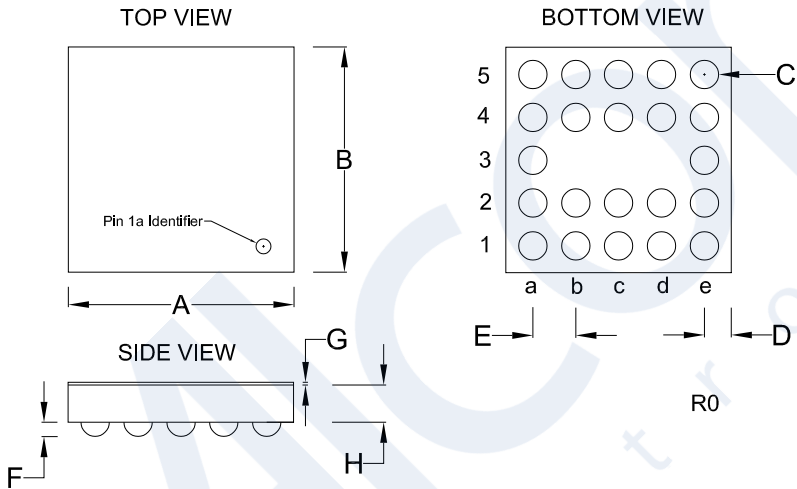
SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{GSSR}$	$V_{GS}=5.0\text{V}, V_{DS}=0$	30			$\mu\text{A}$
$I_{GSSR}$	$V_{GS}=6.0\text{V}, V_{DS}=0$	40			$\mu\text{A}$
$I_{DSS}$	$V_{DS}=40\text{V}, V_{GS}=0$			20	$\mu\text{A}$
$BV_{DSS}$	$V_{GS}=0, I_D=500\mu\text{A}$	40			V
$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=1.0\text{mA}$	0.8		2.4	V
$r_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=10\text{A}$		4.0	4.8	$\text{m}\Omega$
$C_{iss}$	$V_{DS}=20\text{V}, V_{GS}=0, f=1\text{MHz}$		886.5		pF
$C_{oss}$	$V_{DS}=20\text{V}, V_{GS}=0, f=1\text{MHz}$		381.2		pF
$C_{rss}$	$V_{DS}=20\text{V}, V_{GS}=0, f=1\text{MHz}$		226.4		pF
$Q_g$	$V_{DS}=20\text{V}, V_{GS}=0$ to 5V, $I_D=10\text{A}$		15.8		nC
$Q_{gd}$	$V_{DS}=20\text{V}, V_{GS}=0$ to 5V, $I_D=10\text{A}$		8.6		nC
$Q_{gs}$	$V_{DS}=20\text{V}, V_{GS}=0$ to 5V, $I_D=10\text{A}$		1.9		nC

R2 (10-November 2023)

**CCSPG0420N**  
**N-CH GALLIUM NITRIDE**  
**FIELD EFFECT TRANSISTOR**



**CSP2X2 CASE - MECHANICAL OUTLINE**



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.081	0.084	2.07	2.13
B	0.081	0.084	2.07	2.13
C	ø 0.01		ø 0.27	
D	0.010		0.250	
E	0.016		0.400	
F	0.0065	0.0089	0.165	0.225
G	0.0009	0.0011	0.022	0.028
H	0.0130	0.0141	0.330	0.358

CSP2X2 (REV: R0)

**LEAD CODE:**

- 1a-1e) Drain
- 2a-2e) Source
- 3a) NC
- 3e) Gate
- 4a-4e) Drain
- 5a-5e) Source

**MARKING:**  
**CSP 0420**

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES

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### PRODUCT SUPPORT

Central's 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 bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2<sup>nd</sup> 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

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

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