

# 2822HC

## High current surface mount Brick fuse



### Product features

- 7.7 x 6.0 x 4.3 mm surface mount package
- High current Brick fuse
- Current rating: 40 A to 125 A
- Voltage rating: Up to 80 Vdc
- High interrupting rating
- cURus recognized
- Single fuse solution for high current applications
- Moisture sensitivity level: (MSL): 1

### Applications

- Servers and back planes
- Power distribution units (PDUs)
- Power supplies
- Energy storage system
- Industrial automation tools
- Robotic machinery
- Telecom DC/DC power
- Routers & switches

### Agency information

cURus Recognition file number: E91958,  
Guide JFHR2 & JFHR8



### Environmental compliance



### Ordering part number

**2822HC xx -RTR**

Family code \_\_\_\_\_  
 Ampere rating \_\_\_\_\_  
 RoHS compliant \_\_\_\_\_  
 Packaging code \_\_\_\_\_

### Packaging code suffix

TR (1000 parts on a 13" diameter tape and reel)



*Powering Business Worldwide*

**Electrical characteristics**

Amp Rating	1.0 In minimum	2.5 In maximum
40 A ~ 125 A	4 hours	60 seconds

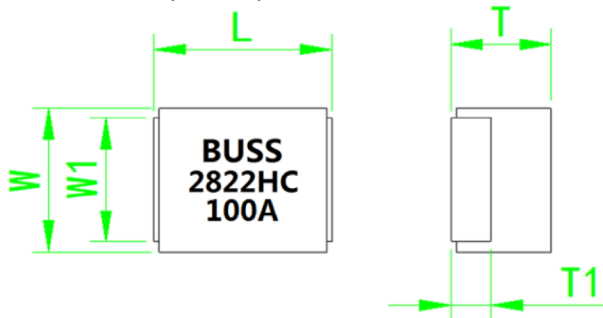
**Product specifications**

Part number	Current rating (A)	Voltage rating (Vdc)	Interrupting rating @ rated voltage <sup>1</sup> (A)	Typical cold resistance <sup>2</sup> (mΩ)	Typical voltage drop (mV)	Part marking
2822HC40-R	40	72*	1000 A @ 72 Vdc 1000 A @ 80 Vdc	1.10	75	BUSS 2822HC 40A
2822HC50-R	50	72*	1000 A @ 72 Vdc 1000 A @ 80 Vdc	0.87	75	BUSS 2822HC 50A
2822HC60-R	60	72*	1000 A @ 72 Vdc 1000 A @ 80 Vdc	0.78	100	BUSS 2822HC 60A
2822HC70-R	70	72*	1000 A @ 72 Vdc 500 A @ 80 Vdc	0.60	100	BUSS 2822HC 70A
2822HC80-R	80	72*	1000 A @ 72 Vdc 500 A @ 80 Vdc	0.58	100	BUSS 2822HC 80A
2822HC90-R	90	72*	1000 A @ 72 Vdc 500 A @ 80 Vdc	0.54	100	BUSS 2822HC 90A
2822HC100-R	100	72*	1000 A @ 72 Vdc 500 A @ 80 Vdc	0.45	100	BUSS 2822HC 100A
2822HC125-R	125	60	1000 A @ 60 Vdc	0.40	110	BUSS 2822HC 125A

1. DC Interrupting rating (measured at designated voltage, time constant of less than 1 milliseconds, battery source)  
2. Typical cold resistance is measured at <10% of rated current in ambient temperature of +25 °C  
\*= UL rated at 72 Vdc and 80 Vdc

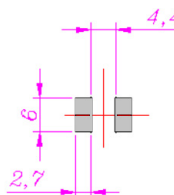
**Dimensions- mm**

Drawing not to scale

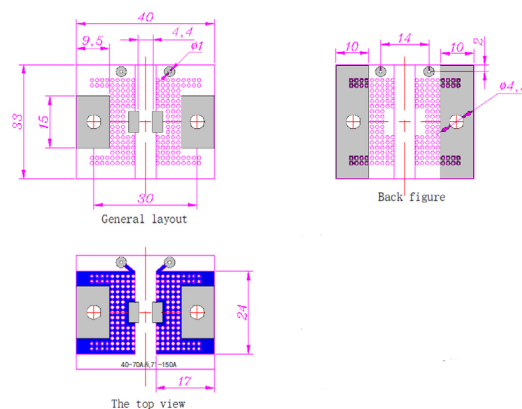


Amp rating	L	W	T	W1	T1
40 A - 90 A	7.6 ± 0.30	6.0 ± 0.30	4.2 ± 0.20	5.0 REF	1.6 REF
100 A - 125 A	7.7 ± 0.30	6.0 ± 0.30	4.3 ± 0.30	5.0 REF	1.6 REF

**Recommended pad layout**



**Standard test board**



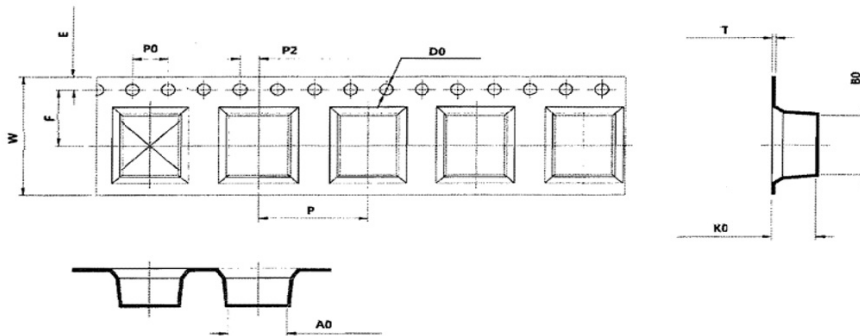
Testing board: 1.6 mm FR4 PCB  
Copper thickness: 3 oz for 40 A – 70 A,  
6 oz for above 70 A. Tin plated

**General specifications**

Operating temperature: -40 °C to +125 °C with proper derating factor applied
Soldering heat resistance: MIL-STD-202 method 210, Solder temperature +260 ±5 °C, solder immersion time 10±5 s
Solderability test: J-STD-002, method B1, Steam aging 1 hour, Solder temperature + 255 ±5 °C, solder immersion time 5 s
Thermal shock: MIL-STD-202 method 107, -40 °C/+125 °C. 1000 cycles, maximum transfer time 20 seconds, Dwell time 15 minutes. Air-Air
Humidity bias: MIL-STD-202 method 103, 1000 hours +85 °C/85% RH. at 10% of operating power.
Vibration: MIL-STD-202F method 201, 2 hours each of 3 orientations. Test from 10-55 Hz for 1 minute
Mechanical shock: MIL-STD-202 method 213, Figure 1 of Method 213. Condition C 100 g 6 ms
High temperature operating life: MIL-STD-202 method 108, Condition D steady state TA=+70 °C at 60% rated current.

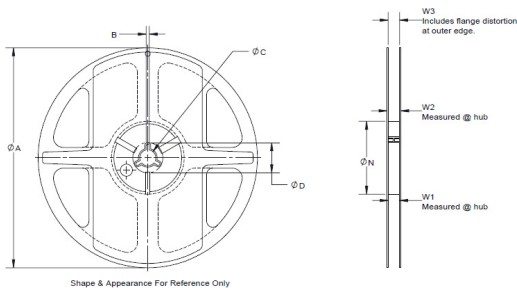
**Packaging information - mm**

1000 parts per 13" diameter reel (EIA-481 compliant)  
Drawing not to scale



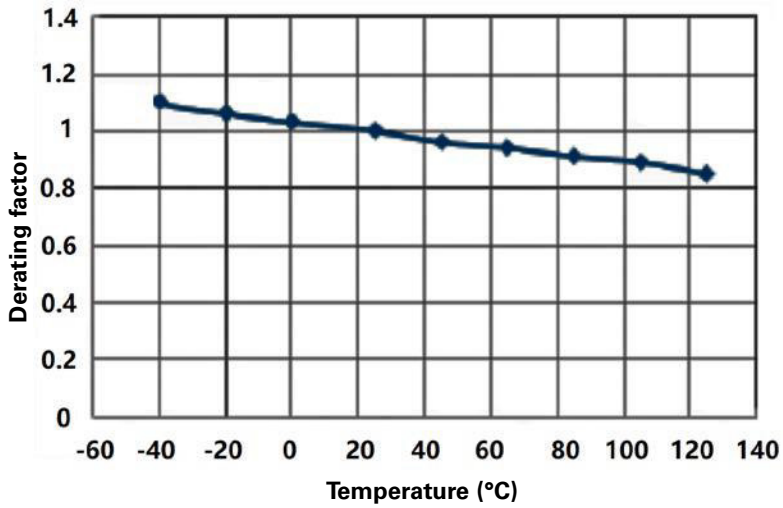
Dimension	millimeter
W	16.0
F	7.5
E	1.75
P0	4.0
P	12.0
P2	2.0
ØD0	1.50
ØD1	N/A
A0	6.3
B0	8.0
K0	4.7

**Reel dimension- mm**

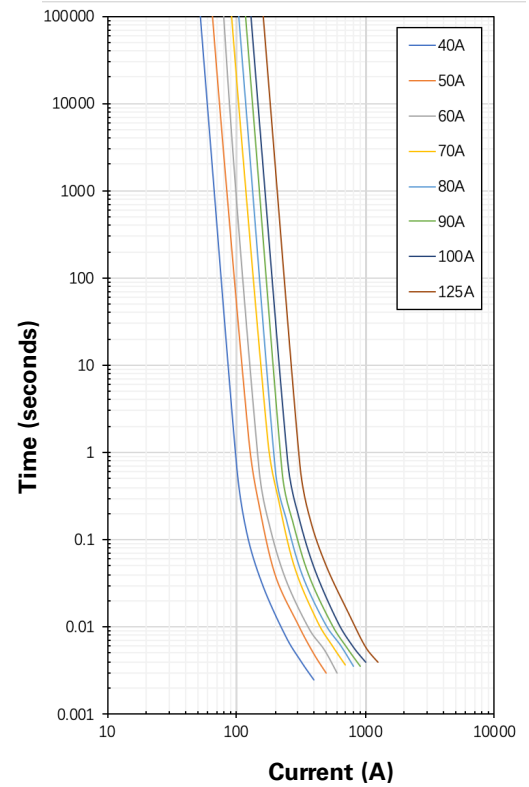


Dimension	millimeter
A	330
B	2.2
C	13.5
D	22
W1	16.5
W2	22.4 maximum

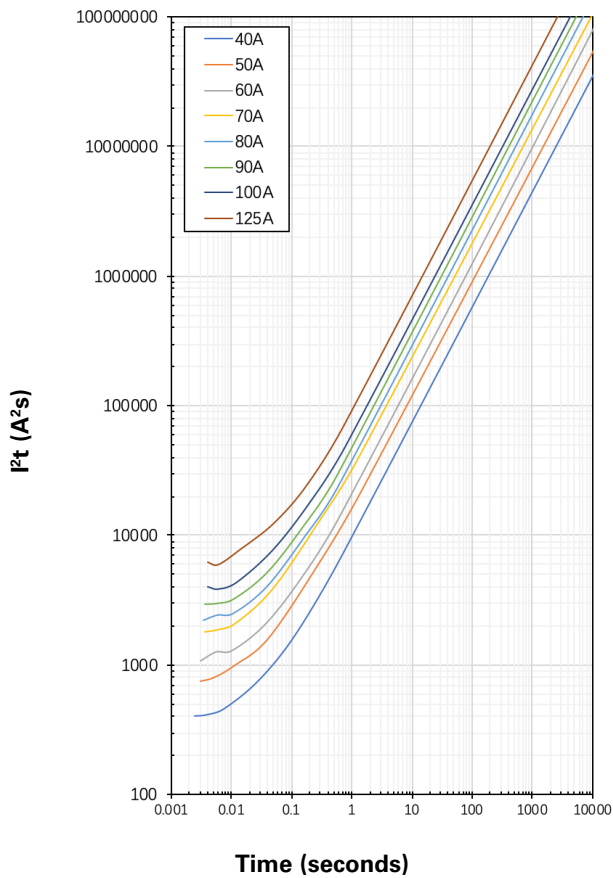
Temperature derating curve



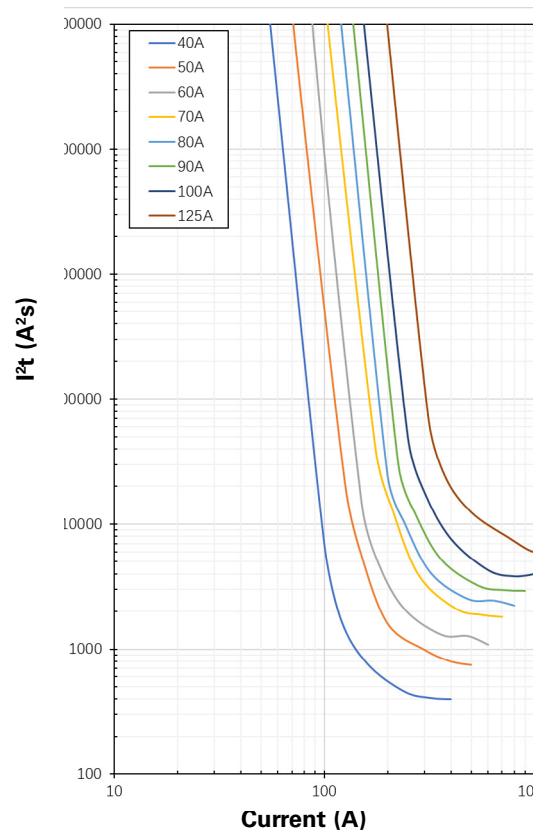
Time vs. current curve



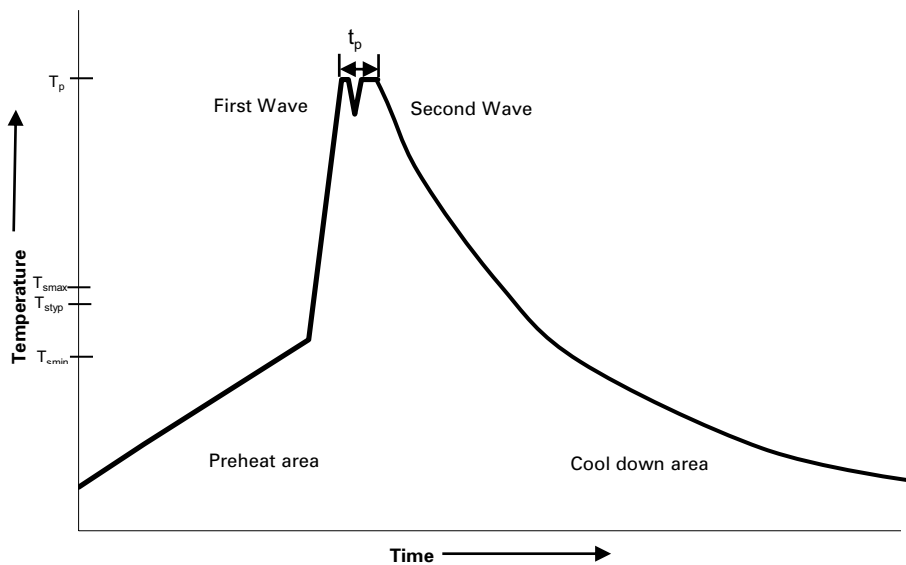
I<sup>2</sup>t vs. time curve



I<sup>2</sup>t vs. current



**Wave solder profile**



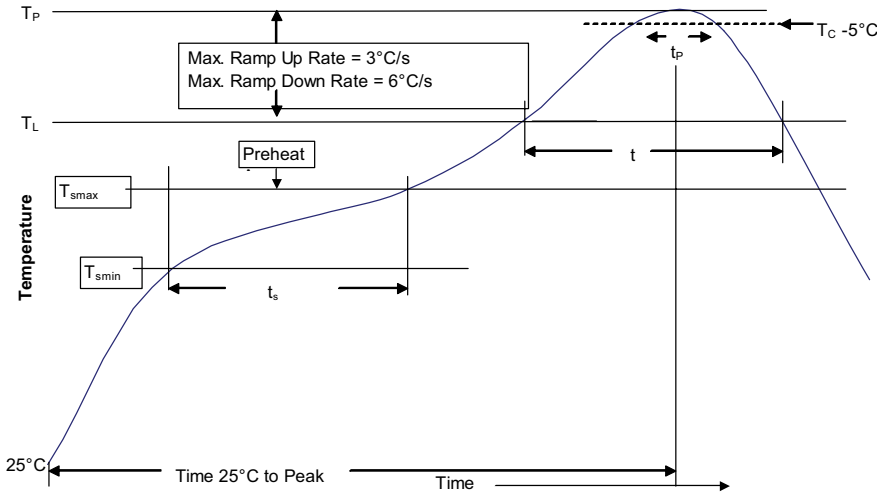
**Reference**

Profile feature		Standard SnPb solder	Lead (Pb) free solder
Preheat	• Temperature min. ( $T_{smin}$ )	100 °C	100 °C
	• Temperature typ. ( $T_{styp}$ )	120 °C	120 °C
	• Temperature max. ( $T_{smax}$ )	130 °C	130 °C
	• Time ( $T_{smin}$ to $T_{smax}$ ) ( $t_s$ )	70 seconds	70 seconds
$\Delta$ preheat to max Temperature		150 °C max.	150 °C max.
Peak temperature ( $T_p$ )*		235 °C – 260 °C	250 °C – 260 °C
Time at peak temperature ( $t_p$ )		6 seconds max 3 seconds max each wave	6 seconds max 3 seconds max each wave
Ramp-down rate		~ 2 K/s min ~3.5 K/s typ ~5 K/s max	~ 2 K/s min ~3.5 K/s typ ~5 K/s max
Time 25 °C to 25 °C		4 minutes	4 minutes

**Manual solder**

+350 °C (4-5 seconds by soldering iron), generally manual/hand soldering is not recommended.

**Solder reflow profile**



**Table 1 - Standard SnPb solder ( $T_C$ )**

Package thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> ≥350
<2.5 mm	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

**Table 2 - Lead (Pb) free solder ( $T_C$ )**

Package thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350 - 2000	Volume mm <sup>3</sup> >2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 – 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

**Reference J-STD-020**

Profile feature	Standard SnPb solder	Lead (Pb) free solder
Preheat and soak	<ul style="list-style-type: none"> <li>Temperature min. (<math>T_{smin}</math>)</li> <li>Temperature max. (<math>T_{smax}</math>)</li> <li>Time (<math>T_{smin}</math> to <math>T_{smax}</math>) (<math>t_s</math>)</li> </ul>	<ul style="list-style-type: none"> <li>100 °C</li> <li>150 °C</li> <li>60-120 seconds</li> </ul>
Ramp up rate $T_L$ to $T_p$	3 °C/ second max.	3 °C/ second max.
Liquidous temperature ( $T_L$ ) Time ( $t_L$ ) maintained above $T_L$	<ul style="list-style-type: none"> <li>183 °C</li> <li>60-150 seconds</li> </ul>	<ul style="list-style-type: none"> <li>217 °C</li> <li>60-150 seconds</li> </ul>
Peak package body temperature ( $T_p$ )*	Table 1	Table 2
Time ( $t_p$ )* within 5 °C of the specified classification temperature ( $T_C$ )	20 seconds*	30 seconds*
Ramp-down rate ( $T_p$ to $T_L$ )	6 °C/ second max.	6 °C/ second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

\* Tolerance for peak profile temperature ( $T_p$ ) is defined as a supplier minimum and a user maximum.

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