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 150 A
- Voltage rating: Up to 80 Vdc
- High interrupting rating
- cURus recognized to UL248
- TUV to IEC 60269-1&7 for 150 A
- 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

- Routers & switches
- cURus Recognition file number: E56412, Guide JFHR2 & JFHR8 (40 A to 150 A)
- TUV file number: J 50651470 (150 A)

Environmental compliance

Ordering part number

2822HC xx -R TR

- Family code
- Ampere rating
- RoHS compliant
- Packaging code

Packaging code suffix

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

Powering Business Worldwide

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Electrical characteristics

Amp Rating	1.0 In minimum	2.5 In maximum
40 A ~ 150 A	4 hours	60 seconds

Product specifications

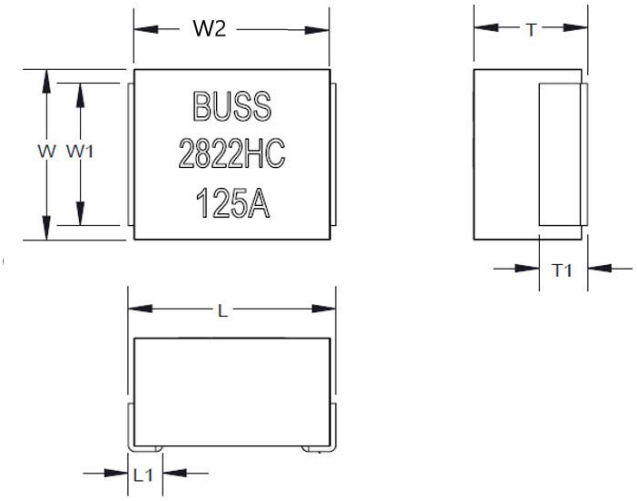
Part number	Current rating (A)	Voltage rating (Vdc)	Interrupting rating @ rated voltage[1] (A)	Typical cold resistance[2] (mΩ)	Typical voltage drop (mV)	Part marking
2822HC40-R	40	72*	1000 A @ 72 Vdc 1000 A @ 80 Vdc	1.10	75	BUSS 2822HC 40A
2822HC50-R	50	72*	1000 A @ 72 Vdc 1000 A @ 80 Vdc	0.87	75	BUSS 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	75	1200 A @ 75 Vdc	0.40	110	BUSS 2822HC 125A
2822HC150-R	150	75	1200 A @ 63 Vdc (TUV) 1000 A @ 70 Vdc (TUV) 1200 A @ 75 Vdc (UL)	0.31	110	BUSS 2822HC 150A

1. DC Interrupting rating (measured at designated voltage, time constant of less than 1 mIliseconds, 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

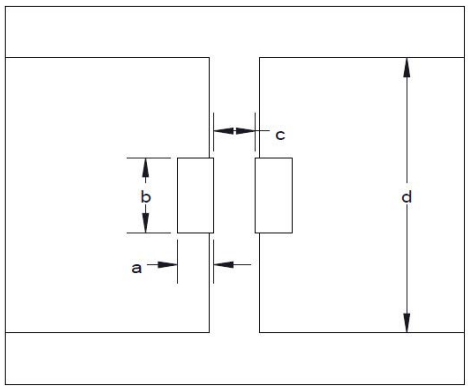
Dimensions- mm

Drawing not to scale



Amp rating	L	W	T	L1	W1	W2	T1
40 A - 90 A	7.6 ± 0.30	6.0 ± 0.30	4.2 ± 0.30	1.4 REF	5.0 REF	6.9 REF	1.6 REF
100 A - 125 A	7.7 ± 0.30	6.0 ± 0.30	4.3 ± 0.30	1.4 REF	5.0 REF	6.9 REF	1.6 REF
150 A	7.8 ± 0.30	6.0 ± 0.30	4.3 ± 0.30	1.5 REF	5.7 REF	6.9 REF	2.3 REF

Recommended pad layout-mm



Amp rating	a	b	c	d
40 A - 70 A	2.7	5.8	4.4	24
80 A - 150 A	3.2	6.5	3.6	24

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

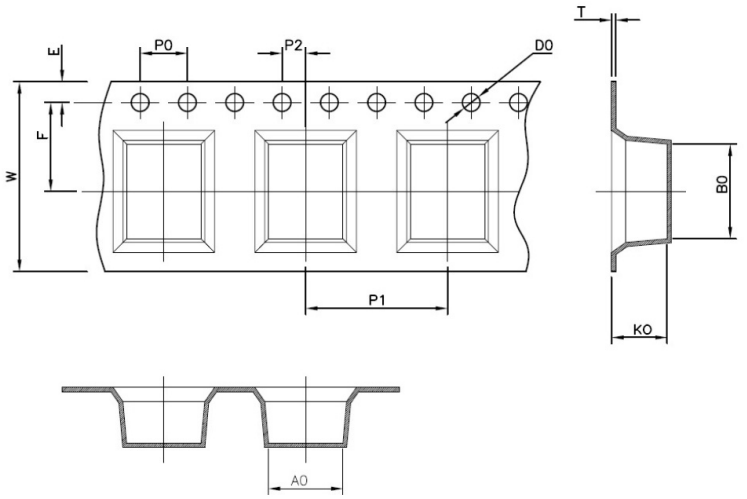
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General specifications

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.
Shelf life: 12 months at +25 +/- 5 °C temperature and 75% RH maximum

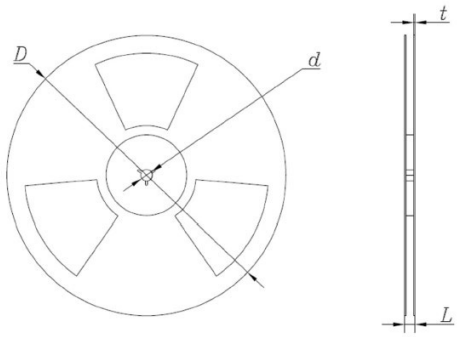
Packaging information - mm

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
P1	12.0
P2	2.0
ØD0	1.50
A0	6.3
B0	8.0
K0	4.7
T	0.35

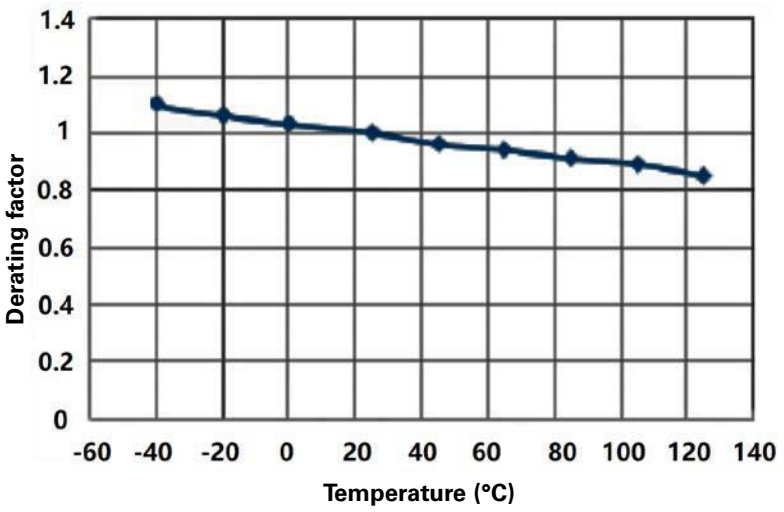
Reel dimension- mm



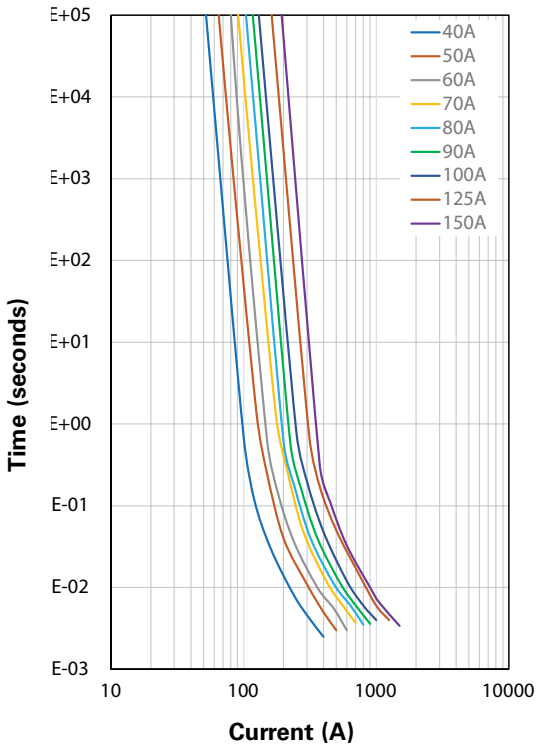
Dimension	millimeter
D	330
d	13
t	2.2
L	21

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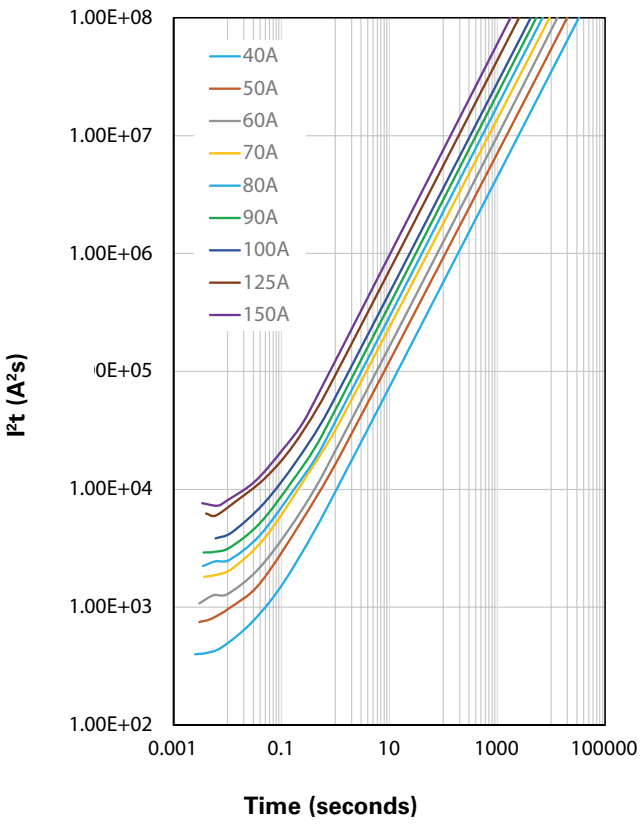
Temperature derating curve



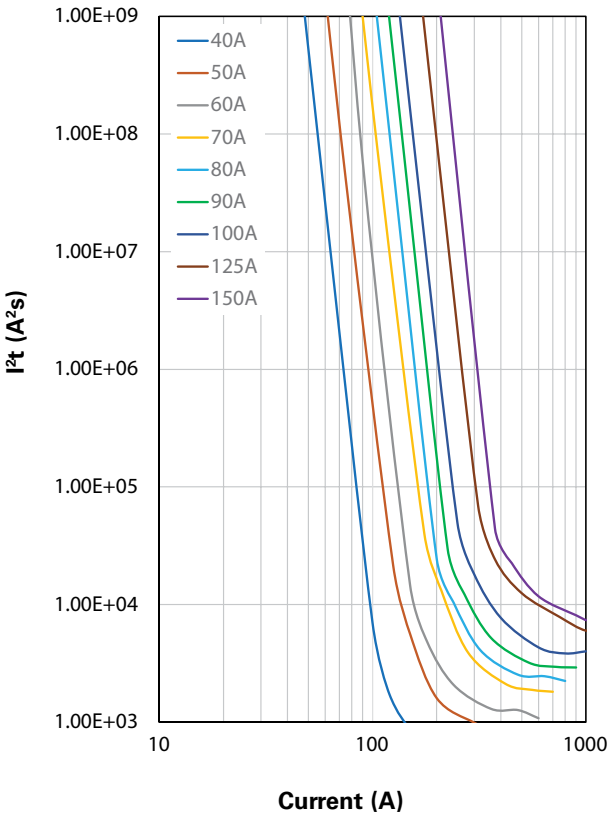
Time vs. current curve



I²t vs. time curve

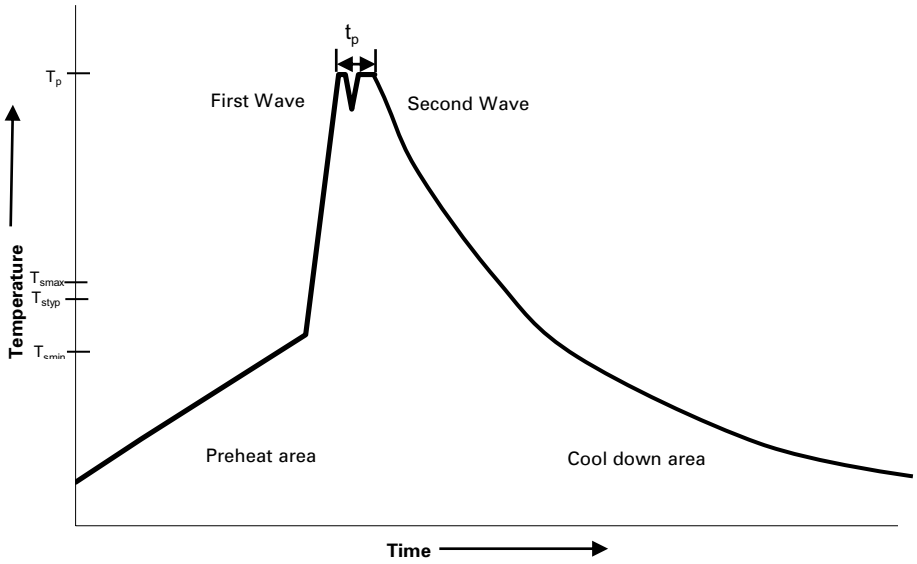


I²t vs. current



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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
Δ preheat to max Temperature		150 °C max.	150 °C max.
Peak temperature (Tp)*		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.

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Solder reflow profile

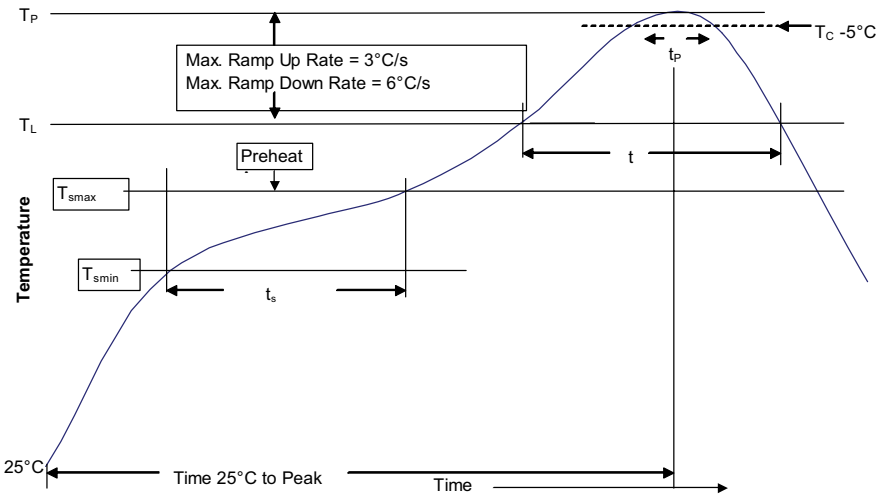


Table 1 - Standard SnPb solder (T_C)

Package thickness	Volume mm3 <350	Volume mm3 ≥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 mm³ <350	Volume mm³ 350 - 2000	Volume mm³ >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	• Temperature min. (T_{smin})	100 °C	150 °C
	• Temperature max. (T_{smax})	150 °C	200 °C
	• Time (T_{smin} to T_{smax}) (t_s)	60-120 seconds	60-120 seconds
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		183 °C 60-150 seconds	217 °C 60-150 seconds
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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