1245HC

Fast-acting high current brick fuse

Product features

- 4818 (1245 metric) size
- Fast-acting high current brick fuse
- Compact design utilizes less board space
- Ceramic tube, silver plated brass end cap construction
- Designed to UL248-1/14
- Moisture sensitivity level (MSL): 1

Applications

Primary and secondary circuit protection:

- Server and desktop power supplies
- Energy storage systems
- E-bikes
- LED and general lighting
- Power distribution units
- Gaming console systems
- Voltage Regulator Module (VRM)
- Point-of-load (POL) protection
- High power battery packs
- Storage system power
- Basic power supplies

Agency information

cURus Recognition file number:
E91958, Guide JFHR2/JFHR8

Environmental compliance

HALOGEN HF FREE

RoHS

Ordering part number

1245HC 60 -R TR

- Family code
- Ampere rating
- RoHS conformity
- Packaging code

Packaging prefix

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

Powering Business Worldwide

Electrical characteristics

Amp Rating	100% In minimum	350% In maximum
60 A ~ 100 A	4 hours	10 seconds

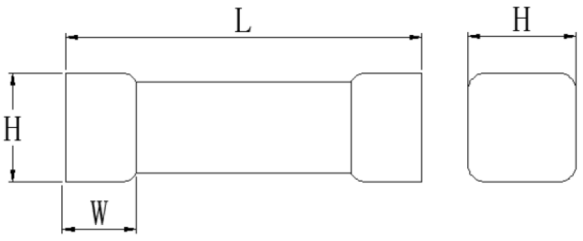
Product specifications

Part number	Current rating (A)	Voltage rating (Vac)	Voltage rating (Vdc)	Interrupting rating @ rated voltage[1,2] (A) Vac	Interrupting rating @ rated voltage[1,2] (A) Vdc	Typical resistance (mΩ)	Typical voltage drop (mV)	Typical pre-arcing[3] I²t (A²s)	Part marking
1245HC60-R	60	125	80[4] 72 63 32	500	1000	0.58	65	950	60 A
1245HC80-R	80	125	72 63 32	500	1000	0.44	60	1700	80 A
1245HC100-R	100	125	72 63 32	500	1000	0.29	55	5000	100 A

1. AC Interrupting rating (Measured at designated voltage, 100% power factor random closing)
2. DC Interrupting rating (Measured at designated voltage, time constant of less than 50 microseconds, battery source)
3. Typical pre-arcing I2t are measured at 10In Current, DC battery bank, but not exceeding the interrupting rating, time constant of calibrated circuit less than 50 microseconds)
4. Internal qualification for 60 A @ 80 Vdc, UL Approval is pending

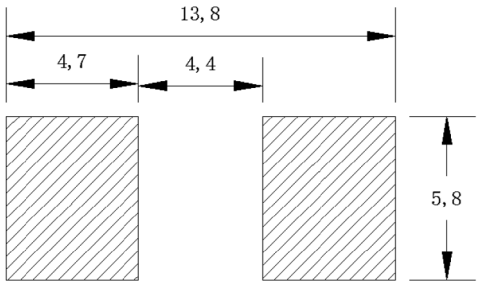
Dimensions- mm

Drawing not to scale



Rating	L	W	H
60 A ~ 100 A	12.30 ± 0.40	2.70 ± 0.20	4.50 ± 0.20

Recommended pad layout



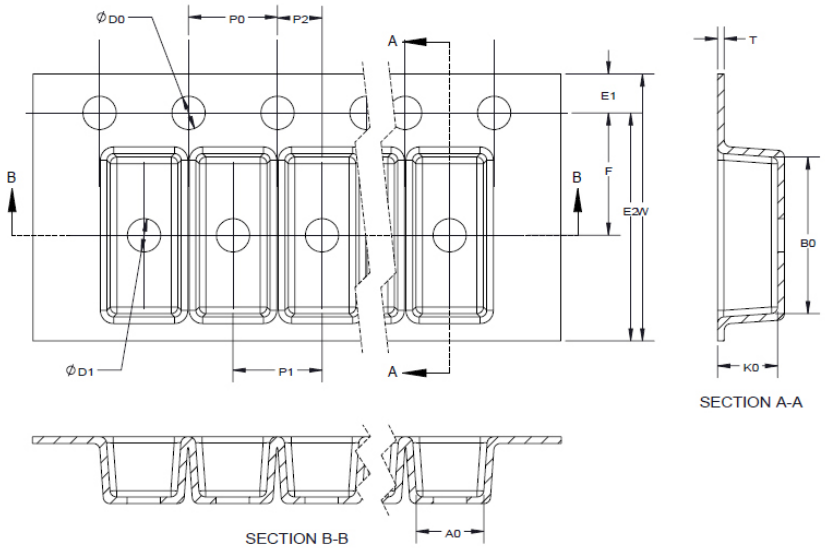
60 A - 70 A: Recommend trace thickness is 3 oz;
the minimum trace width is 22 mm
80 A - 100 A: Recommend trace thickness is 6 oz;
the minimum trace width is 33 mm
Recommended stencil thickness is 0.15 mm

General specifications

Operating temperature: -55 °C to +125 °C with proper derating factor applied
Thermal shock: MIL-STD-202,Method 107G -55 °C/+125 °C. Note: Number of cycles required 100 times
Humidity bias: MIL-STD-202, Method 103 +85 °C/85% RH, 1000 hours
Mechanical shock: Figure 1 of Method 213. Condition C, 100 g, 6 ms
Mechanical vibration: MIL-STD-202G, Method 20, 2 hours each of 3 orientations. Test from 10-55 Hz in 1 minute
Resistance to solder heat: MIL-STD-202G Method 210F, condition D (+260 °C,10 s)
Solderability test: J-STD-002, Method B1 Steam aging 1 hour, Solder temperature +255 ± 5 °C,solder immersion time 5 s
High temperature operating life: MIL-STD-202 Method 108 Condition D, Steady state TA= +70 °C at 60% rated current

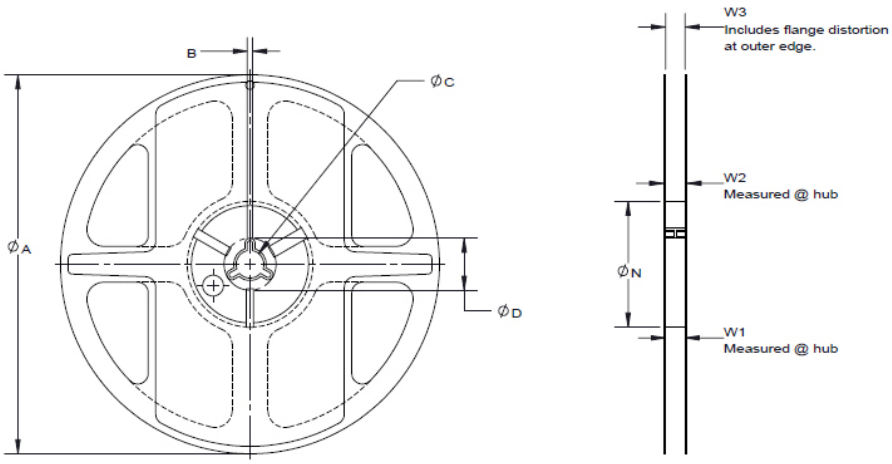
Packaging information - mm

1000 parts per 13" diameter reel



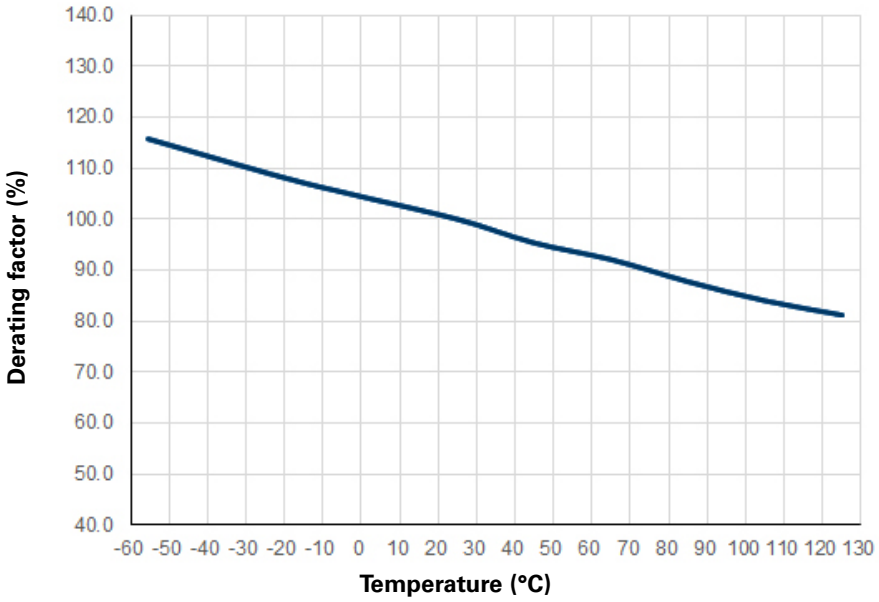
Dimension	millimeter
W	24.00
F	11.50
E1	1.75
E2	N/A
P0	4.00
P1	8.00
P2	2.00
DO	1.50
D1	1.50
A0	4.85
B0	12.75
K0	4.90
T	0.40

Reel dimension- mm

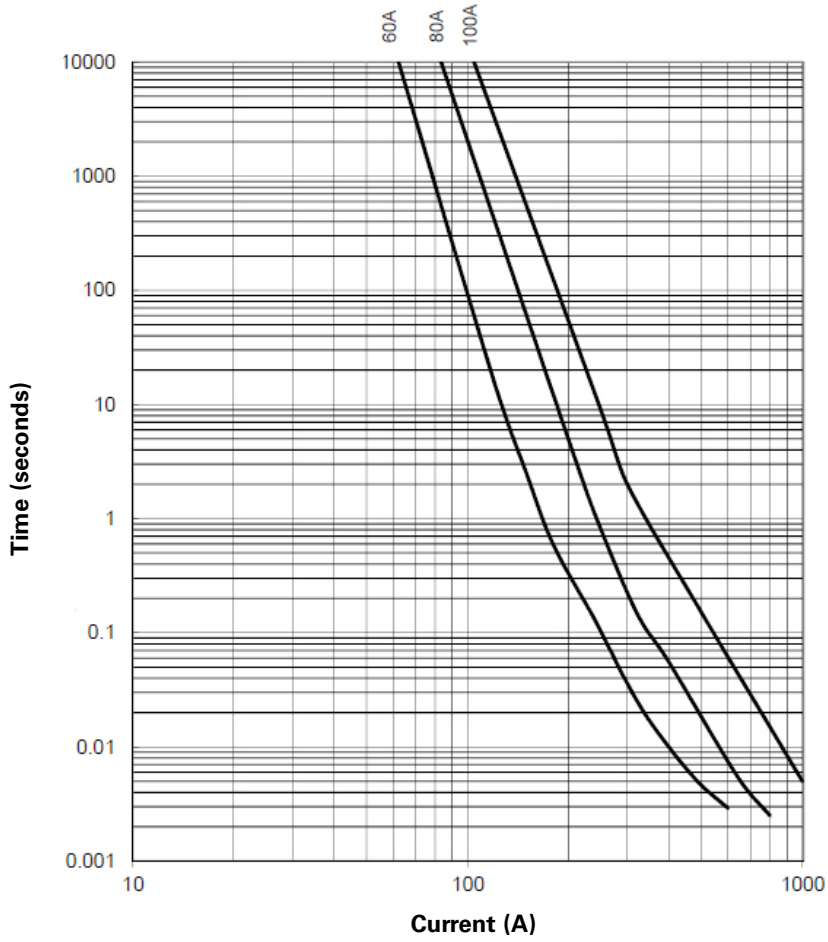


Dimension	millimeter
A	330 ± 1
B	2.5 ± 0.2
C	13.5 ± 0.2
D	N/A
N	100 ± 0.5
W1	24.8 + -.5/-0.5
W2	30.4 max
W3	N/A

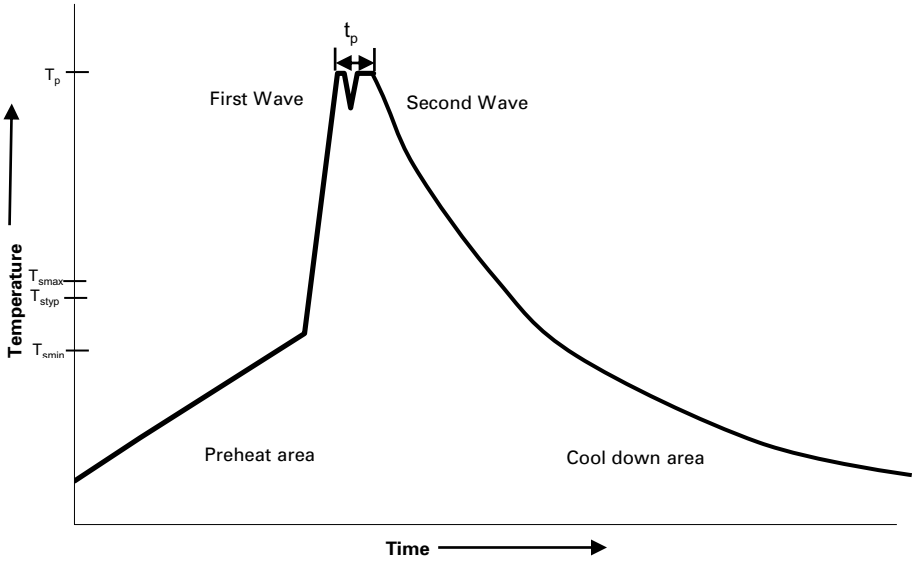
Temperature derating curve



Current vs. time curve



Wave solder profile



Reference EN 61760-1:2006

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 (T_P)*		235 °C – 260 °C	250 °C – 260 °C
Time at peak temperature (t_p)		10 seconds max 5 seconds max each wave	10 seconds max 5 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

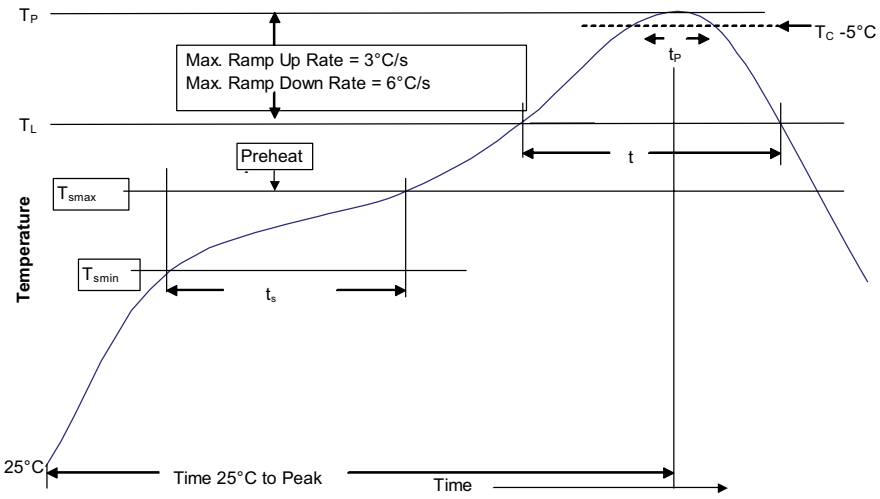


Table 1 - Standard SnPb solder (T_C)

Package thickness	Volume 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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