

# 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



### 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 <sup>1,2</sup>		Typical resistance (mΩ)	Typical voltage drop (mV)	Typical pre-arcing <sup>3</sup> I <sup>2</sup> t (A <sup>2</sup> s)	Part marking
1245HC60-R	60	125	80 <sup>4</sup> 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)

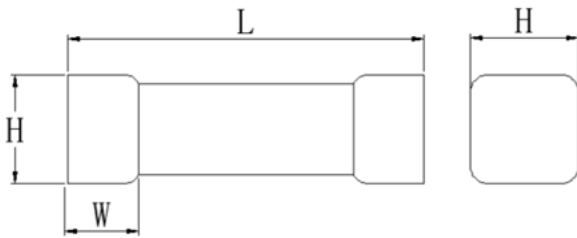
2. DC Interrupting rating (Measured at designated voltage, time constant of less than 50 microseconds, battery source)

3. Typical pre-arcing I<sup>2</sup>t 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

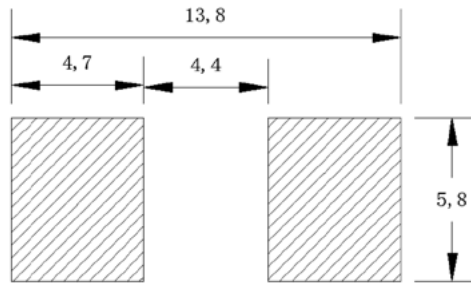
## Dimensions- mm

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

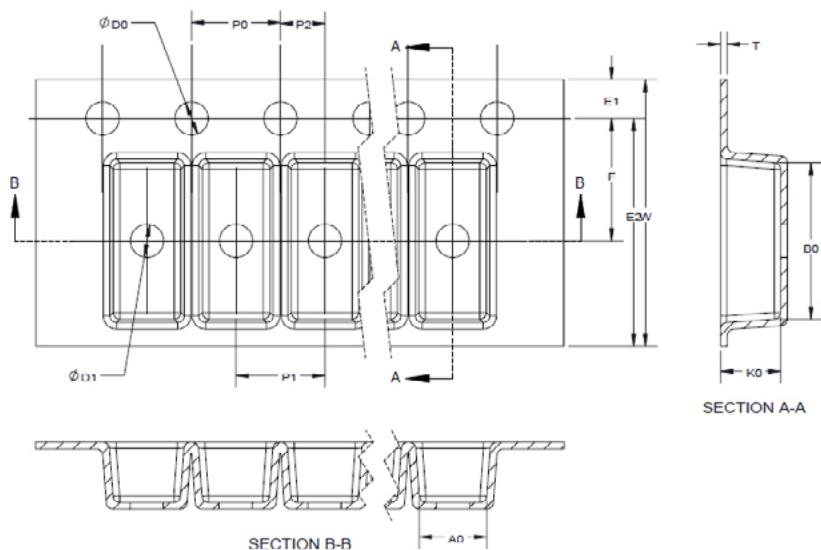
High temperature operating life: MIL-STD-202 Method 108 Condition D, Steady state TA= +70 °C at 60% rated current

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Technical Data ELX1000  
Effective January 2021

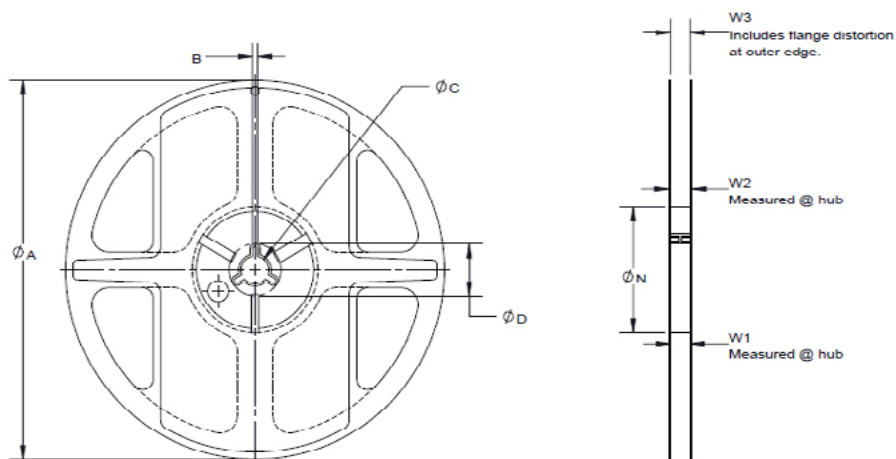
## Packaging information - mm

1000 parts per 13" diameter reel



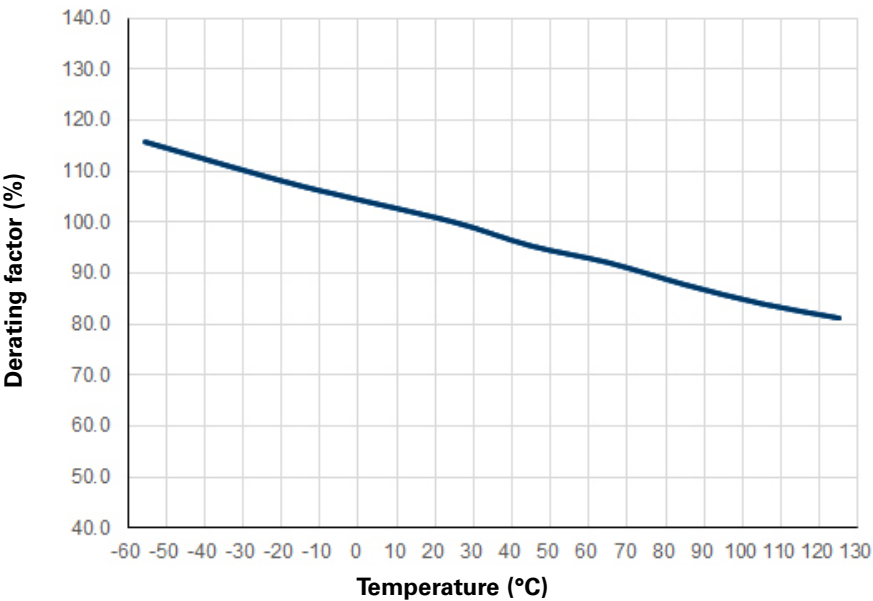
Dimension	millimeter
W	24.00
F	11.50
E1	1.75
E2	N/A
P0	4.00
P1	8.00
P2	2.00
D0	1.50
D1	1.50
A0	4.85
B0	12.75
K0	4.90
T	0.40

## Reel dimension- mm

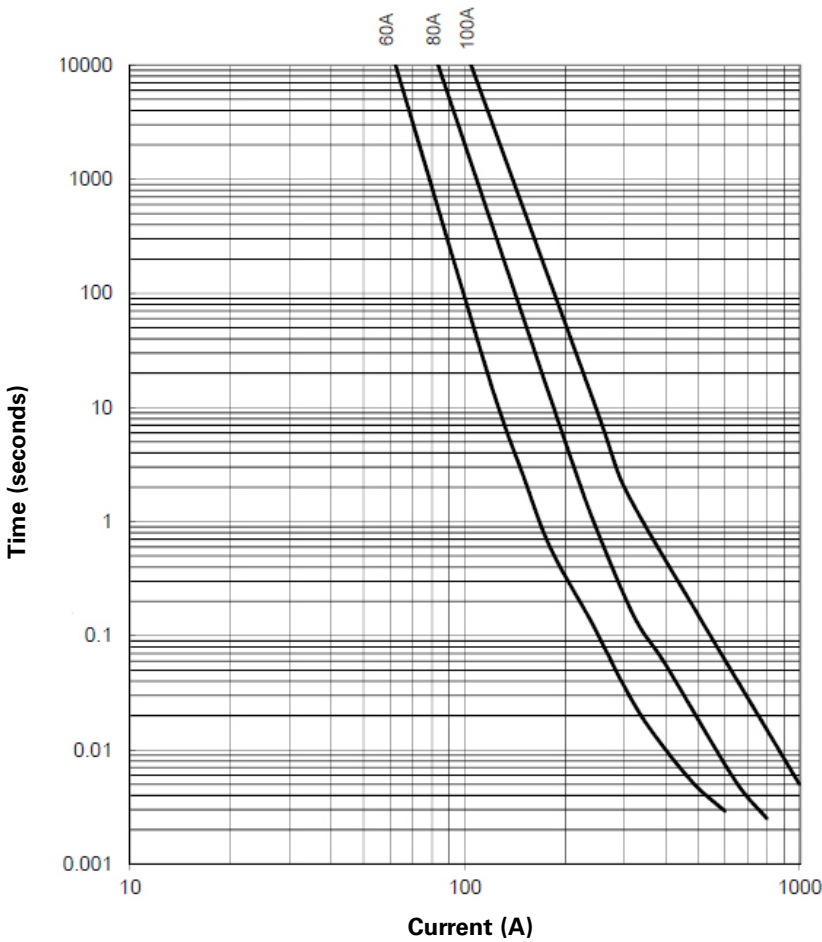


Dimension	millimeter
A	$330 \pm 1$
B	$2.5 \pm 0.2$
C	$13.5 \pm 0.2$
D	N/A
N	$100 \pm 0.5$
W1	$24.8 + .5/-0.5$
W2	30.4 max
W3	N/A

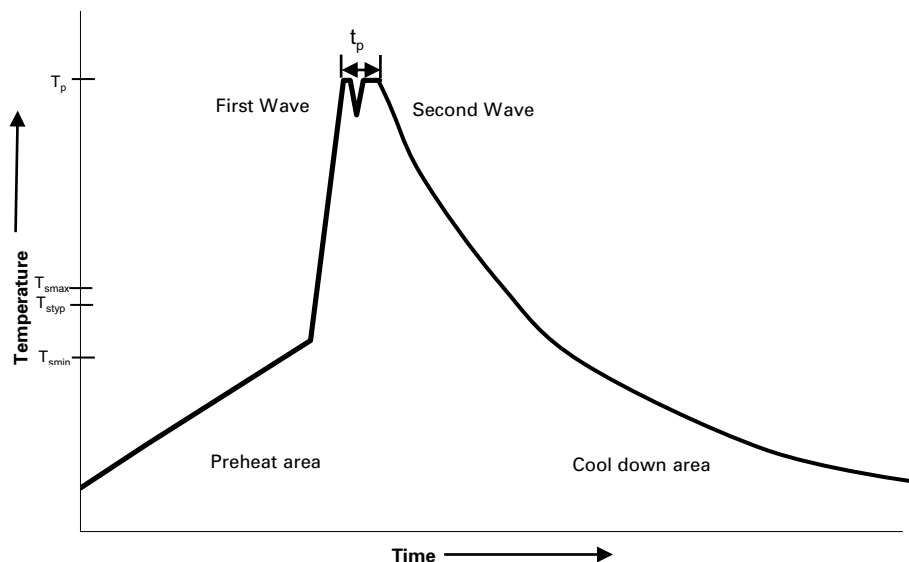
Temperature derating curve



Current vs. time curve



## Wave solder profile



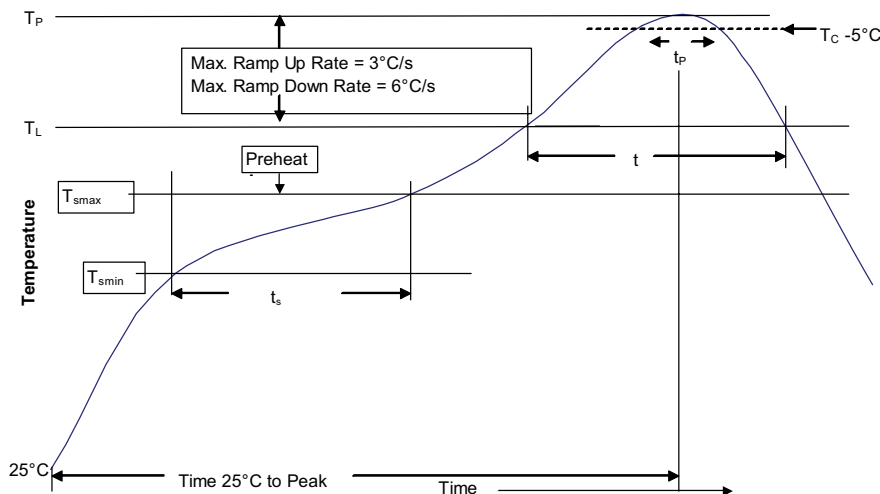
## Reference EN 61760-1:2006

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
$\Delta$ 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 ( $t_p$ )	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 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		
• 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 ( $T_L$ )	183 °C	217 °C
Time ( $t_L$ ) maintained above $T_L$	60-150 seconds	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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