1210HC

High current surface mount brick fuse

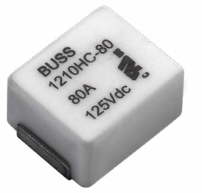


Photo is representative

Product features

- High current rating from 50 A to 200 A for short circuit protection
- Fast-acting
- 12.4 mm x 10 mm x 6.8 mm surface mount package
- High breaking capacity for high power battery systems
- UL recognized according to UL248-1&13
- TUV conforms to IEC 60269-1&7
- Mositure sensitivity level (MSL): 1

Applications

Primary and secondary circuit protection:

- Data center
- Power distribution boards (PDB)
- Server and desktop power supplies
- Energy storage systems
- LED and general lighting
- Gaming console systems
- Storage system power
- Basic power supplies

Agency information

cURus Recognition file number: E56412

TUV: File number: R 50642360 0001 (< 125 A)
R 50642135 0001 (> 150 A)

Environmental compliance

Ordering part number

1210HC 150 - R TR

Family code
Ampere rating
RoHS compliant
Packaging code

Packaging code suffix

TR = tape and reel

Powering Business Worldwide

Electrical characteristics

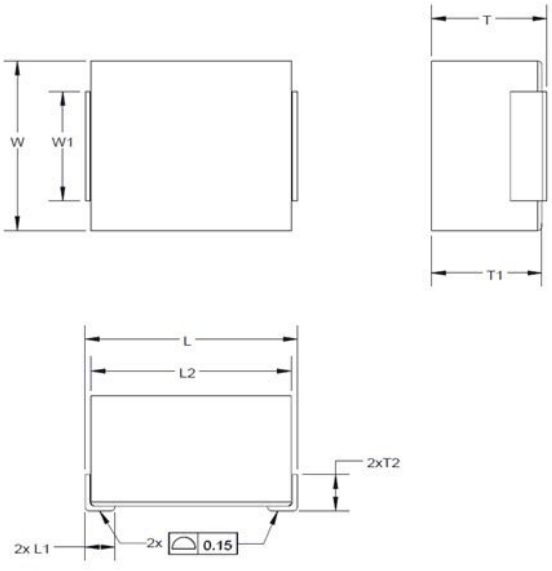
	Opening time	
Current rating	**1.0 In**	**2.5 In**
50 A - 200 A	4 hours minimum	10 seconds maximum

Product specifications

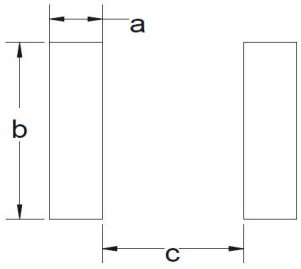
Part number	Current rating (A)	Voltage rating (V)	Breaking capacity (A)	Typical cold resistance[1] (mΩ)	Resistance tolerance	Typical voltage drop[2] (mV)	Typical pre-melting[3] I^2t (A^2Sec)
1210HC50-RTR	50	125 Vdc 100 Vdc	6 kA @ 100 Vdc (TUV certified) 3 kA @ 125 Vdc (UL certified) 10 kA @ 80 Vdc (UL certified)	1.02	± 35%	79	925
1210HC60-RTR	60	125 Vdc 100 Vdc		0.81	± 35%	73	1575
1210HC70-RTR	70	125 Vdc 100 Vdc		0.65	± 35%	70	1750
1210HC80-RTR	80	125 Vdc 100 Vdc		0.58	± 35%	70	3920
1210HC100-RTR	100	125 Vdc 100 Vdc		0.47	± 35%	79	6410
1210HC125-RTR	125	125 Vdc 100 Vdc		0.35	± 35%	70	16450
1210HC150-RTR	150	100 Vdc 75 Vdc	3 kA @ 100 Vdc 10 kA @ 75 Vdc (TUV certified) 10 kA @ 80 Vdc (UL certified)	0.30	± 50%	73	19000
1210HC175-RTR	175	100 Vdc 75 Vdc		0.27	± 50%	74	25700
1210HC200-RTR	200	100 Vdc 75 Vdc		0.24	± 50%	78	40000

1. Cold resistance is measured at <10% rated current
2. Typical voltage drop is measured at rated current
3. Typical pre-melting I^2t is measured at 10 In

Dimensions - mm



Recommended layout - mm



A	3.0
B	10.0
C	8.0

*Above land pattern is recommended for reflow soldering;
Recommended stencil thickness: 0.15 mm
Recommend 5 mm^2 minimum trace for 70 A and below.
Recommend 7 mm^2 minimum trace for 80 A to 125 A.
Recommend 17 mm^2 minimum trace for 150 A and above.

Amp rating	L	W	T	L1	L2	W1	T1	T2
50 A - 200 A	12.4 ±0.5	10.0 ±0.2	6.8 +0.3/-0.1	1.6 ±0.2	11.8 ±0.2	6.3 ±0.2	6.5 ±0.2	2.3 ±0.5

Marking requirements

1210HC50-R	1210HC60-R	1210HC70-R	1210HC80-R	1210HC100-R
BUSS 1210HC-50 50 A 125 Vdc	BUSS 1210HC-60 60 A 125 Vdc	BUSS 1210HC-70 70 A 125 Vdc	BUSS 1210HC-80 80 A 125 Vdc	BUSS 1210HC-80 100 A 125 Vdc

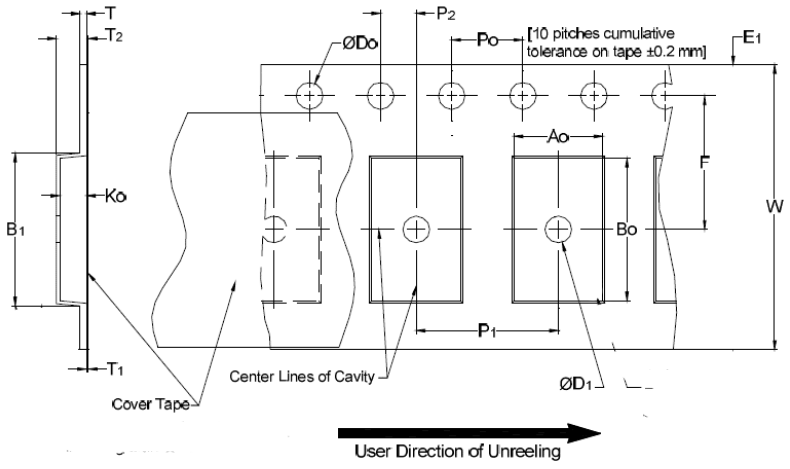
1210HC125-R	1210HC150-R	1210HC175-R	1210HC200-R
BUSS 1210HC-125 125 A 125 Vdc	BUSS 1210HC-150 150 A 100 Vdc	BUSS 1210HC-175 175 A 100 Vdc	BUSS 1210HC-200 200 A 100 Vdc

General specifications

Operating temperature: -40 °C to +105 °C with proper correction factor applied
Temperature and humidity cycling: JASO D622, 10 cycles
Temperature cycling: -40 °C to +125 °C, 1000 cycles
Humidty bias: MIL-STD-202, method 103, 10% In, 85% +85 °C, 1000 hours
Resistance to solvents: MIL-STD-202, method 215
Vibration: MIL-STD-202, method 204, 5g 20 minutes, 12 cycles
Mechanical shock: MIL-STD-202, method 213, test condition C (100 g's peak for 6 milliseconds)
Board flex: AEC-Q200-005
Terminal strength (SMD): AEC-Q200-006
Resistance to solder heat: MIL-STD-202, method 210
Solderability: MIL-STD-202, method 208
Salty spray: MIL-STD-202 method 101 test condition B, (5% NaCL solution, 48 hours exposure)
High temperature operating life: +105 °C, 0.5 In, 1000 hours
Shelf life: 3 years @ +25 ±-5 °C, 50%RH maximum in the original packaging

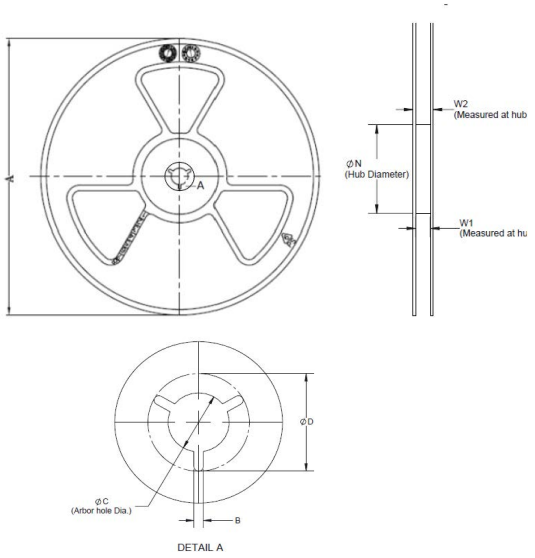
Packaging information - mm

500 pieces per reel, 5 reels (2500 pieces) in the carton



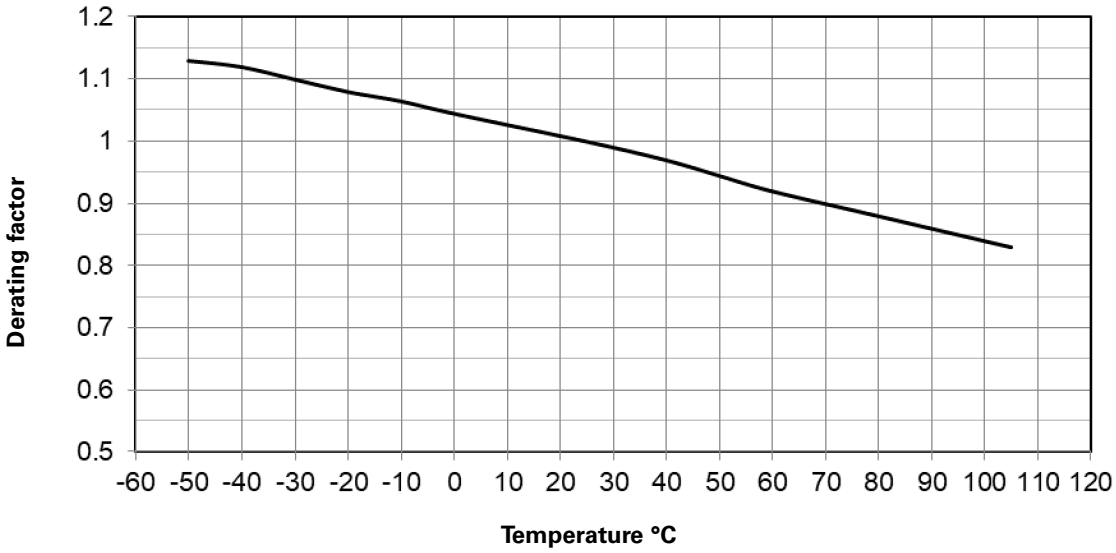
Dimension	Millimeter
W ± 0.30	24.0
F	11.5
E1 ± 0.10	1.75
P0 ± 0.10	4.00
P1 ± 0.10	16.0
P2	2.0
D0 + 0.10/-0	1.50
D1 Minimum	1.50
A0 ± 0.10	10.5
B0 ± 0.10	13.0
B1 Maximum	15.8
K0 ± 0.10	7.30
T Maximum	0.60
T1 Maximum	0.10
T2 Maximum	8.00

Reel dimension - mm

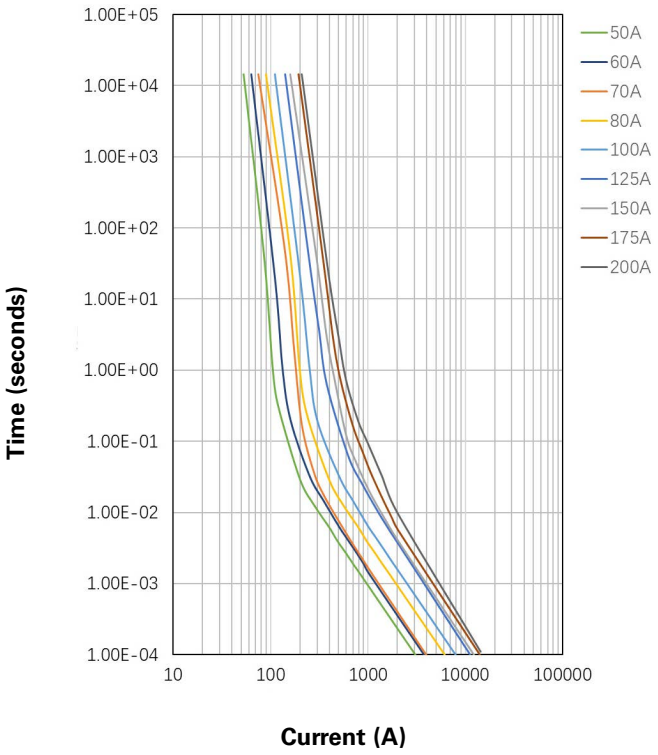


Dimension	Millimeter
A	330
B	2.50
C	13.5
D	21.5
N	100
W1	24.8
W2	29.0

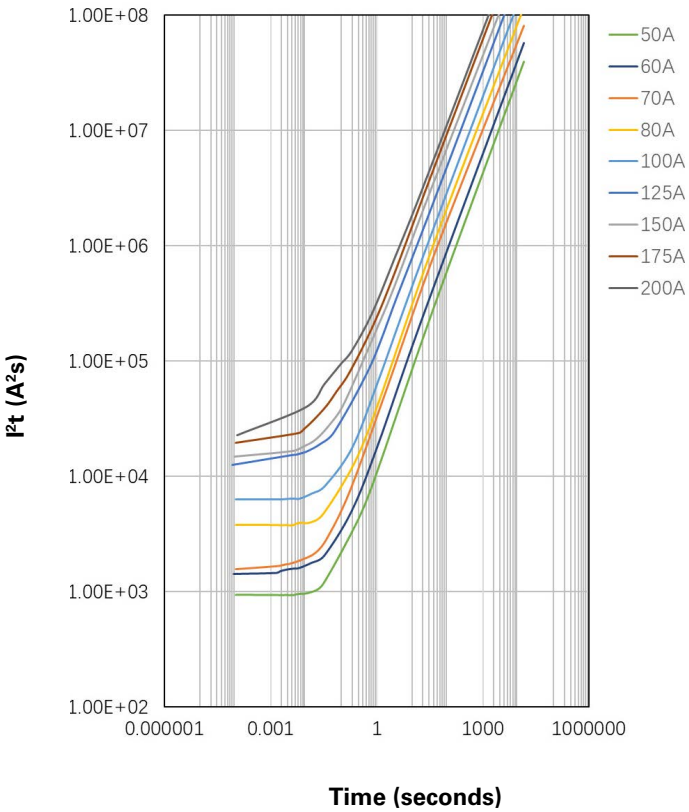
Temperature derating curve



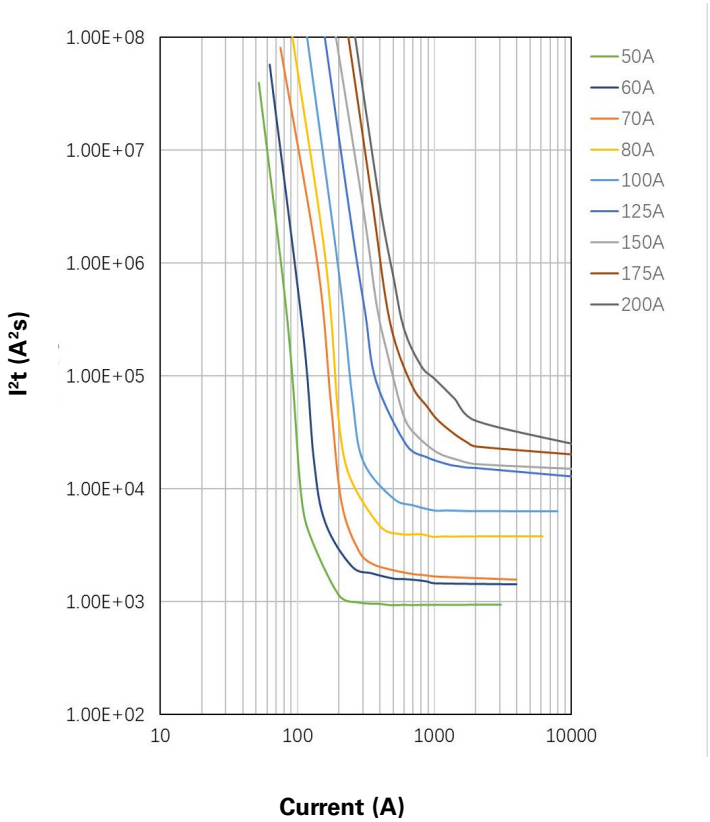
Time vs. current curves



I²t vs. time curve



I²t vs. current curve



Reflow soldering characteristics

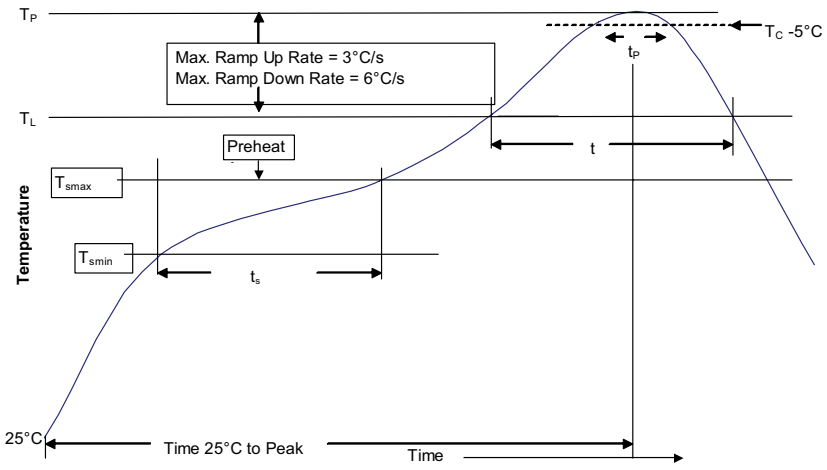


Table 1 - Standard SnPb solder (T_C)

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 minimum (T_{smin})	100 °C	150 °C
	• Temperature maximum (T_{smax})	150 °C	200 °C
	• Time (T_{smin} to T_{smax}) (t_s)	60-120 seconds	60 to120 seconds
Ramp up rate T_L to T_p		3 °C/ second maximum	3 °C/ second maximum
Liquidous temperature (T_L) Time (t_L) maintained above T_L		183 °C 60 to 150 seconds	217 °C 60 to 150 seconds
Peak package body temperature (T_p)*		See Table 1	See 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 maximum	6 °C/ second maximum
Time 25 °C to peak temperature		6 minutes maximum	8 minutes maximum

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

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