2410FA

High current fast-acting SMT Brick fuse

Product features

- 2410 (6125 metric) surface mount package
- Fast acting
- Designed to UL248
- Current rating: 500 mA to 15 A
- Moisture sensitivity level: (MSL): 1

Applications

- Power supplies
- Servers
- LED lighting drivers
- Appliances and white goods
- LCD monitor/backlight inverters
- Vac chip-on-board (COB) lighting
- Industrial electronics and computing

Agency information

cURus Recognition file number: E19180

Environmental compliance

Ordering part number

TR1- 2410FA 2-5 -R

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

Packaging prefix

TR1-(1000 parts on a 7" diameter tape and reel)

Powering Business Worldwide

Electrical characteristics

Amp rating	% of Amp rating	Opening time
500 mA to 15 A	100	4 hours minimum
500 mA to 15 A	200	5 seconds maximum

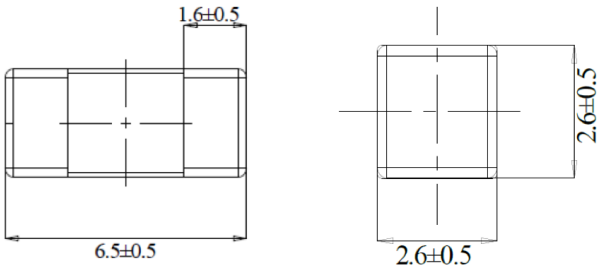
Product specifications

Part number	Current rating (A)	Voltage rating (Vac)	Voltage rating (Vdc)	Interrupting rating[1] at rated voltage (A) (Vac)	Interrupting rating[1] at rated voltage (A) (Vdc)	Typical DC cold resistance[2] (mΩ)	Typical voltage drop (mV)	Part marking
2410FA500-R	0.5	125	125	50	50	281	185	.500
2410FA800-R	0.8	125	125	50	50	137	150	.800
2410FA1-R	1	125	125	50	50	105	140	.1
2410FA1-5-R	1.5	125	125	50	50	62	125	.1.5
2410FA2-R	2	125	125	50	50	27	96	.2
2410FA2-5-R	2.5	125	125	50	50	18.2	60	.2.5
2410FA3-R	3	125	125	50	50	17.8	86	.3
2410FA4-R	4	125	125	50	50	12.9	85	.4
2410FA5-R	5	125	125	50	50	10.2	81	.5
2410FA6-3-R	6.3	125	125	50	50	7.7	80	.6.3
2410FA7-R	7	125	125	50	50	7.2	80	.7
2410FA8-R	8	125	125	50	50	6.3	78	.8
2410FA10-R	10	125	125	50	50	5.1	77	.10
2410FA12-R	12	125	125	50	50	3.95	76	.12
2410FA15-R	15	125	125	50	50	3.15	75	.15

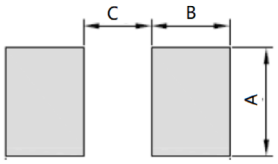
1. AC Interrupting Rating (measured at designated voltage, 100% power factor); DC Interrupting Rating (measured at designated voltage, time constant of less than 50 microseconds, battery source)
2. DC Cold Resistance measured at <10% of rated current in the ambient temperature of +25 °C

Dimensions- mm

Drawing not to scale



Recommended pad layout



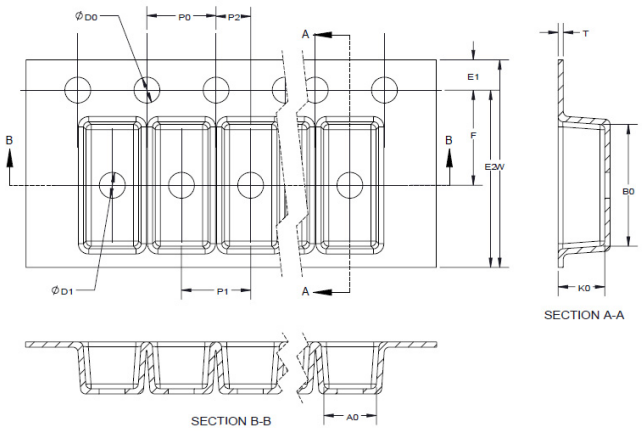
Ratings	A	B	C	Minimum copper layer thickness
7 A and below	4.0	3.0	2.6	35 µm
8 A to 10 A	4.0	3.0	2.6	70 µm
12 A to 15 A	4.0	3.76	2.6	70 µm

General specifications

Operating temperature: -55 °C to +125 °C with proper derating factor applied
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 107G, -55 °C/+125 °C. 100 cycles
Humidity bias: MIL-STD-202 method 103, 1000 hours +85 °C/85% RH
Vibration: MIL-STD-202G 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

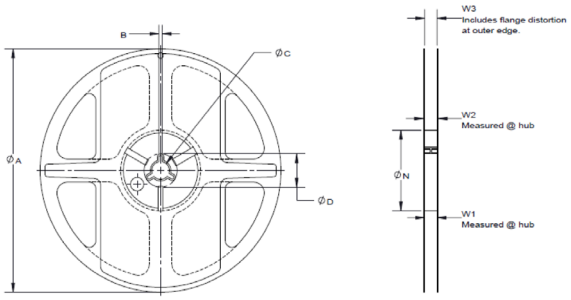
Packaging information - mm

1000 parts per 7" diameter reel (EIA-481 compliant)
Drawing not to scale



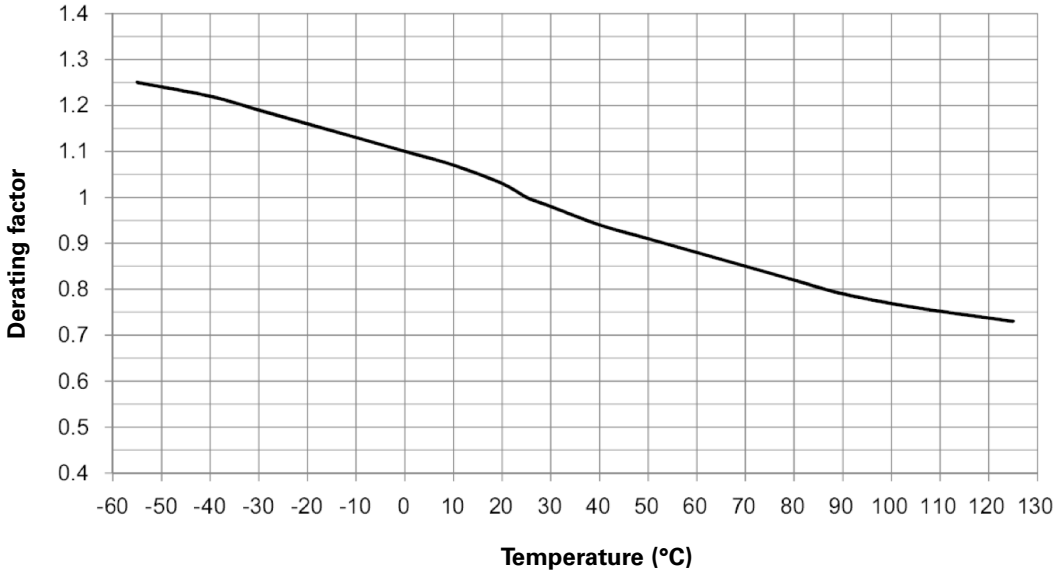
Dimension	millimeter
W	12.00
F	5.50
E1	1.75
E2	N/A
P0	4.00
P1	4.00
P2	2.00
D0	1.50
D1	1.50
A0	3.00
B0	7.00
K0	3.00
T	0.30

Reel dimension- mm

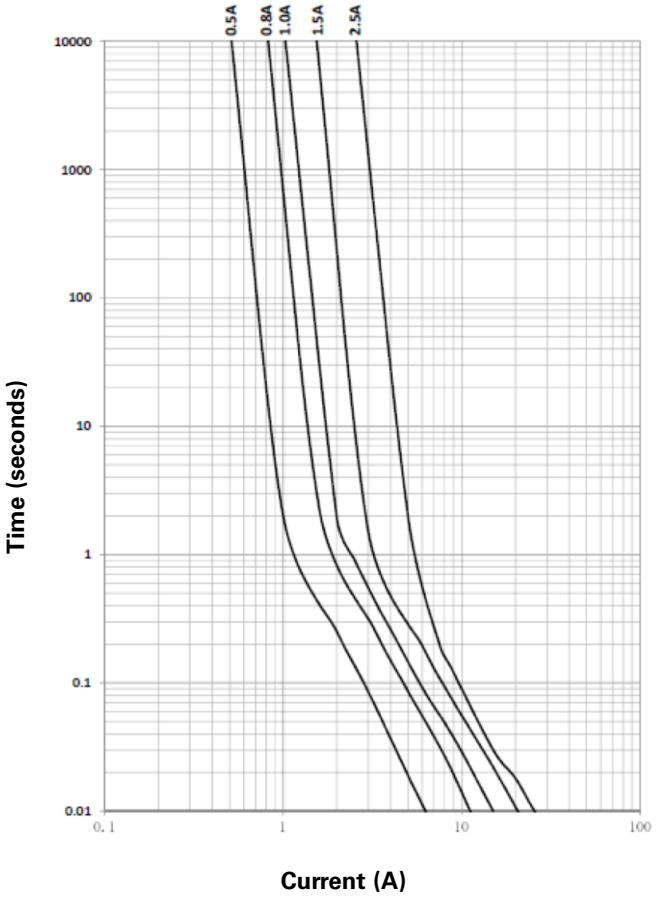


Dimension	millimeter
A	178.0 ± 2.0
B	3.0 ± 0.3
C	13.7 + 0.5/-0.2
D	N/A
N	60 + 0.5/-0
W1	13 + 2.0/-0
W2	18.4 maximum
W3	N/A

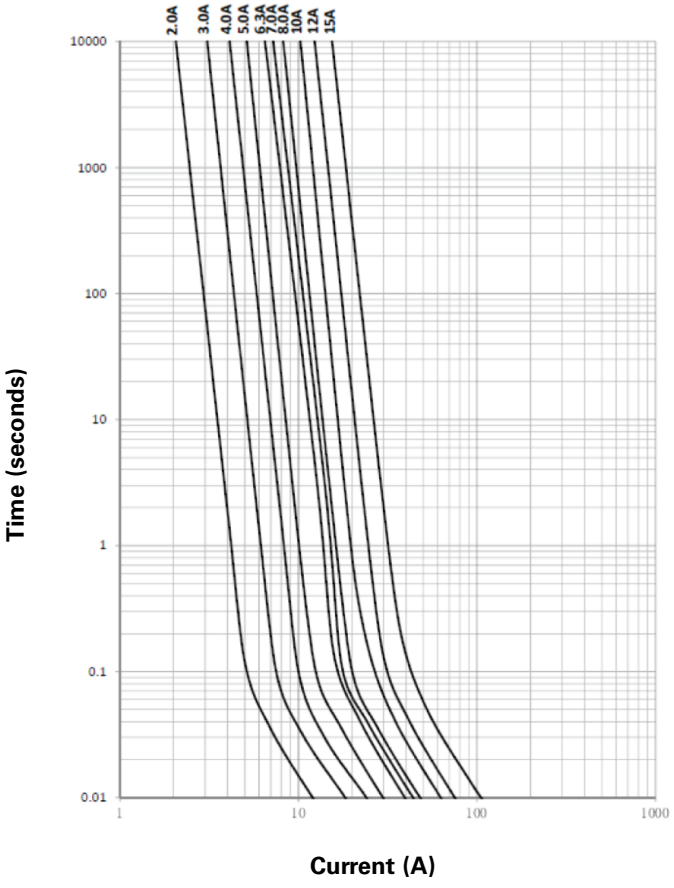
Temperature derating curve



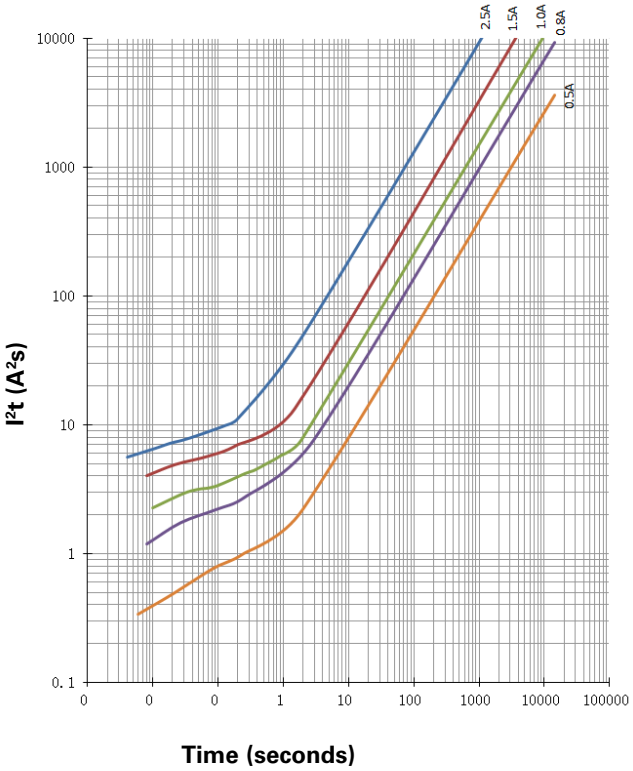
Current vs. time curve
0.5 A to 1.5 A and 2.5 A



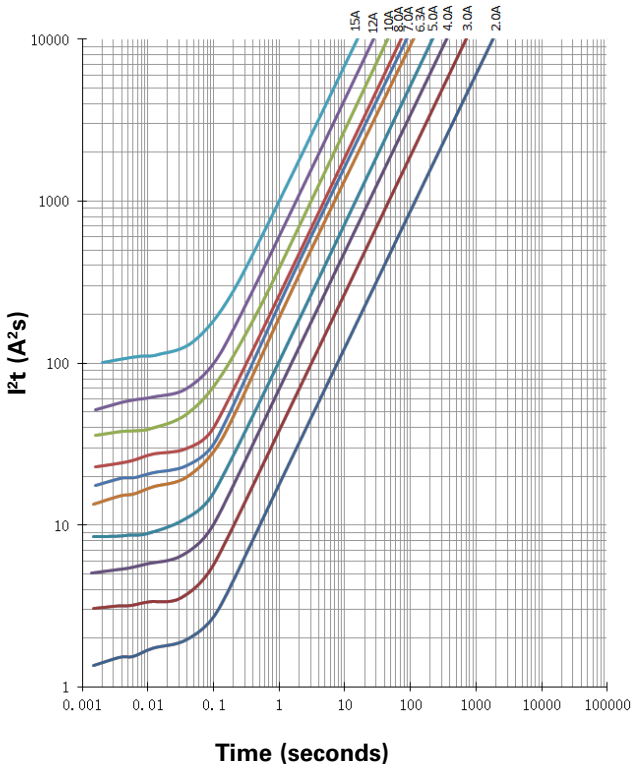
Current vs. time curve
2 A and 3 A and 4 A to 15 A



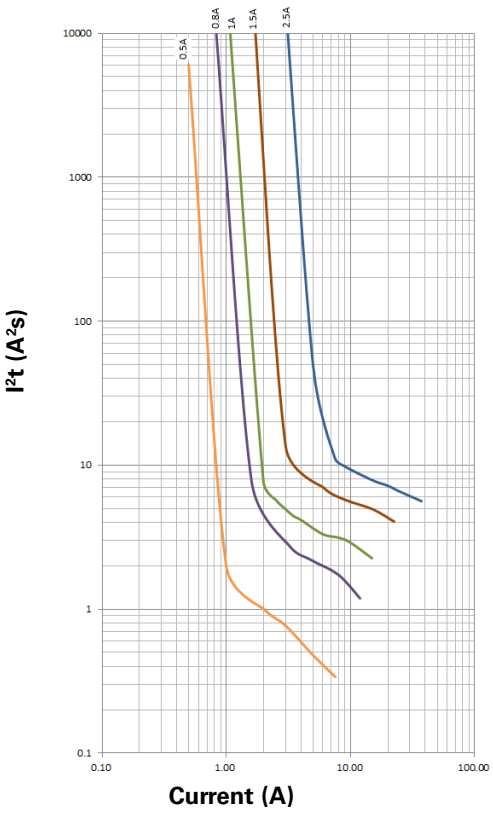
I2t vs. time curve
0.5 A to 1.5 A and 2.5 A



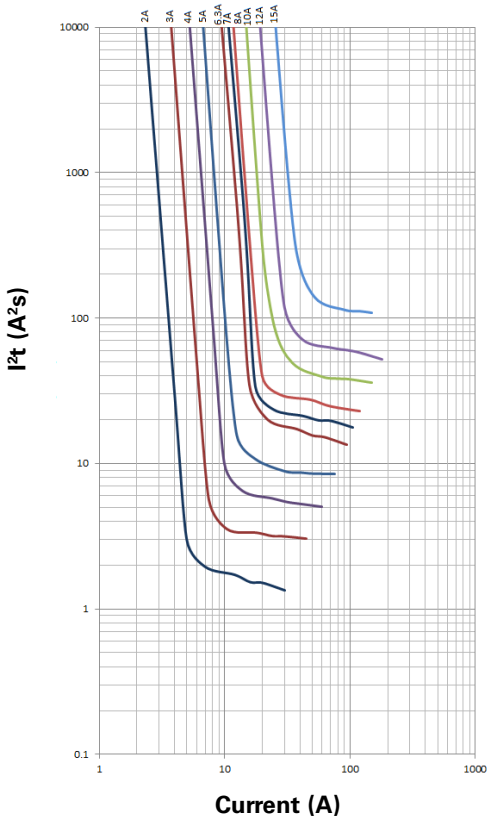
I2t vs time curve
2 A and 3 A and 4 A to 15 A



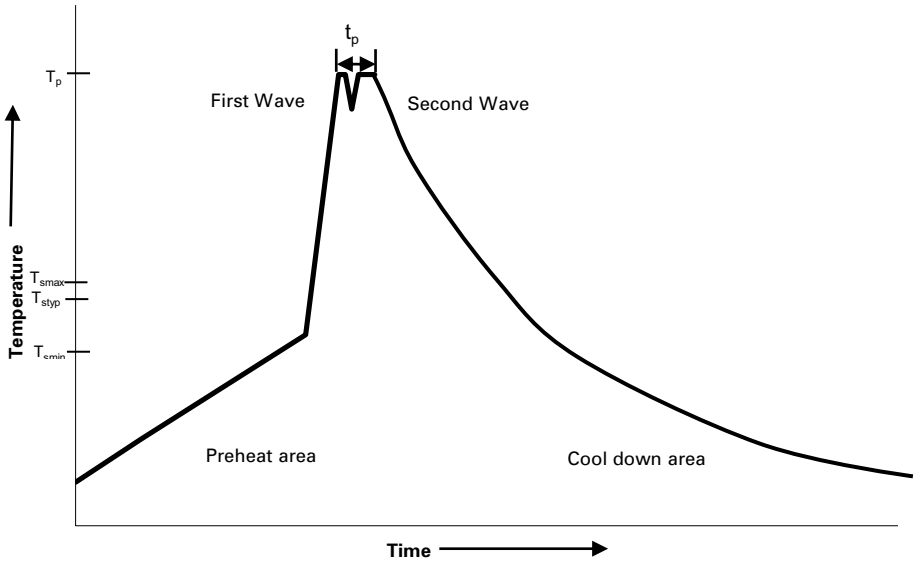
I2t vs. current curve
0.5 A to 1.5 A and 2.5 A



I2t vs current curve
2 A and 3 A and 4 A to 15 A



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 (Tp)*		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

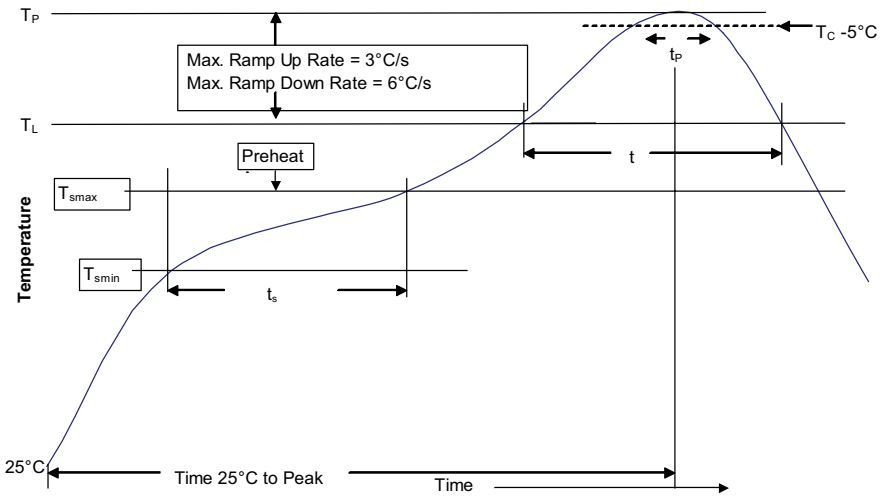


Table 1 - Standard SnPb solder (T_C)

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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