

**PRODUCT
DATASHEET**



SMFF2410P3000 Surface Mount Fuses Devices

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Description

Polytronics SMFF2410 series square shape surface mount fast-acting fuses adopt Wire-in-Air (WIR) construction. Small footprint with wide range of available current rating makes the fuse ideal for over-current protection applications, in both AC and DC circuits using surface mount technology. SMFF2410 series is also RoHS compliant and halogen-free to meet global environmental standard.




Features

- Fast acting, inrush withstand capability
- Wire-In-Air performance
- Wide operating temperature rang
- Wide range of current rating available
- Higher temperature profiles
- Excellent environmental integrity

Application

- Battery pack
- Medical device
- Digital cameras
- Game equipment
- LCD monitor and modules
- PC related equipment / peripherals
- Power supply
- Wireless base station

Agency Approval

Agency	File Number
	Pending

Electrical Characteristics

Part Number	Marking	Current Rating (A)	Voltage Rating	Interrupting Rating	Typical Cold DCR† (mΩ)	Nominal Melting I ² T‡ (A ² S)
SMFF2410P3000	30	30	72V	150A/72V DC	1.4	390

† Measured at ≤10% rated current and 25°C

‡ Melting I²T at 10 times of rated current

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Electrical Specification

Ampere Rating	% of Current Rating	Opening Time
30A	100%	4 Hours Min.
	250%	10 Seconds Max.

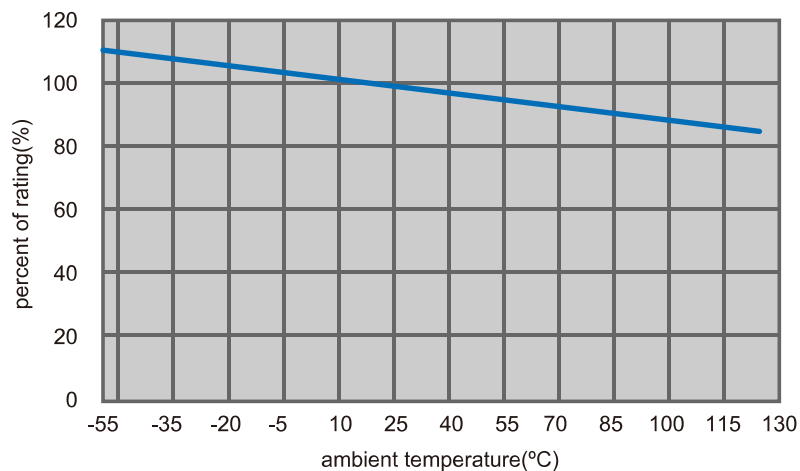
Physical Specifications

Materials	Substrate: Ceramic Terminations: Au Plated Brass Cap Element: Copper Alloy
Solderability	MIL-STD-202
Soldering Parameters	Wave Solder: 260 °C, 10 seconds max. Reflow Solder: 260 °C, 5 seconds max. Hand Solder: 300 °C, 2 seconds max.

Environmental Specifications

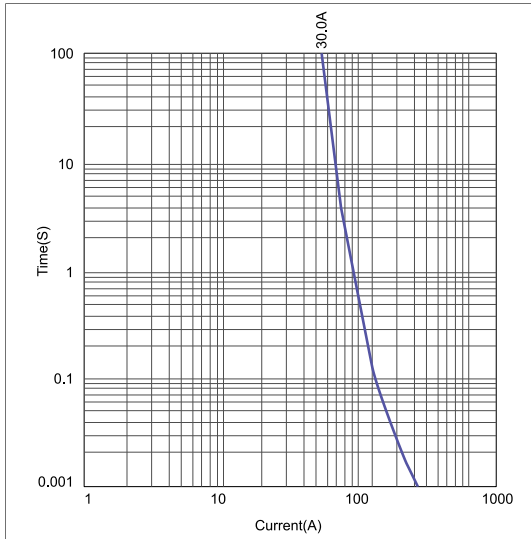
Operating Temperature	-55°C to 125 °C
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Thermal Derating Curve

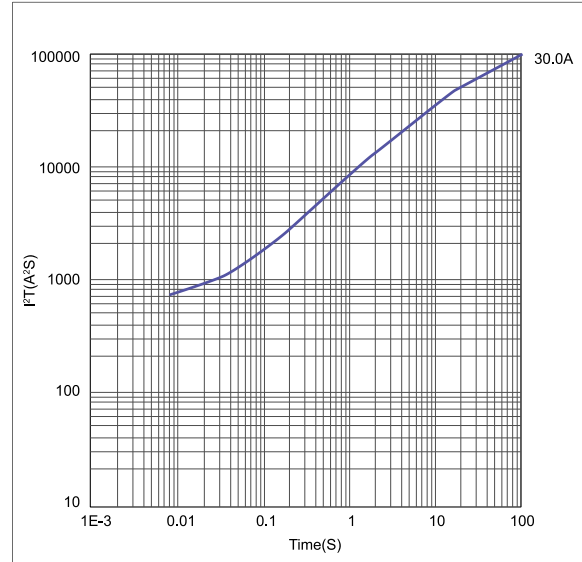


SMFF2410P3000 Surface Mount Fuses Devices

Time-Current Curve



I²T vs Time Curve



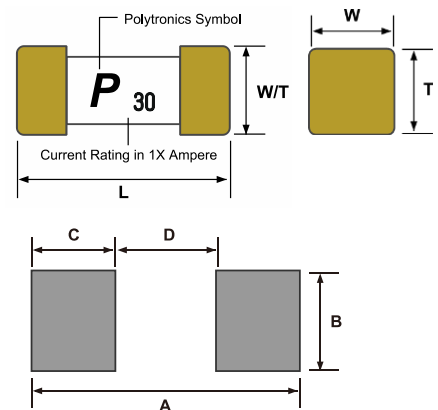
Physical Dimensions (mm.)

Dimensions (mm)

L	W	T	D
6.10±0.20	2.5±0.10	2.5±0.10	1.4±0.10

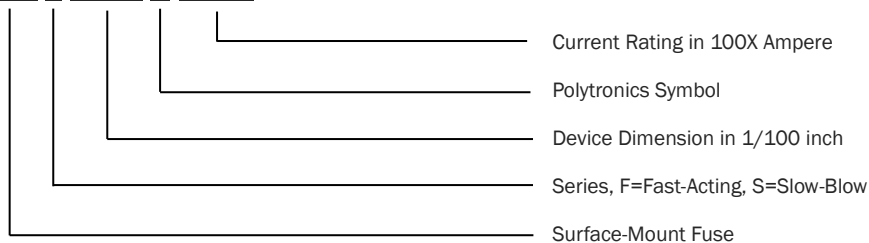
Recommended Solder Pad Dimension (mm)

A	B	C	D
8.0±0.3	3.0±0.3	2.5±0.3	3.0±0.3



Part Number

SMF F 2410 P 3000



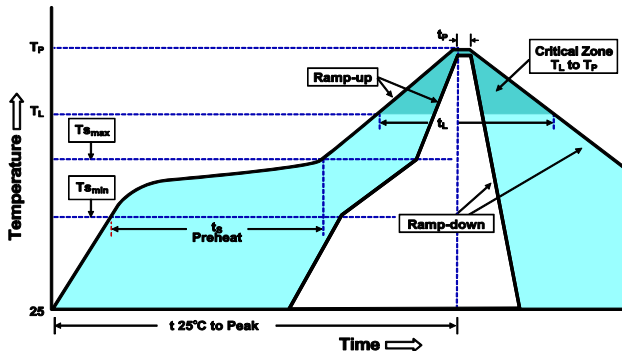
SMFF2410P3000 Surface Mount Fuses Devices

Reliability Test

Characteristics	Test condition / Methods	Requirement	Test Reference
Time/Current	100% In	No Fusing; 4hours min.	UL248-14
	250% In	< 10 seconds	Refer to Spec
	1000% In	> 3ms	IEC60127-4
Voltage Drop	100% In	< 90mV	IEC 60127-4
Endurance Test	100% In for 4h, then testing Temperature rise	ΔR : <10% < 105°C.	UL248-14
Interrupting Ability	150A@72V DC	Without permanent arcing, ignition, and bursting of fuse link	UL 248-14 IEC60127-4
Solderability	240°C \pm 5°C, 3sec \pm 0.5sec	95% coverage min	IEC 60127-4 IEC 60068-2-20 MIL-STD-202
Resistance to Soldering	260°C \pm 5°C, 10sec \pm 0.5sec	ΔR : <10%	MIL-STD-202 Method210
High Temperature Operating Life	96 hours, 70°C \pm 2°C at 0.6 In.	ΔR : <10%	MIL-STD-202 Method 108
Humidity (Steady State)	1000 hours at 40°C \pm 2°C 90~95%RH	ΔR : <10%	MIL-STD-202 Method 103
Low Temperature Storage	96 hours at -55°C \pm 3°C.	ΔR : <10%	IEC60068-2-1
High temperature Storage	96 hours at 125°C \pm 2°C.	ΔR : <10%	IEC60068-2-2
Salt Spray	5% salt solution, 48 hours	ΔR : <10%	MIL-STD-202 Method 101
Thermal Shock	100 cycles between -65°C /+125°C 60 minutes at each extreme zone	ΔR : < (10%R+0.005 Ω)	IEC60068-2-14

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Soldering Parameters



Average Ramp-Up Rate ($T_{s_{max}}$ to T_P)	3°C/second max.
Preheat	
-Temperature Min ($T_{s_{min}}$)	150°C
-Temperature Max ($T_{s_{max}}$)	200°C
-Time ($T_{s_{min}}$ to $T_{s_{max}}$)	60-120 seconds
Time maintained above:	
-Temperature (T_L)	217°C
-Time (t_L)	20-40 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_p)	5 seconds
Ramp-Down Rate	6°C /second max.
Time 25°C to Peak Temperature	8 minutes max.

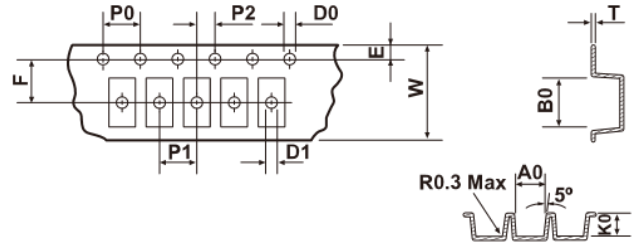
Note 1: All temperature refer to topside of the package, measured on the package body surface.

Note 2: If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

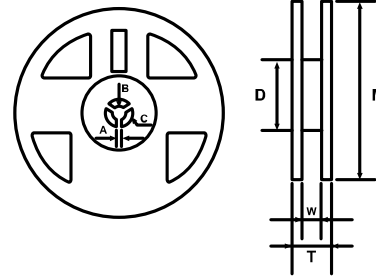
Packaging Quantity

Part Number	Tape & Reel Quantity
SMFF2410P3000	1000

Tape & Reel Specification (mm.)



A0	2.70 ± 0.10	E	1.75 ± 0.10
B0	6.40 ± 0.10	F	5.50 ± 0.10
K0	2.70 ± 0.10	D0	∅ 1.50 ± 0.10
P0	4.00 ± 0.10	D1	1.50 ± 0.25
P1	4.00 ± 0.10	W	12.00 ± 0.15
P2	2.00 ± 0.10	T	0.25 ± 0.05



M	∅ 178.0 ± 2.0
W	12.5 ± 1.0
T	14.5 ± 1.5
A	2.0 ± 0.5
B	∅ 13.0 ± 0.5
C	∅ 21.0 ± 0.5
D	∅ 58.0 ± 2.0