



SEA & LAND ELECTRONIC CORP.

www.sealand-pptc.com

ALPHA-TOP TECHNOLOGY CORP.

APPROVAL SHEET

MODEL NO.:

SMD0603-002

CUSTOMER:

CUSTOMER'S APPROVAL:

AUTHORIZED SIGNATURE/STAMP:

DATE

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Approved by:

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DATE:

1-Jun-22

SEA & LAND ELECTRONIC CORP.



- Features**
- Surface Mount Devices
 - Lead free device
 - Size 1.5*0.8 mm / 0.06*0.03 inch
 - Surface Mount packaging for automated assembly

- Applications**
- Almost anywhere there is a low voltage power supply, up to 15V and a load to be protected, including:
- Computer mother board, Modem, USB hub
 - PDAs & Charger, Analog & digital line card
 - Digital cameras, Disk drivers, CD-ROMs,

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Alpha-Top (Sea & Land Alliance)

Performance Specification

Model	Marking	V _{max} (Vdc)	I _{max} (A)	I _{hold} @25°C (A)	I _{trip} @25°C (A)	P _d Typ. (W)	Maximum Time To Trip		Resistance		Agency Approval	
							Current (A)	Time (Sec)	R _{i min} (Ω)	R _{1max} (Ω)	UL	TUV
SMD0603-002	N	30	20	0.02	0.08	0.5	0.2	1.00	12.000	70.000		

I_{hold} = Hold Current. Maximum current device will not trip in 25°C still air.
I_{trip} = Trip Current. Minimum current at which the device will always trip in 25°C still air.
V_{max} = Maximum operating voltage device can withstand without damage at rated current (I_{max}).
I_{max} = Maximum fault current device can withstand without damage at rated voltage (V_{max}).
P_d = Power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.
R_{imin/max} = Minimum/Maximum device resistance prior to tripping at 25°C.
R_{1max} = Maximum device resistance is measured one hour post reflow.
CAUTION : Operation beyond the specified ratings may result in damage and possible arcing and flame.

Environmental Specifications

Test	Conditions
Passive aging	+85°C, 1000 hrs.
Humidity aging	+85°C, 85% R.H. , 168 hours
Thermal shock	+85°C to -40°C, 20 times
Resistance to solvent	MIL-STD-202, Method 215
Vibration	MIL-STD-202, Method 201
Ambient operating conditions : - 40 °C to +85 °C	
Maximum surface temperature of the device in the tripped state is 125 °C	
In case of special use, please contact our engineer	

Agency Approvals :

Regulation/Standard:



2015/863/EU



EN14582

I_{hold} Versus Temperature

Model	Maximum ambient operating temperature (T _{mao}) vs. hold current (I _{hold})								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
SMD0603-002	0.031	0.027	0.024	0.020	0.016	0.014	0.012	0.011	0.007



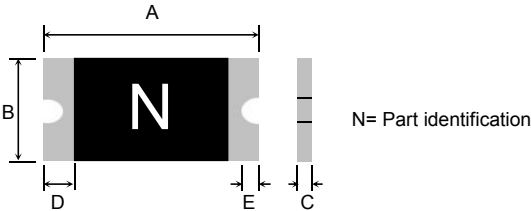
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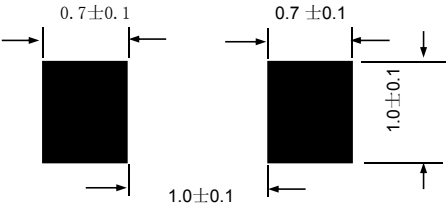
Construction And Dimension (Unit:mm)

Model	A		B		C		D		E	
	Min.	Max.	Min.	Max.	Min.	Max.	Min		Min	
SMD0603-002	1.45	1.85	0.65	1.05	0.50	1.20	0.15		0.08	

Dimensions & Marking



Recommended Pad Layout (mm)



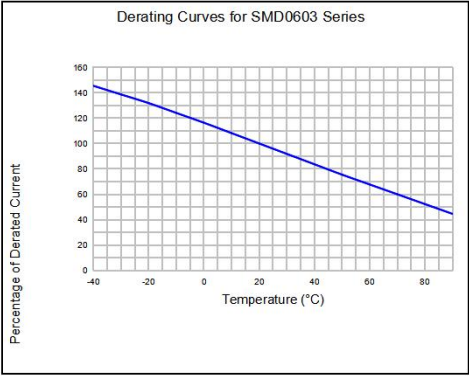
Termination Pad Characteristics

Terminal pad materials : Tin-plated Nickel-Copper
Terminal pad solderability : Meets EIA specification RS186-9E and ANSI/J-STD-002 Category 3.

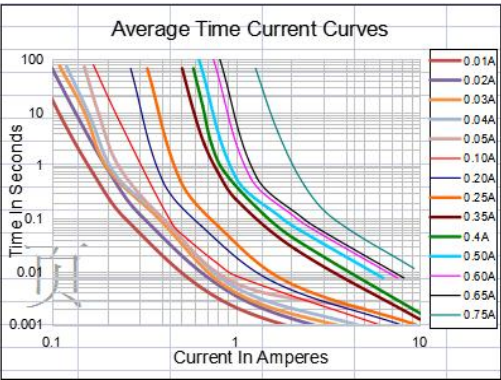
Rework

Use standard industry practices, the removal device must be replaced with a fresh one.

Thermal Derating Curve



Typical Time-To-Trip At 25°C



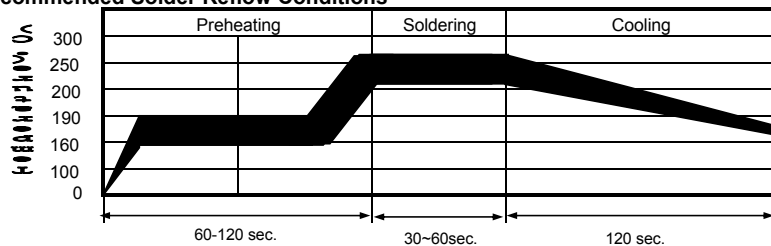
 WARNING:

- Use PPTC beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame.
- PPTC are intended for protection against occasional over current or over temperature fault conditions and should not be used when repeated fault conditions or prolonged trip events are anticipated.
- Device performance can be impacted negatively if devices are handled in a manner inconsistent with recommended electronic, thermal, and mechanical procedures for electronic components.
- Use PPTC with a large inductance in circuit will generate a circuit voltage (L di/dt) above the rated voltage of the PPTC.
- Avoid impact PPTC device its thermal expansion like placed under pressure or installed in limited space.
- Contamination of the PPTC material with certain silicon based oils or some aggressive solvents can adversely impact the performance of the devices. PPTC SMD can be cleaned by standard methods.
- Requests that customers comply with our recommended solder pad layouts and recommended reflow profile. Improper board layouts or reflow profile could negatively impact solderability performance of our devices.

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Recommended Solder Reflow Conditions



- Recommended reflow methods : IR, vapor phase oven, hot air oven.
 - Devices are not designed to be wave soldered to the bottom side of the board.
 - Recommended maximum paste thickness is 0.25 mm (0.010 inch).
 - Devices can be cleaned using standard method and solvents.
- Note : If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

Tape And Reel Specifications (mm)

Governing Specifications

W	8.0 ± 0.2
P ₀	4.0 ± 0.10
P ₁	4.0 ± 0.10
P ₂	2.0 ± 0.05
A ₀	1.05 ± 0.10
B ₀	1.85 ± 0.10
D ₀	1.55 ± 0.05
F	3.5 ± 0.05
E ₁	1.75 ± 0.10
E ₂ min.	6.25
T	0.75
T ₁ max.	0.1
K ₀	0.75/0.95 ± 0.1
Leader min.	390
Trailer min.	160

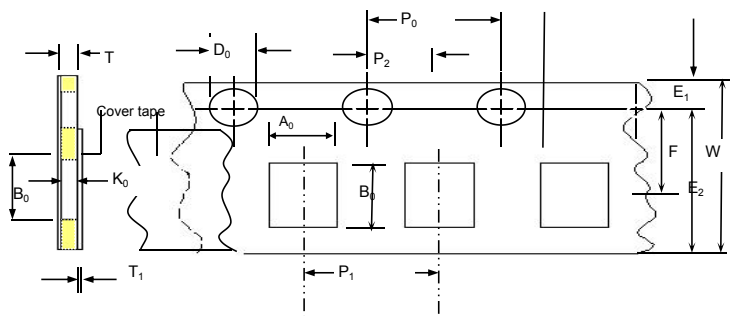
Reel Dimensions

A max.	178
N min.	60
W ₁	9.0 ± 0.5
W ₂	12.0 ± 0.05

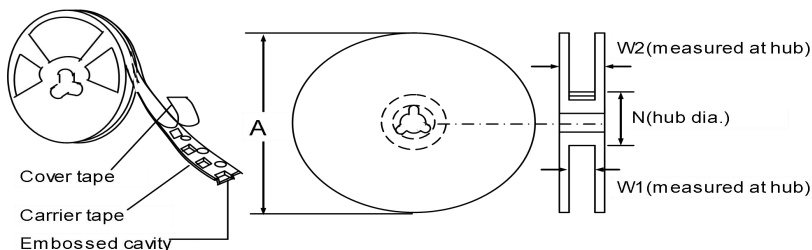
Storage And Handling

- Storage conditions : 40°C max, 70% R.H.
- Devices may not meet specified performance if storage conditions are exceeded.

Paper Tape Component Dimensions



EIA Reel Dimensions



Order Information

SMD0603	002	Packaging	Tape & Reel Quantity
Product name	Hold		
Size 1608 mm / 0603 inch	Current		
SMD: surface mount device	0.02A		5,000 pcs/reel

Tape & reel packaging per EIA481-1

Labeling Information



Sea & Land Electronic Corp.

HF Pb RoHS

Model:
Part no.:
Spec.:
Lot no.:
Q'ty:

倉儲: 密封! 溫度: 18~33°C/濕度: 30~60% A