



SEA & LAND ELECTRONIC CORP.

www.sealand-pptc.com



ALPHA-TOP TECHNOLOGY CORP.

www.alpha-top.cn

APPROVAL SHEET

MODEL NO.: SMD0603-005-33V

CUSTOMER:

CUSTOMER'S APPROVAL:

AUTHORIZED SIGNATURE/STAMP:

DATE

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Submitted by: Chen
Approved by: YC Lin
DATE: 6-Apr-23

SEA & LAND ELECTRONIC CORP.



SMD0603-005-33V

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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Performance Specification

Model	Marking	V_{max}	I_{max}	I_{hold}	I_{trip}	P_d	Maximum Time To Trip		Resistance		Agency Approval	
		(Vdc)	(A)	@25°C (A)	@25°C (A)	Typ. (W)	Current (A)	Time (Sec)	$R_{i_{min}}$ (Ω)	R_{1max} (Ω)	UL	TUV
SMD0603-005-33V	V	33	40	0.05	0.20	0.5	0.5	1.00	2.000	25.000		
<p>I_{hold} = Hold Current. Maximum current device will not trip in 25°C still air.</p> <p>I_{trip} = Trip Current. Minimum current at which the device will always trip in 25°C still air.</p> <p>V_{max} = Maximum operating voltage device can withstand without damage at rated current (I_{max}).</p> <p>I_{max} = Maximum fault current device can withstand without damage at rated voltage (V_{max}).</p> <p>P_d = Power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.</p> <p>R_{imin/max} = Minimum/Maximum device resistance prior to tripping at 25°C.</p> <p>R_{1max} = Maximum device resistance is measured one hour post reflow.</p> <p>CAUTION : Operation beyond the specified ratings may result in damage and possible arcing and flame.</p>												

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
SMD0603-005-33V	0.072	0.065	0.058	0.05	0.041	0.037	0.033	0.030	0.024



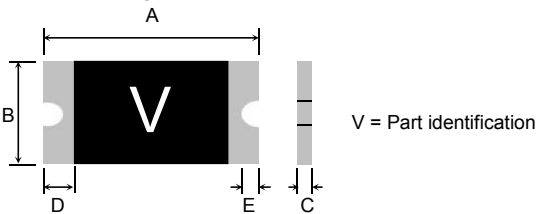
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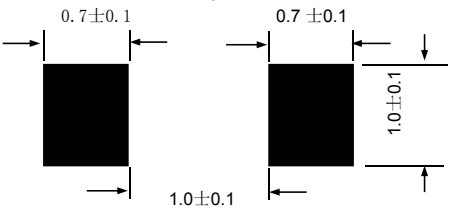
Construction And Dimension (Unit:mm)

Model	A		B		C		D		E	
	Min.	Max.	Min.	Max.	Min.	Max.	Min		Min	
SMD0603-005-33V	1.45	1.85	0.65	1.05	0.40	1.00	0.15		0.08	

Dimensions & Marking



Recommended Pad Layout (mm)



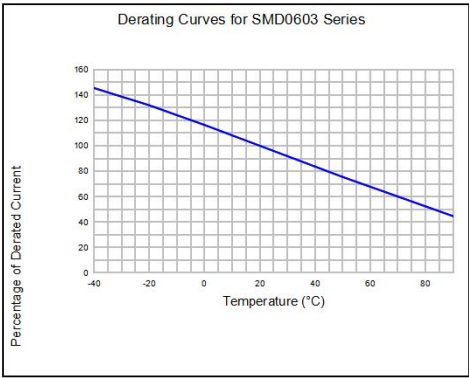
Termination Pad Characteristics

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

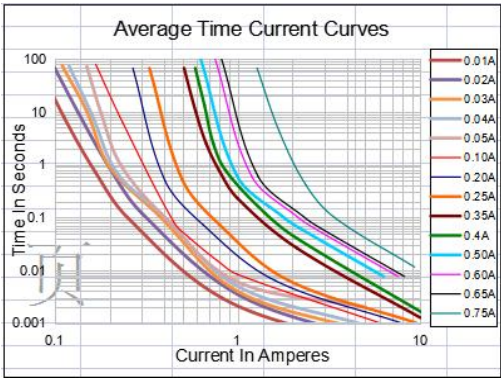
Rework

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:

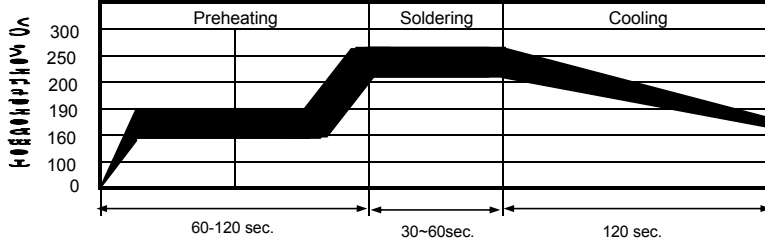
- Use PPTC beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame.
- PPTC are intended for protection against occasional over current or over temperature fault conditions and should not be used when repeated fault conditions or prolonged trip events 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

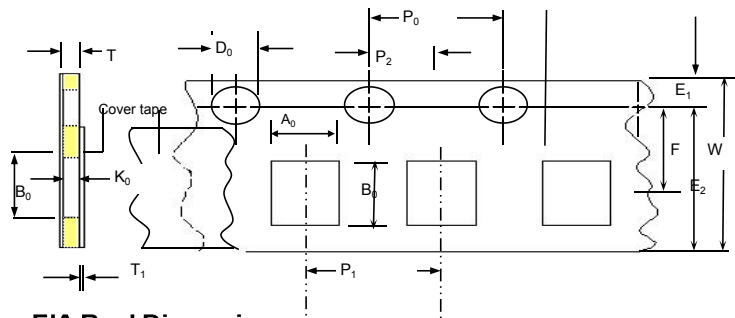


- Recommended reflow methods : IR, vapor phase oven, hot air oven.
 - Devices are not designed to be wave soldered to the bottom side of the board.
 - Recommended maximum paste thickness is 0.25 mm (0.010 inch).
 - Devices can be cleaned using standard method and solvents.
- Note : If reflow temperatures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

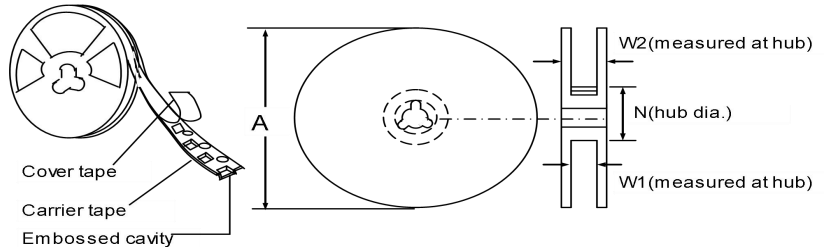
Tape And Reel Specifications (mm)

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

Paper Tape Component Dimensions



EIA Reel Dimensions



Storage And Handling

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

Order Information

SMD0603	005-33V	Packaging	Tape & Reel Quantity
Product name	Hold		
Size 1608 mm / 0603 inch	Current		
SMD: surface mount device	0.05A		5,000 pcs/reel

Tape & reel packaging per EIA481-1

Labeling Information

