



SEA & LAND ELECTRONIC CORP.

[WWW.SEALAND-PPTC.COM](http://WWW.SEALAND-PPTC.COM)



ALPHA-TOP TECHNOLOGY CORP.

[WWW.ALPHA-TOP.CN](http://WWW.ALPHA-TOP.CN)

## APPROVAL SHEET

MODEL NO.: mSMD300-13.2V

CUSTOMER:

CUSTOMER'S APPROVAL:

AUTHORIZED SIGNATURE/STAMP:

DATE

### MANUFACTURER:

HEAD OFFICE:

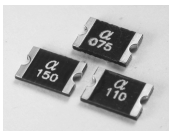
13F.,No.120-10,Sec.3,Zhongshan Rd.,Zhonghe Dist.,New Taipei City 23544,Taiwan  
Tel: 886-2-8221-2567  
Fax:882-2-2225-7268  
E-mail:service@chipfast.com.tw

China Branch:

Factory Building B)Shuangpeng,Weibu Village, Qiuchang Town,  
Huiyang District, Huizhou City, Guangdong Province, P.R.C.)  
Tel: 86-752-3562001  
Fax:86-752-3558696  
E-mail:service@atpptc.com

Submitted by: Chen  
Approved by: YC Lin  
DATE: 24-Feb-22

SEA & LAND ELECTRONIC CORP.



## mSMD300-13.2V

### Features

- Surface Mount Devices
- Lead free device
- Size 4.5\*3.2 mm/0.18\*0.12 inch
- Surface Mount packaging for automated assembly

### Applications

- Almost anywhere there is a low voltage power supply, up to 60V 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,

Alpha-Top (Sea & Land Alliance)

### Performance Specification

| Model         | $V_{max}$ | $I_{max}$ | $I_{hold}$ | $I_{trip}$ | $P_d$    | Maximum Time To Trip |            | Resistance    |               | Agency Approval |     |
|---------------|-----------|-----------|------------|------------|----------|----------------------|------------|---------------|---------------|-----------------|-----|
|               | (Vdc)     | (A)       | @25°C (A)  | @25°C (A)  | Typ. (W) | Current (A)          | Time (Sec) | $R_{min}$ (Ω) | $R_{max}$ (Ω) | UL              | TUV |
| mSMD300-13.2V | 13.2      | 100       | 3.00       | 5.00       | 0.8      | 8.0                  | 4.00       | 0.012         | 0.040         | ✓               | ✓   |

**I<sub>hold</sub>** = Hold Current. Maximum current device will not trip in 25°C still air.

**I<sub>trip</sub>** = Trip Current. Minimum current at which the device will always trip in 25°C still air.

**V<sub>max</sub>** = Maximum operating voltage device can withstand without damage at rated current (I<sub>max</sub>).

**I<sub>max</sub>** = Maximum fault current device can withstand without damage at rated voltage (V<sub>max</sub>).

**P<sub>d</sub>** = Power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.

**R<sub>min/max</sub>** = Minimum/Maximum device resistance prior to tripping at 25°C.

**R<sub>1max</sub>** = 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                  | Resistance change |
|--------------------------------------------------------------------------|-----------------------------|-------------------|
| Passive aging                                                            | +85°C, 1000 hrs.            | ±5% typical       |
| Humidity aging                                                           | +85°C, 85% R.H. , 168 hours | ±5% typical       |
| Thermal shock                                                            | +85°C to -40°C, 20 times    | ±33% typical      |
| Resistance to solvent                                                    | MIL-STD-202,Method 215      | No change         |
| Vibration                                                                | MIL-STD-202,Method 201      | No change         |
| 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 :



E201504(Alpha-Top)/E319079(Sea&Land)



R 50481056

### Regulation/Standard:



2015/863/EU



EN14582

### I<sub>hold</sub> Versus Temperature

| Model         | Maximum ambient operating temperature (T <sub>mao</sub> ) vs. hold current (I <sub>hold</sub> ) |       |      |      |      |      |      |      |      |
|---------------|-------------------------------------------------------------------------------------------------|-------|------|------|------|------|------|------|------|
|               | -40°C                                                                                           | -20°C | 0°C  | 25°C | 40°C | 50°C | 60°C | 70°C | 85°C |
| mSMD300-13.2V | 4.15                                                                                            | 3.76  | 3.46 | 3.00 | 2.55 | 2.28 | 2.01 | 1.61 | 1.33 |

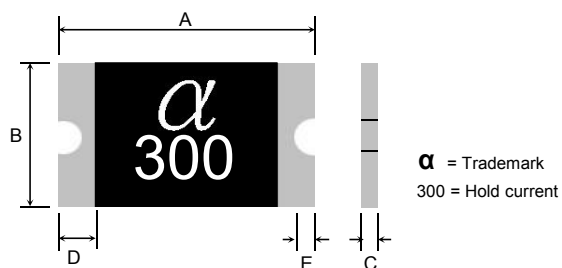
# mSMD300-13.2V

Alpha-Top (Sea & Land Alliance)

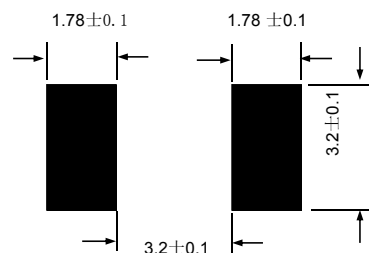
## Construction And Dimension (Unit:mm)

| Model         | A    |      | B    |      | C    |      | D    |      | E    |      |
|---------------|------|------|------|------|------|------|------|------|------|------|
|               | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. |
| mSMD300-13.2V | 4.37 | 4.73 | 3.07 | 3.41 | 0.90 | 1.80 | 0.30 |      | 0.25 |      |

## Dimensions & Marking



## Recommended Pad Layout (mm)



## Termination Pad Characteristics

Terminal pad materials :

Tin-plated Nickel-Copper

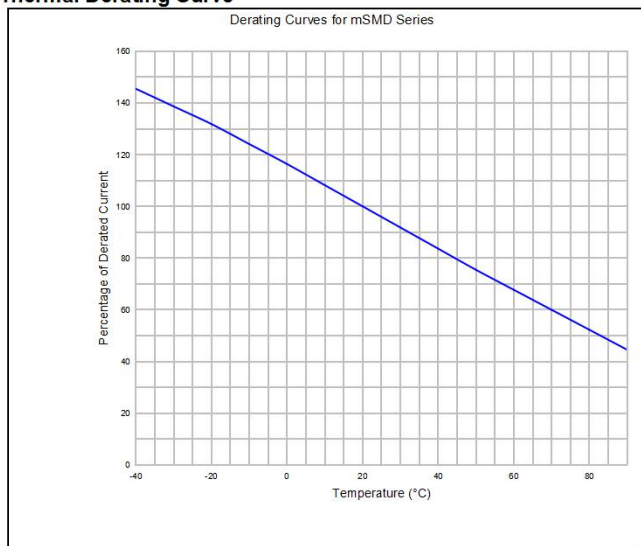
Terminal pad solderability :

Meets EIA specification RS186-9E and ANSI/J-STD-002 Category 3.

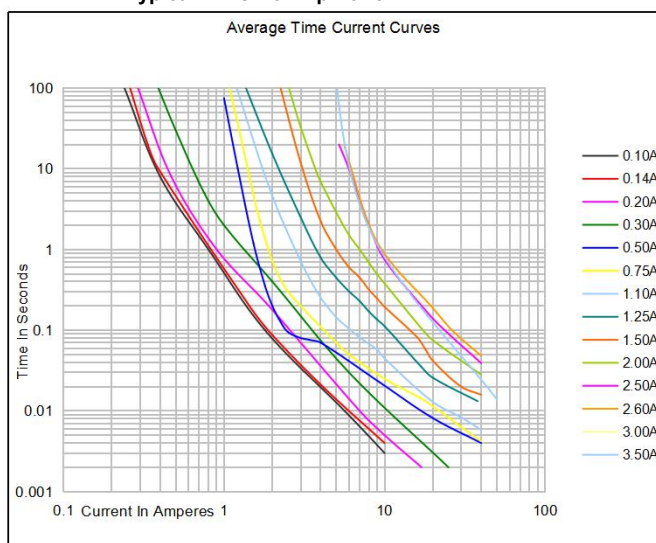
## Rework

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

## Thermal Derating Curve



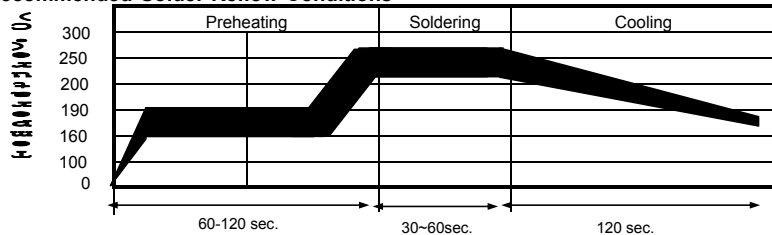
## Typical Time-To-Trip At 25°C



## 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.

## Recommended Solder Reflow Conditions

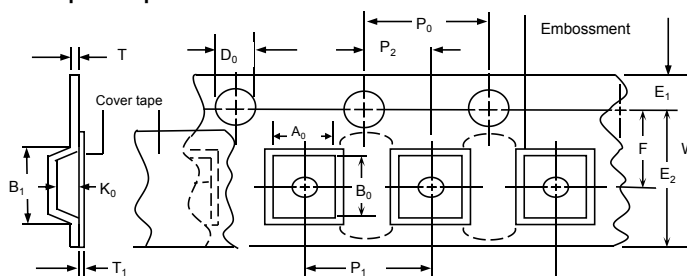


- Recommended reflow methods : IR, vapor phase oven, hot air oven.
  - Devices are not designed to be wave soldered to the bottom side of the board.
  - Recommended maximum paste thickness is 0.25 mm (0.010 inch).
  - Devices can be cleaned using standard method and solvents.
- Note : If reflow temperatures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

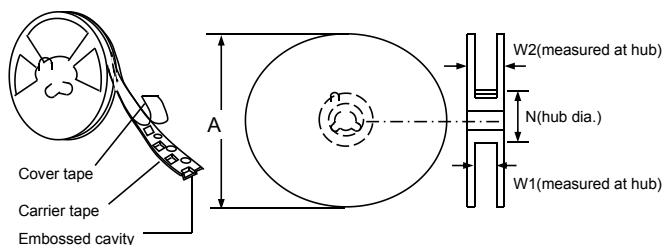
## Tape And Reel Specifications (mm)

| Governing Specifications | EIA 481-1        |
|--------------------------|------------------|
| W                        | 12 ± 0.3         |
| P0                       | 4.0 ± 0.10       |
| P1                       | 8.0 ± 0.10       |
| P2                       | 2.0 ± 0.05       |
| A0                       | 3.5 ± 0.23       |
| B0                       | 5.1 ± 0.15       |
| B1max.                   | 5.9              |
| D0                       | 1.5 + 0.1, -0    |
| F                        | 5.5 ± 0.05       |
| E1                       | 1.75 ± 0.10      |
| E2min.                   | 10.25            |
| Tmax.                    | 0.6              |
| T1max.                   | 0.1              |
| K0                       | 0.9 ± 0.15       |
| Leader min.              | 390              |
| Trailer min.             | 160              |
| Reel Dimensions          |                  |
| A max.                   | 178              |
| N min.                   | 60               |
| W1                       | 12.4 + 2.0, -0.0 |
| W2max.                   | 18.4             |

## EIA 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

| mSMD                       | 300-13.2V | Packaging            |
|----------------------------|-----------|----------------------|
| Product name               | Hold      | Tape & Reel Quantity |
| Size 4532mm/1812 inch      | Current   | 1,500 pcs/reel       |
| SMD : surface mount device | 3.00A     |                      |

Tape & reel packaging per EIA481-1

## Labeling Information

