

# Surface Mount Polymer PTC

## PMS Series, 2018 Size

### Features:

- Resettable over-current protection
- Fast time-to-trip
- RoHS compliant
- Halogen free

### Applications:

- Battery packs
- Portable electronic devices
- Industrial controls
- Multimedia
- Game machines
- Telecom & broadband instruments

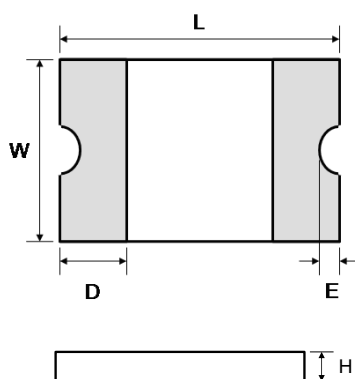
### Ordering Code:

#### PMS 2018-100-33

(1) (2) (3) (4)

- (1) Series code
- (2) Size code
- (3) Current rating code  
100: 1.0A
- (4) Voltage rating code  
33: 33V

### Product Dimensions:



Part Number	L (mm) Max.	W (mm) Max.	H (mm) Max.	D (mm) Min.
PMS2018-030	5.44	4.93	1.10	0.30
PMS2018-050	5.44	4.93	1.30	0.30
PMS2018-100	5.44	4.93	0.80	0.30
PMS2018-100-33	5.44	4.93	1.30	0.30
PMS2018-150	5.44	4.93	0.80	0.30
PMS2018-200	5.44	4.93	0.80	0.30

## Typical Ratings and Characteristics (@ 25°C):

✧ Operating temperature: -40 to +85°C

Part Number	Current (A)		V <sub>Max</sub> (Vdc)	I <sub>Max</sub> (A)	Max. Time to Trip (sec)		Typical Power (Pd, W)	Resistance Min. (Ω)	One Hours Post Reflow Resistance R <sub>1</sub> Max. (Ω) <sup>1</sup>
	Hold (I <sub>H</sub> )	Trip (I <sub>T</sub> )			Current (A)	Time (sec)			
PMS2018-030	0.30	0.60	60	100	1.5	3.00	0.9	0.500	2.300
PMS2018-050	0.55	1.20	60	100	2.5	3.00	1.0	0.200	1.000
PMS2018-100	1.10	2.20	15	100	8.0	0.40	1.1	0.060	0.360
PMS2018-100-33	1.10	2.20	33	100	8.0	0.40	1.1	0.060	0.360
PMS2018-150	1.50	3.00	15	100	8.0	0.80	1.1	0.050	0.170
PMS2018-200	2.00	4.00	10	100	8.0	2.40	1.1	0.030	0.100

<sup>1</sup> The max resistance of one-hour post reflow is a reference value. The value may change a little according to reflow conditions and soldering state.

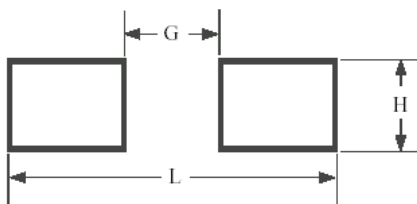
## Packaging and Marking Information:

Part Number	Part Marking	Tape & Reel Quantity (piece)
PMS2018-030	α030	1,500
PMS2018-050	α050	
PMS2018-100	α100	2,500
PMS2018-100-33	α100	1,500
PMS2018-150	α150	2,500
PMS2018-200	α200	

## Thermal De-rating Hold Current (A) at Ambient Temperature (25°C):

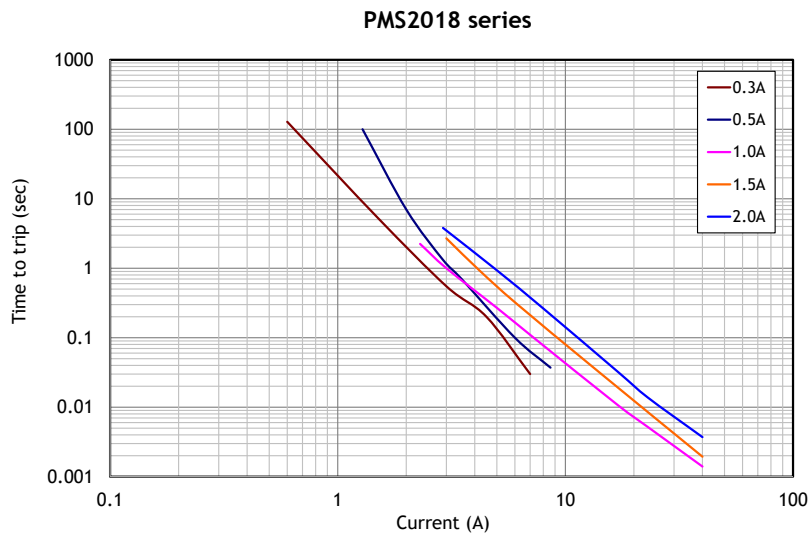
Part Number	Ambient temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
PMS2018-030	0.48	0.42	0.35	0.30	0.24	0.21	0.17	0.15	0.10
PMS2018-050	0.87	0.77	0.67	0.55	0.46	0.41	0.36	0.31	0.23
PMS2018-100	1.71	1.52	1.32	1.10	0.94	0.84	0.74	0.64	0.50
PMS2018-100-33	1.71	1.52	1.32	1.10	0.94	0.84	0.74	0.64	0.50
PMS2018-150	2.38	2.10	1.82	1.50	1.27	1.13	0.99	0.85	0.64
PMS2018-200	2.95	2.65	2.35	2.00	1.74	1.59	1.44	1.29	1.06

## Recommended Foot Print Dimensions:



G (mm)	H (mm)	L (mm)
3.15	4.90	6.35

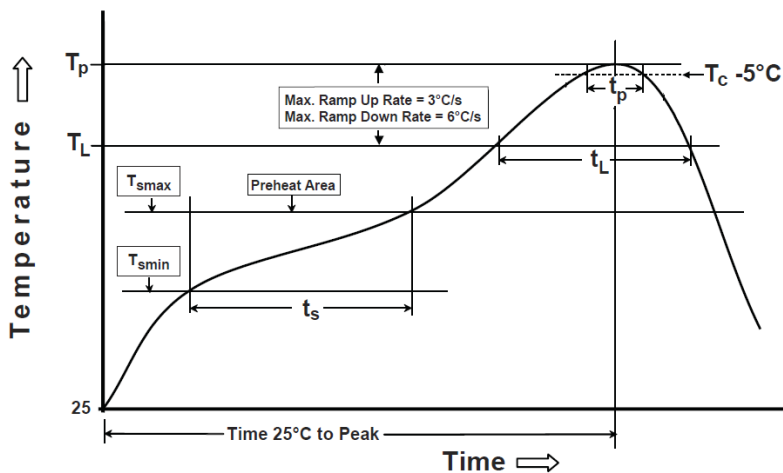
**Typical Time to Trip (@ 25°C):**



**Environmental Specifications:**

Test	Conditions	Resistance change
Passive aging	+85°C, 1000hrs	±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		

### Recommended Reflow Soldering Profile:



Profile Feature	Pb-Free Assembly
<b>Preheat/Soak</b>	
Temperature Min ( $T_{smin}$ )	150°C
Temperature Max( $T_{smax}$ )	200°C
Time( $t_s$ ) from ( $T_{smin}$ to $T_{smax}$ )	60~120 seconds
Ramp-uprate ( $T_L$ to $T_p$ )	3°C/second max.
Liquidous temperature( $T_L$ )	217°C
Time( $t_L$ ) maintained above $T_L$	60~150 seconds
Peak package body temperature ( $T_p$ )	260°C
Time ( $t_p$ )*within 5°C of the specified classification temperature ( $T_c$ )	30 seconds *
Ramp-down rate ( $T_p$ to $T_L$ )	6°C/second max.
Time 25°C to peak temperature	8 minutes max.
* Tolerance for peak profile temperature ( $T_p$ ) is defined as a supplier minimum and a user maximum	

**Note:**

- PMS1812 series cannot be wave soldered. Please contact AEM for hand soldering recommendations.
- Storage conditions : 40°C max, 70% R.H. Devices may not meet specified performance if storage conditions are exceed.
- If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.
- Compatible with Pb and Pb-free solder reflow profiles.
- Excess solder may cause a short circuit, especially during hand soldering.

**Caution:** Operation beyond the rated voltage or current may result in rupture electrical arcing or flame.

**WARNING:**

- Operation beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame.
- The devices 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.
- Contamination of the PPTC material with certain silicon based oils or some aggressive solvents can adversely impact the performance of the devices.
- Device performance can be impacted negatively if devices are handled in a manner inconsistent with recommended electronic, thermal and mechanical procedures for electronic components.
- Operation in circuit with a large inductance can generate a circuit voltage ( $L di/dt$ ) above the rated voltage of the PPTC device.

**Do not use this product in any Automotive Power train or Safety equipment such as ECU, ABS systems, or Battery Pack, Battery Management System, Battery Charger for Electric Vehicles and Plug-in Hybrid Vehicles. Only AEM products clearly described as "for Automotive Use" on its catalog can be used for automobile applications such as Power train and Safety equipment.**