

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

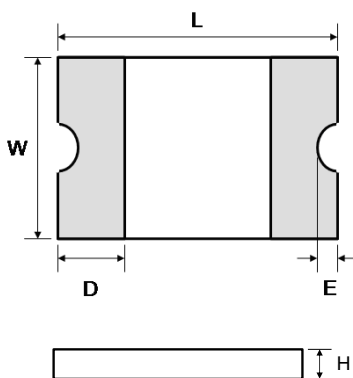
Ordering Code:

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 _{Max} (Vdc)	I _{Max} (A)	Max. Time to Trip (sec)		Typical Power (Pd, W)	Resistance Min. (Ω)	One Hours Post Reflow Resistance R ₁ Max. (Ω) ¹
	Hold (I _H)	Trip (I _T)			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

¹ 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.

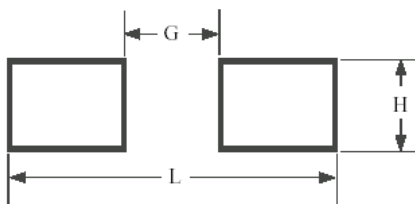
Packaging and Marking Information:

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):

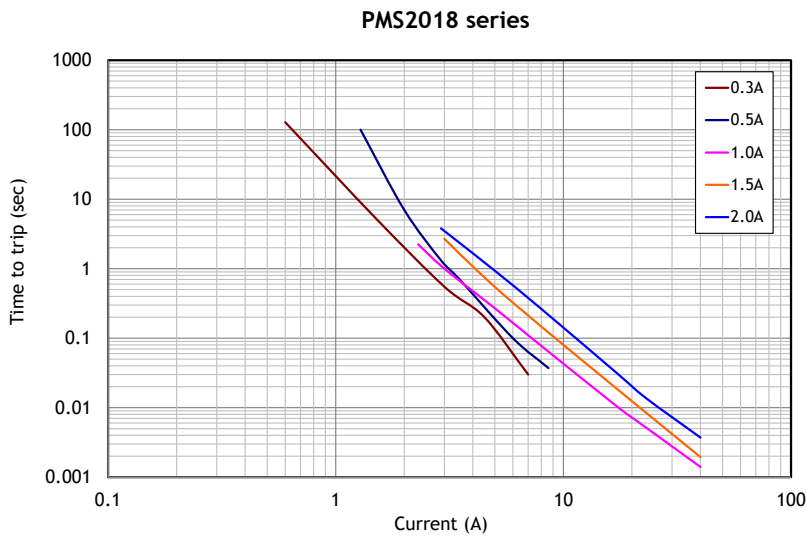
Part Number	Ambient temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
PMS2018-030	0.48	0.42	0.35	0.30	0.24	0.21	0.17	0.15	0.10
PMS2018-050	0.87	0.77	0.67	0.55	0.46	0.41	0.36	0.31	0.23
PMS2018-100	1.71	1.52	1.32	1.10	0.94	0.84	0.74	0.64	0.50
PMS2018-100-33	1.71	1.52	1.32	1.10	0.94	0.84	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

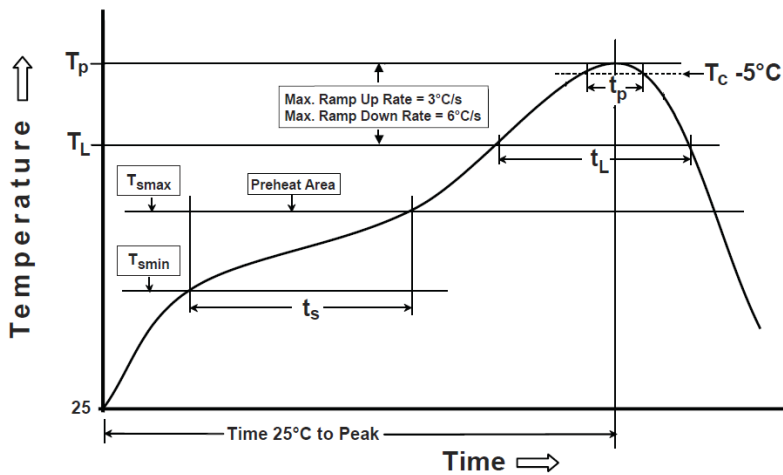
Typical Time to Trip (@ 25°C):



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
Preheat/Soak	
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.