

# Surface Mount Polymer PTC

## PMS Series, 2920 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 2920-300-06**

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

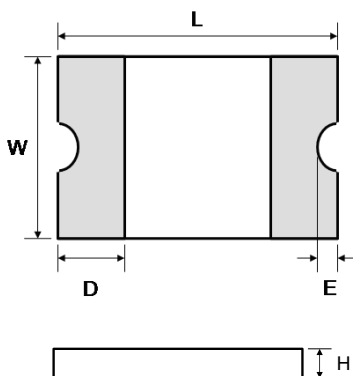
- (1) Series code
- (2) Size code
- (3) Current rating code  
300: 3.0A
- (4) Rating voltage code  
06: 6Vdc

### Agency Approval:

Recognized under the components program of UL.

File number: E355716

### Product Dimensions:



Part Number	L (mm) Max.	W (mm) Max.	H (mm) Max.	D (mm) Min.
PMS2920-030	7.98	5.44	1.30	0.30
PMS2920-050	7.98	5.44	1.30	0.30
PMS2920-075	7.98	5.44	1.30	0.30
PMS2920-075-60	7.98	5.44	1.15	0.30
PMS2920-100	7.98	5.44	1.30	0.30
PMS2920-125	7.98	5.44	1.30	0.30
PMS2920-150	7.98	5.44	1.30	0.30
PMS2920-185	7.98	5.44	1.30	0.30
PMS2920-200	7.98	5.44	1.30	0.30
PMS2920-250	7.98	5.44	1.30	0.30
PMS2920-260	7.98	5.44	1.30	0.30
PMS2920-300-06	7.98	5.44	1.30	0.30
PMS2920-300	7.98	5.44	1.30	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>	UL Certification
	Hold (I <sub>H</sub> )	Trip (I <sub>T</sub> )			Current (A)	Time (sec)				
PMS2920-030	0.30	0.60	60	100	1.5	3.0	1.50	0.600	4.80	
PMS2920-050	0.50	1.00	60	100	2.5	4.0	1.50	0.180	1.40	
PMS2920-075	0.75	1.50	33	100	8.0	0.3	1.50	0.100	1.00	
PMS2920-075-60	0.75	1.50	60	100	8.0	0.3	1.50	0.100	1.00	
PMS2920-100	1.10	2.20	33	100	8.0	0.5	1.50	0.065	0.410	
PMS2920-125	1.25	2.50	33	100	8.0	2.0	1.50	0.050	0.250	
PMS2920-150	1.50	3.00	33	100	8.0	2.0	1.50	0.035	0.230	
PMS2920-185	1.85	3.75	33	100	8.0	2.5	1.50	0.030	0.150	
PMS2920-200	2.00	4.00	16	100	8.0	4.5	1.50	0.020	0.120	
PMS2920-250	2.50	5.00	16	100	8.0	16.0	1.50	0.020	0.085	
PMS2920-260	2.60	5.20	6	100	8.0	10.0	1.50	0.014	0.075	
PMS2920-300-06	3.00	6.00	6	100	8.0	20.0	1.50	0.012	0.048	√
PMS2920-300	3.00	6.00	16	100	8.0	20.0	1.50	0.012	0.048	

<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.

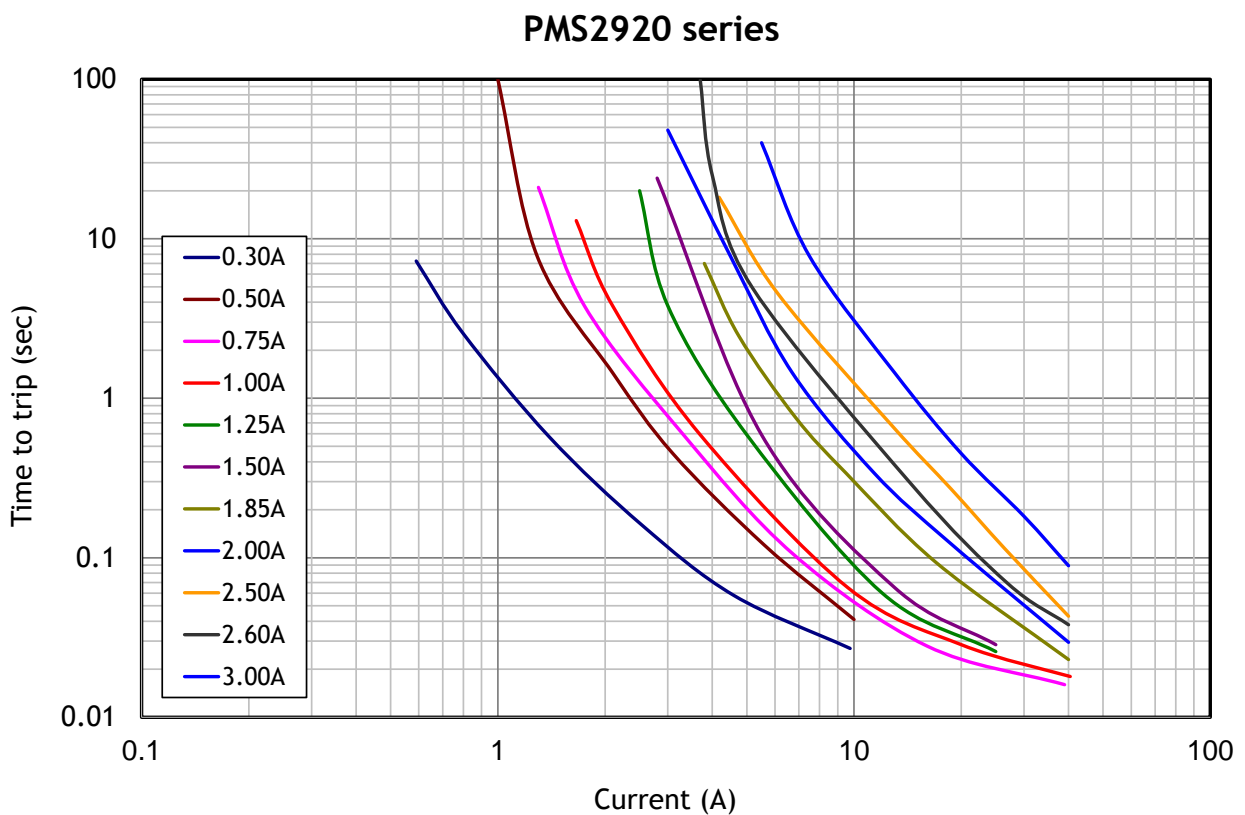
## Packaging and Marking Information:

Part Number	Part Marking	Tape & Reel Quantity (piece)
PMS2920-030	α030L	2,000
PMS2920-050	α050L	
PMS2920-075	α075L	
PMS2920-075-60	α075L	1,500
PMS2920-100	α100L	2,000
PMS2920-125	α125L	
PMS2920-150	α150L	
PMS2920-185	α185L	1,500
PMS2920-200	α200L	2,000
PMS2920-250	α250L	
PMS2920-260	α260L	
PMS2920-300-06	α300L	
PMS2920-300	α300L	

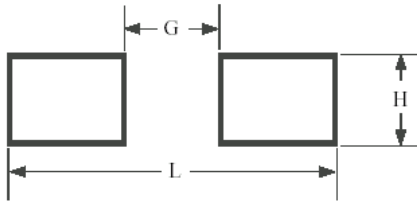
### Thermal De-rating Hold Current (A) at Ambient Temperature (25°C):

Part Number	Ambient temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
PMS2920-030	0.45	0.40	0.35	0.30	0.25	0.23	0.20	0.17	0.14
PMS2920-050	0.76	0.67	0.59	0.50	0.42	0.38	0.33	0.29	0.23
PMS2920-075	1.13	1.01	0.88	0.75	0.62	0.56	0.50	0.44	0.34
PMS2920-075-60	1.13	1.01	0.88	0.75	0.62	0.56	0.50	0.44	0.34
PMS2920-100	1.66	1.47	1.29	1.10	0.91	0.83	0.73	0.64	0.50
PMS2920-125	1.89	1.68	1.46	1.25	1.04	0.94	0.83	0.73	0.56
PMS2920-150	2.27	2.01	1.76	1.50	1.25	1.13	1.00	0.87	0.74
PMS2920-185	2.80	2.47	2.17	1.85	1.54	1.39	1.22	1.07	0.85
PMS2920-200	3.02	2.68	2.34	2.00	1.66	1.50	1.32	1.16	0.90
PMS2920-250	3.78	3.35	2.93	2.50	2.08	1.88	1.65	1.45	1.13
PMS2920-260	3.64	3.25	2.91	2.60	2.26	2.08	1.95	1.74	1.13
PMS2920-300-06	4.53	4.02	3.51	3.00	2.52	2.26	1.99	1.75	1.34
PMS2920-300	4.53	4.02	3.51	3.00	2.52	2.26	1.99	1.75	1.34

### Typical Time to Trip (@ 25°C):



### Recommended Foot Print Dimensions:

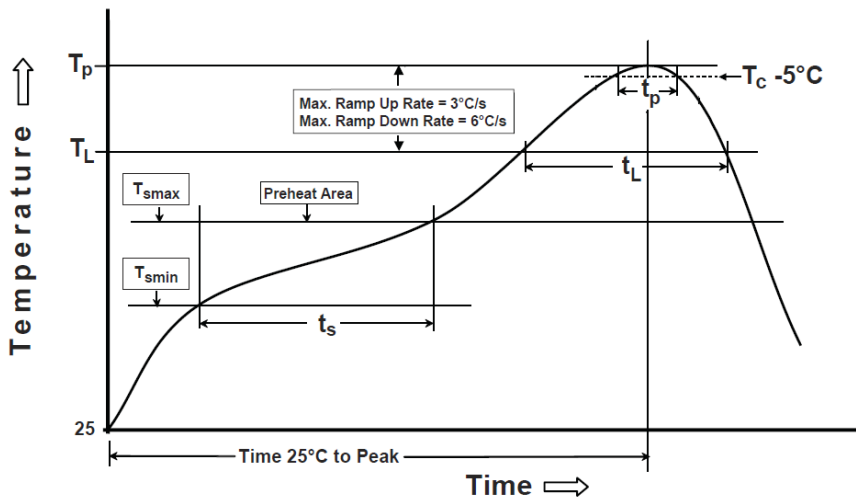


G (mm)	H (mm)	L (mm)
4.60	5.50	8.60

### 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		
In case of special use, please contact our engineer		

### 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:

- PMS2920 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.

**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.