Surface Mount Polymer PTC

PAS2920 Series (Automotive Grade, 2920 Size)

Features:

- Automotive grade with AEC-Q200 qualification
- Resettable over-current protection
- Fast time-to-trip

Applications:

- Electronic control unit (ECU) I/O and trace protection
- Heating ventilation and cooling (HVAC) control circuit and I/O protection
- Battery management system
- Telematics, infotainment and navigations systems

Product Identification:

PAS 2920 – 300 - 24 F

(1) (2) (3) (4) (5)

(1) Series Code: Surface Mount Polymer PTC

(2) Size Code: L x W (inch), the first two digits - L (length), the last two digits - W (width)

(3) Current Rating Code: 300 - 3.0A

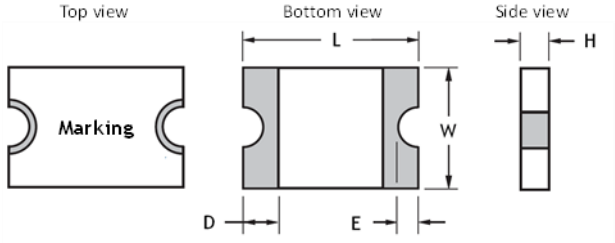
(4) Voltage Rating Code: 24 - 24V

(5) Identification Code

Agency Approval:

- UL file number: E355716
- TUV certification number: R50371842, R50371875 and R50385152.
- Tested for EN60738-1: 2006+A1; EN60738-1:2008; EN60730-1: 2011 clause 15, 17 and Annex J.

Shape and Dimensions:



Part Number	L mm (inches)		W mm (inches)		H mm (inches)		D mm (inches)	E mm (inches)	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.	Max.
PAS2920-185-33F PAS2920-260F	6.73 (0.265)	7.98 (0.312)	4.80 (0.189)	5.44 (0.214)	0.75 (0.030)	1.60 (0.063)	0.30 (0.012)	0.25 (0.010)	2.00 (0.079)
PAS2920-300-24F	6.73 (0.265)	7.98 (0.312)	4.80 (0.189)	5.44 (0.214)	0.75 (0.030)	1.60 (0.063)	0.30 (0.012)	0.25 (0.010)	2.00 (0.079)

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Ordering Information:

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]	Agency Approval	
	Hold (I_H)	Trip (I_T)			Current (A)	Time (sec)				UL	TUV
PAS2920-185-33F	1.85	3.70	33	40	8.0	2.5	1.50	0.045	0.150	√	√
PAS2920-260F	2.60	5.20	24	20	8.0	5.0	1.50	0.020	0.075	√	√
PAS2920-300-24F	3.00	5.20	24	20	8.0	15.0	1.50	0.015	0.075	√	√

[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.

Temperature De-rating:

Part Number	Ambient temperature								
	-40°C	-20°C	0°C	23°C	40°C	50°C	60°C	70°C	85°C
PAS2920-185-33F	2.80	2.47	2.17	1.85	1.54	1.39	1.22	1.07	0.85
PAS2920-260F	3.75	3.35	3.00	2.60	2.35	2.15	2.05	1.80	1.30
PAS2920-300-24F	4.00	3.55	3.20	3.30	2.50	2.25	2.15	1.85	1.50

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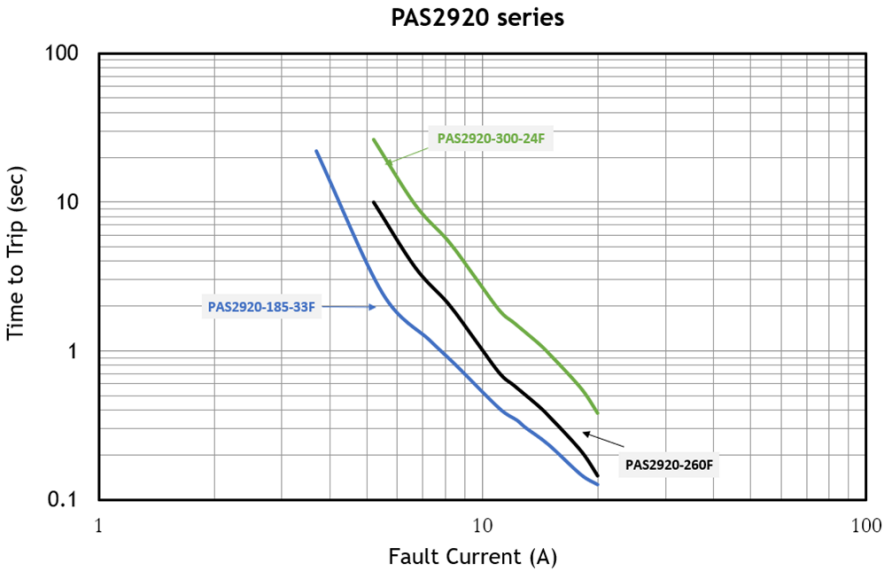
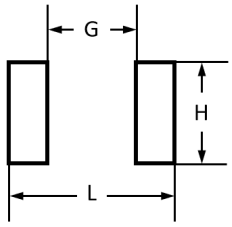
Typical Time to Trip (@ 23℃):



Recommended Land Pattern:

Chip Size	2920	Unit
G	4.6±0.1	mm
H	5.3±0.1	mm
L	8.6±0.1	mm



Packaging and Marking:

Part Number	Part Marking *	Tape & Reel Quantity (piece)
PAS2920-185-33F	9w	3,000
PAS2920-260F	Ew	
PAS2920-300-24F	Jw	

* 9w →9 = 1.85A; w = Week code (w=Y → week 49~50)

Operating Temperature Range:

- -40°C ~ +85°C (with de-rating)

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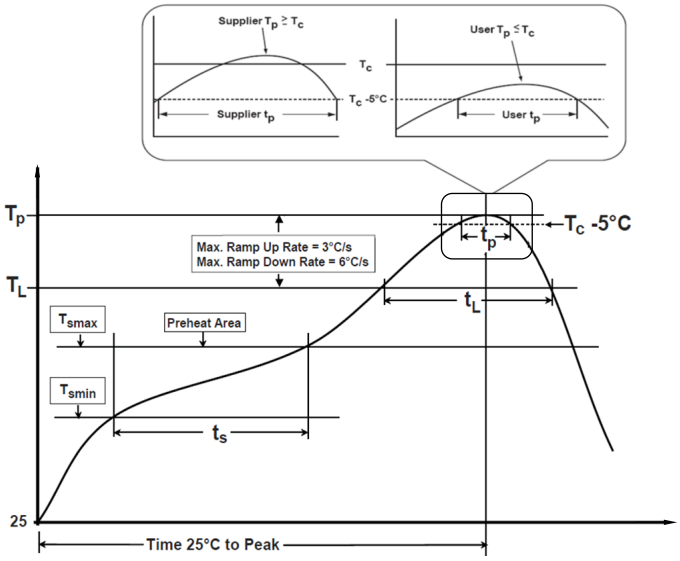
Recommended Temperature Profile:

* Recommended Temperature Profile for Reflow Soldering



Profile Feature	Pb-Free Assembly
Preheat/Soak Temperature Min (T_{smin}) Temperature Max (T_{smax}) Time (t_s) from (T_{smin} to T_{smax})	 150°C 200°C 60~180 seconds
Ramp-uprate (T_L to T_p)	3°C/second max.
Liquidous temperature (T_L) Time (t_L) maintained above T_L	217°C 60~150 seconds
Peak package body temperature (T_p)	260°C
Time (t_p)*within 5°C of the specified classification temperature (T_c)	20~40 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:

- PAS2920 series cannot be wave soldered. Please contact AEM for hand soldering recommendations.
- 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.

Disclaimer

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