Surface Mount Polymer PTC

PAS1206 Series (Automotive Grade, 1206 Size)

Features:

- Automotive grade with AEC-Q200 qualification
- Resettable over-current protection
- Small size of 1206
- Fast time-to-trip
- Low profile

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 1206–035-16 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: 035 - 0.35A

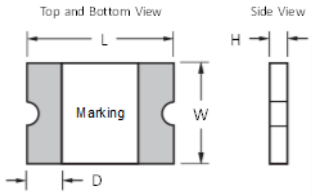
(4) Voltage Rating Code: 16 - 16V

(5) Identification Code

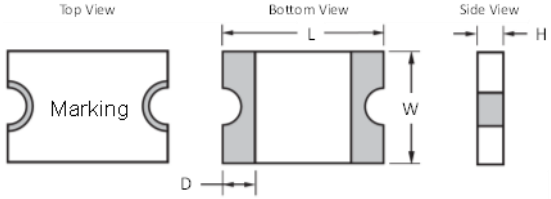
Agency Approval:

- 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:



Type 1



Type 2

Part Number	Type	L mm (inches)		W mm (inches)		H mm (inches)		D mm (inches)
		Min.	Max.	Min.	Max.	Min.	Max.	Min.
PAS1206-012	1	3.00 (0.118)	3.40 (0.134)	1.40 (0.055)	1.80 (0.071)	0.70 (0.028)	1.10 (0.043)	0.25 (0.010)
PAS1206-016 PAS1206-020	1	3.00 (0.118)	3.40 (0.134)	1.40 (0.055)	1.80 (0.071)	0.48 (0.019)	0.85 (0.033)	0.25 (0.010)
PAS1206-020-30F	2	3.00 (0.118)	3.40 (0.134)	1.40 (0.055)	1.80 (0.071)	0.40 (0.016)	0.85 (0.033)	0.25 (0.010)
PAS1206-025F	2	3.00 (0.118)	3.40 (0.134)	1.40 (0.055)	1.80 (0.071)	0.40 (0.016)	0.85 (0.033)	0.25 (0.010)
PAS1206-035-16F	2	3.00 (0.118)	3.40 (0.134)	1.40 (0.055)	1.80 (0.071)	0.40 (0.016)	0.85 (0.033)	0.25 (0.010)
PAS1206-050	1	3.00 (0.118)	3.40 (0.134)	1.40 (0.055)	1.80 (0.071)	0.48 (0.019)	0.85 (0.033)	0.25 (0.010)

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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
PAS1206-012	0.12	0.29	30	10	1.0	0.20	0.6	1.35	8.50	√	√
PAS1206-016	0.16	0.37	30	10	1.0	0.30	0.6	0.70	6.00	√	√
PAS1206-020	0.20	0.46	24	10	1.0	0.60	0.6	0.60	2.60	√	√
PAS1206-020-30F	0.20	0.40	30	60	1.0	0.60	0.6	0.60	3.30	√	√
PAS1206-025F	0.25	0.50	16	20	8.0	0.08	0.6	0.45	2.30	√	√
PAS1206-035-16F	0.35	0.75	16	20	3.5	0.14	0.6	0.30	1.40	√	√
PAS1206-050	0.50	1.00	13.2	100	8.0	0.10	0.6	0.15	0.70	√	√

[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
PAS1206-012	0.19	0.17	0.15	0.12	0.11	0.10	0.09	0.08	0.07
PAS1206-016	0.21	0.20	0.18	0.16	0.14	0.13	0.12	0.11	0.09
PAS1206-020	0.30	0.27	0.24	0.20	0.18	0.16	0.14	0.12	0.11
PAS1206-020-30F	0.30	0.27	0.24	0.20	0.18	0.16	0.14	0.12	0.10
PAS1206-025F	0.39	0.35	0.31	0.25	0.23	0.21	0.18	0.16	0.13
PAS1206-035-16F	0.51	0.46	0.40	0.35	0.30	0.27	0.24	0.22	0.18
PAS1206-050	0.76	0.68	0.59	0.50	0.44	0.40	0.35	0.32	0.26

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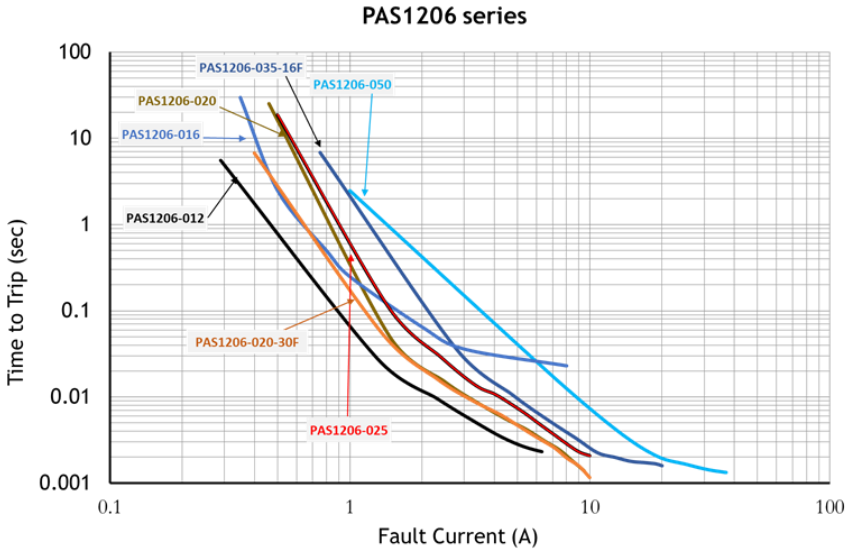
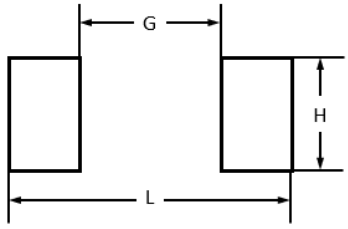
Typical Time to Trip (@ 23℃):



Recommended Land Pattern:

Chip Size	1206	Unit
G	2.0±0.1	mm
H	1.6±0.1	mm
L	4.0±0.1	mm



Packaging and Marking:

Part Number	Part Marking	Tape & Reel Quantity (piece)
PAS1206-012	0	3,000
PAS1206-016	1	
PAS1206-020	2	
PAS1206-020-30F	2	
PAS1206-025F	C	
PAS1206-035-16F	3	
PAS1206-050	4	

Operating Temperature Range:

- -40°C ~ +85°C (with de-rating)

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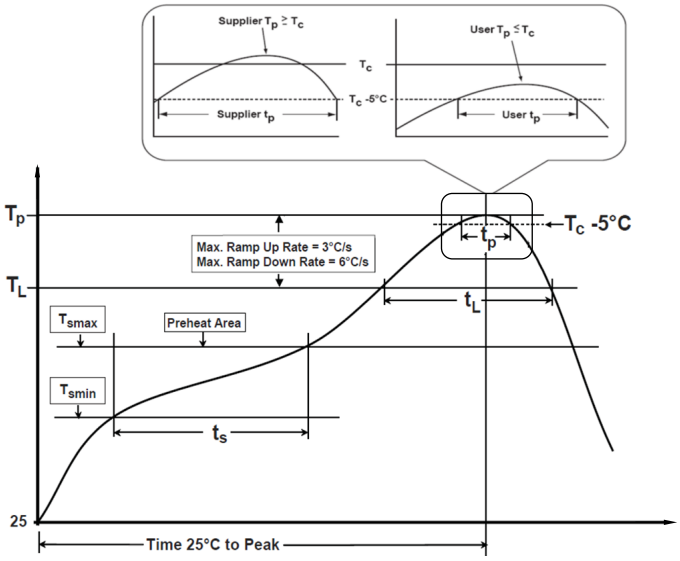
Recommended Temperature Profile:

* 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:

- PAS1206 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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