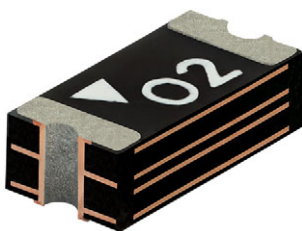


SMD 1206 Polymer PTCs



FEATURES

- Fast response to overcurrent
- Low resistance for minimal voltage drop
- Compact design and low profile
- Compatible with high temperature solders
- C-UL-US recognized under file E148885
- TÜV approved under file R 50719915
- Material categorization:
for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

LINKS TO ADDITIONAL RESOURCES

SPICE
Models



QUICK REFERENCE DATA		
PARAMETER ⁽¹⁾	VALUE	UNIT
Hold current (I_{hold}) ⁽²⁾⁽³⁾	0.05 to 1.1	A
Trip current (I_{trip}) ⁽²⁾⁽³⁾	0.15 to 2.2	A
Maximum voltage ($V_{max.}$) ⁽²⁾⁽³⁾	8 to 60	V _{DC}
Maximum current ($I_{max.}$) ⁽²⁾⁽³⁾	10 to 100	A
Power dissipation (P_D typ.) ⁽³⁾	0.6 to 0.8	W
Minimum initial resistance ($R_{min.}$) ⁽²⁾⁽³⁾	0.04 to 3.6	Ω
Maximum resistance after tripping and 1 h cool down (R_1 max.) ⁽²⁾⁽³⁾	0.21 to 20	Ω
Operating temperature	-40 to +85	°C
Storage temperature	-40 to +85	°C
Maximum surface temperature in tripped state	125	°C

Notes

- (1) Definitions, measurements, and tests are made in accordance with standard IEC 62319-1 "Polymeric thermistors - Directly heated positive step function temperature coefficient"
- (2) Other values available on request
- (3) All the parameters are characterized at 25 °C still air

APPLICATIONS

Overcurrent protection in:

- USB ports
- HDMI source
- PC motherboards - plug and play
- Mobile phones - battery and port
- Mobile internet devices
- IC VCC
- Battery protection
- Home automation sensors

DESCRIPTION

These polymer-based thermistors have a positive temperature coefficient and are primarily intended for resettable overcurrent protection. The terminals are 100 % matte tin plated. The part is laser marked with an identification letter.

MOUNTING

Important mounting and handling instructions: see www.vishay.com/doc?29264

By soldering in any position.

Not intended for potting or sealing.

Maximum surface temperature in case of overload can reach 125 °C.

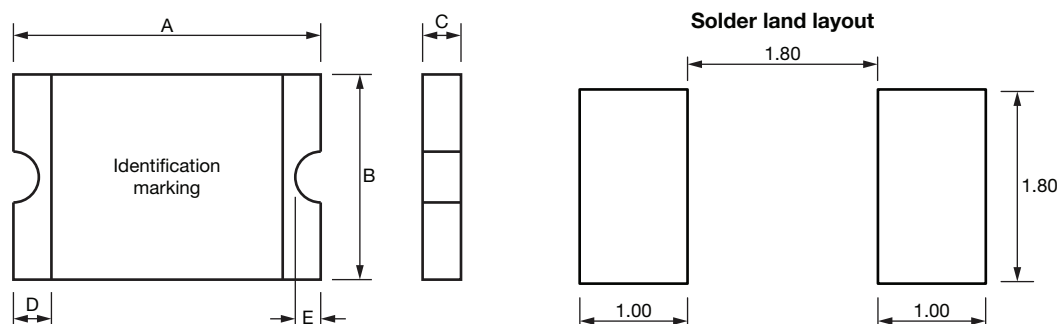
PACKAGING

Available in 8 mm tape on 178 mm reel, sealed in a plastic bag. Packaging quantity per reel: see table.

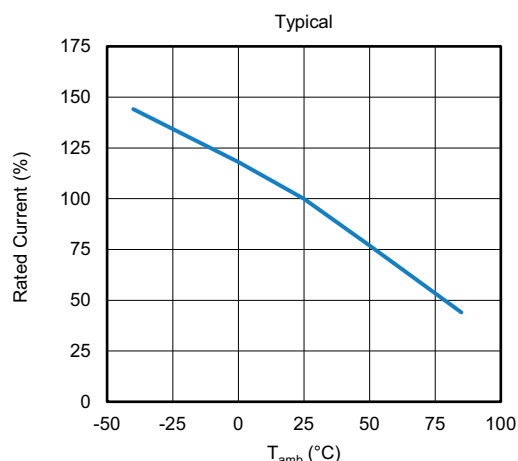
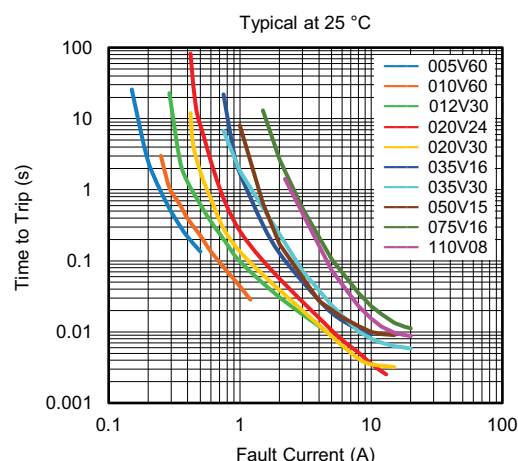
ELECTRICAL DATA AND ORDERING INFORMATION									
PART NUMBER	I_{hold} (A)	I_{trip} (A)	$V_{max.}$ (V _{DC})	$I_{max.}$ (A)	P_D TYP. (W)	MAX. TIME TO TRIP		RESISTANCE AT 25 °C	
						CURRENT (A)	TIME (s)	$R_{min.}$ (Ω)	R_1 max. (Ω)
PPTC1206E3005V60	0.05	0.15	60	10	0.6	0.25	1.5	3.60	20.0
PPTC1206E3010V60	0.10	0.25	60	10	0.6	0.50	1.5	1.50	10.0
PPTC1206E3012V30	0.13	0.29	30	100	0.6	1.0	0.20	1.50	6.0
PPTC1206E3020V24	0.20	0.42	24	100	0.6	8.0	0.10	0.65	2.6
PPTC1206E3020V30	0.20	0.42	30	100	0.6	8.0	0.10	0.65	2.6
PPTC1206E3035V16	0.35	0.75	16	100	0.6	8.0	0.10	0.30	1.20
PPTC1206E3035V30	0.35	0.75	30	100	0.6	8.0	0.10	0.30	1.20
PPTC1206E3050V15	0.50	1.00	15	100	0.6	8.0	0.10	0.15	0.75
PPTC1206E3075V16	0.75	1.50	16	100	0.6	8.0	0.20	0.09	0.29
PPTC1206E3110V08	1.10	2.20	8	100	0.8	8.0	0.10	0.04	0.21

**PERFORMANCE**

ENVIRONMENTAL SPECIFICATIONS	
Operating temperature	-40 °C to +85 °C
Storage condition	10 °C to 35 °C, ≤ 70 % RH, without condensation
Maximum device surface temperature in tripped state	125 °C
Passive aging	+85 °C, 1000 h ± 5 % typical resistance change
Humidity aging	+85 °C, 85 % RH, 1000 h ± 5 % typical resistance change
Thermal shock	MIL-STD-202 Method 107G +85 °C / -40 °C, 20 times -30 % typical resistance change
Solvent resistance	MIL-STD-202, Method 215 < ± 5 % resistance change
Vibration	MIL-STD-883C, Method 2007.1, Condition A < ± 5 % resistance change
Moisture sensitivity level	Level 1, J-STD-020C

DIMENSIONS AND MARKING in millimeters

COMPONENT DIMENSIONS in millimeters											
PART NUMBER	MARKING	A		B		C		D		E	
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
PPTC1206E3005V60	E6	3.0	3.4	1.5	1.8	0.65	1.25	0.25	0.75	0.05	0.45
PPTC1206E3010V60	G6	3.0	3.4	1.5	1.8	0.65	1.25	0.25	0.75	0.05	0.45
PPTC1206E3012V30	H3	3.0	3.4	1.5	1.8	0.65	1.45	0.25	0.75	0.05	0.45
PPTC1206E3020V24	K2	3.0	3.4	1.5	1.8	0.50	1.00	0.25	0.75	0.05	0.45
PPTC1206E3020V30	K3	3.0	3.4	1.5	1.8	0.50	1.00	0.25	0.75	0.05	0.45
PPTC1206E3035V16	N1	3.0	3.4	1.5	1.8	0.45	0.75	0.25	0.75	0.05	0.45
PPTC1206E3035V30	N3	3.0	3.4	1.5	1.8	0.50	1.00	0.25	0.75	0.05	0.45
PPTC1206E3050V15	O1	3.0	3.4	1.5	1.8	0.45	0.75	0.25	0.75	0.05	0.45
PPTC1206E3075V16	P2	3.0	3.4	1.5	1.8	0.75	1.25	0.25	0.75	0.05	0.45
PPTC1206E3110V08	R0	3.0	3.4	1.5	1.8	0.30	0.60	0.25	0.75	0.05	0.45

THERMAL DERATING**TIME TO TRIP CURVE**

RECOMMENDED HOLD CURRENT in Amperes

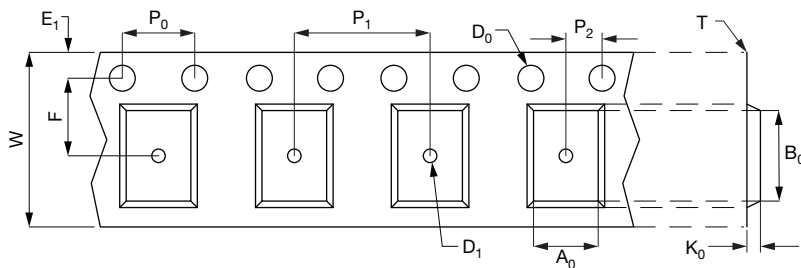
PART NUMBER	-40 °C	-20 °C	0 °C	25 °C	40 °C	50 °C	60 °C	70 °C	85 °C
PPTC1206E3005V60	0.076	0.068	0.06	0.050	0.043	0.039	0.034	0.03	0.023
PPTC1206E3010V60	0.156	0.139	0.12	0.10	0.083	0.074	0.065	0.056	0.042
PPTC1206E3012V30	0.18	0.16	0.14	0.13	0.100	0.090	0.08	0.07	0.05
PPTC1206E3020V24	0.28	0.25	0.23	0.20	0.170	0.150	0.14	0.12	0.09
PPTC1206E3020V30	0.28	0.25	0.23	0.20	0.170	0.150	0.14	0.12	0.09
PPTC1206E3035V16	0.50	0.45	0.40	0.35	0.300	0.270	0.24	0.21	0.15
PPTC1206E3035V30	0.50	0.45	0.40	0.35	0.300	0.270	0.24	0.21	0.15
PPTC1206E3050V15	0.71	0.64	0.57	0.50	0.420	0.390	0.35	0.31	0.25
PPTC1206E3075V16	1.14	1.01	0.88	0.75	0.650	0.590	0.54	0.49	0.41
PPTC1206E3110V08	1.64	1.46	1.30	1.10	0.920	0.830	0.80	0.65	0.52

Note

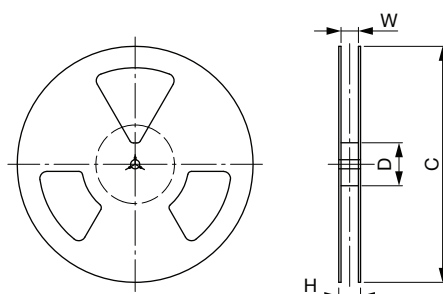
- Recommended hold currents prevail the thermal derating graph; hold and trip currents are depending on mounting

TAPE AND REEL DIMENSIONS

Taping on reel according to EIA-481.


TAPE DIMENSIONS in millimeters

PART NUMBER	W	F	E ₁	D ₀	D ₁	P ₀	P ₁	P ₂	A ₀	B ₀	K ₀	T
PPTC1206E3005V60	8.15 + 0.15 / - 0.3	3.5 ± 0.05	1.75 ± 0.10	1.55 ± 0.05	1.00 ± 0.10	4 ± 0.10	4 ± 0.10	2.0 ± 0.05	1.92 ± 0.10	3.65 ± 0.10	1.30 ± 0.10	0.25 ± 0.10
PPTC1206E3010V60												
PPTC1206E3012V30												
PPTC1206E3020V24	8.20 + 0.10 / - 0.3								1.95 ± 0.10		0.87 ± 0.10	0.20 ± 0.10
PPTC1206E3020V30												
PPTC1206E3035V16												
PPTC1206E3035V30	8.15 + 0.15 / - 0.3								1.92 ± 0.10		1.30 ± 0.10	0.25 ± 0.10
PPTC1206E3050V15	8.20 + 0.10 / - 0.3								1.95 ± 0.10		0.87 ± 0.10	0.20 ± 0.10
PPTC1206E3075V16	8.15 + 0.15 / - 0.3								1.92 ± 0.10		1.30 ± 0.10	0.25 ± 0.10
PPTC1206E3110V08	8.20 + 0.10 / - 0.3								1.95 ± 0.10		0.87 ± 0.10	0.20 ± 0.10


REEL DIMENSIONS in millimeters

C	D	H	W
$\varnothing 178 \pm 1.0$	$\varnothing 60.2 \pm 0.5$	11.0 ± 0.5	9.0 ± 1.5

PACKAGING QUANTITY

PART NUMBER	QUANTITY
PPTC1206E3005V60	3000
PPTC1206E3010V60	3000
PPTC1206E3012V30	3000
PPTC1206E3020V24	4000
PPTC1206E3020V30	4000
PPTC1206E3035V16	4000
PPTC1206E3035V30	3000
PPTC1206E3050V15	4000
PPTC1206E3075V16	3000
PPTC1206E3110V08	4000



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