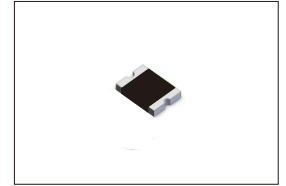


## DESCRIPTION

The SMD1206 Series PTC provides surface mount over-current protection for applications where space is at a premium and resettable protection is desired.



## FEATURES

- > RoHS compliant, Lead-Free and Halogen-Free
- > Fast time-to-trip
- > Compact design saves board space
- > Low resistance
- > Low-profile

## APPLICATIONS

- > PC motherboard - plug and play protection
- > Mobile phones - battery and port protection
- > Game console port protection
- > USB peripherals
- > Disk drive
- > PDAS / digital cameras
- > Power ports
- > General electronics

## ELECTRICAL PARAMETERS

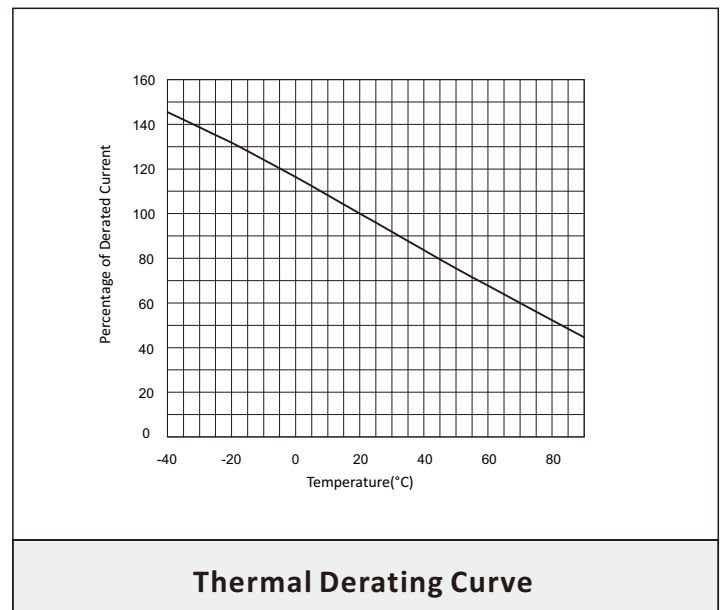
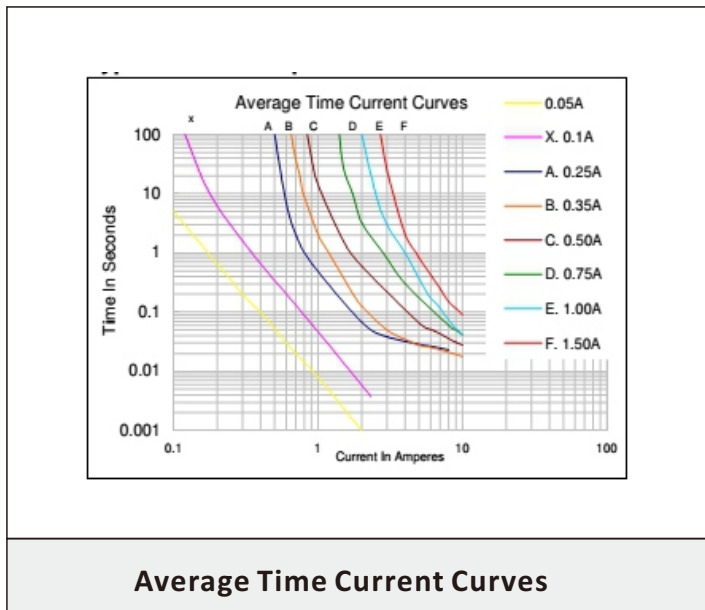
Part Number	Hold Current	Trip Current	Rated Voltage	Max Current	Typical Power	Maximum Time to Trip		Resistance	
	I <sub>hold</sub> (A)	I <sub>trip</sub> (A)	V <sub>max</sub> (V <sub>DC</sub> )	I <sub>max</sub> (A)	P <sub>dtyp</sub> (W)	Current (A)	Time (Sec)	R <sub>min</sub> (Ω)	R <sub>1max</sub> (Ω)
SMD1206-005	0.05	0.15	60	100	0.4	0.25	1.50	3.600	50.000
SMD1206-010	0.10	0.25	60	100	0.4	0.50	1.00	1.600	15.000
SMD1206-010/33	0.10	0.25	33	100	0.4	0.50	1.00	1.600	15.000
SMD1206-010/60	0.10	0.25	60	100	0.4	0.50	1.00	1.600	15.000
SMD1206-012	0.12	0.29	30	100	0.4	1.00	0.20	1.350	10.000
SMD1206-016	0.16	0.37	30	100	0.4	1.00	0.30	1.000	4.50
SMD1206-020	0.20	0.46	24	100	0.6	8.00	0.08	0.350	3.500
SMD1206-025	0.25	0.50	16	100	0.6	8.00	0.08	0.350	2.500
SMD1206-030	0.30	0.65	16	100	0.6	8.00	0.10	0.250	2.000
SMD1206-035	0.35	0.75	16	100	0.6	8.00	0.10	0.250	1.300
SMD1206-050	0.50	1.00	6	100	0.6	8.00	0.10	0.150	0.700
SMD1206-050/13.2	0.50	1.00	13.2	100	0.6	8.00	0.10	0.150	0.700
SMD1206-050/16	0.50	1.00	16	100	0.6	8.00	0.10	0.150	0.750
SMD1206-050/24	0.50	1.00	24	100	0.6	8.00	0.10	0.150	0.750
SMD1206-075	0.75	1.50	6	100	0.6	8.00	0.20	0.090	0.500
SMD1206-075/13.2	0.75	1.50	13.2	100	0.6	8.00	0.20	0.090	0.500
SMD1206-075/16	0.75	1.50	16	100	0.6	8.00	0.20	0.090	0.500
SMD1206-100	1.00	1.80	6	100	0.6	8.00	0.30	0.055	0.270
SMD1206-100/13.2	1.00	1.80	13.2	100	0.6	8.00	0.30	0.055	0.270
SMD1206-100/16	1.00	1.80	16	100	0.6	8.00	0.30	0.055	0.330
SMD1206-110	1.10	1.80	8	100	0.6	8.00	0.30	0.050	0.230
SMD1206-150	1.50	3.00	6	100	0.8	8.00	1.00	0.040	0.130
SMD1206-200	2.00	3.50	6	100	0.8	8.00	1.00	0.018	0.080



## ELECTRICAL PARAMETERS

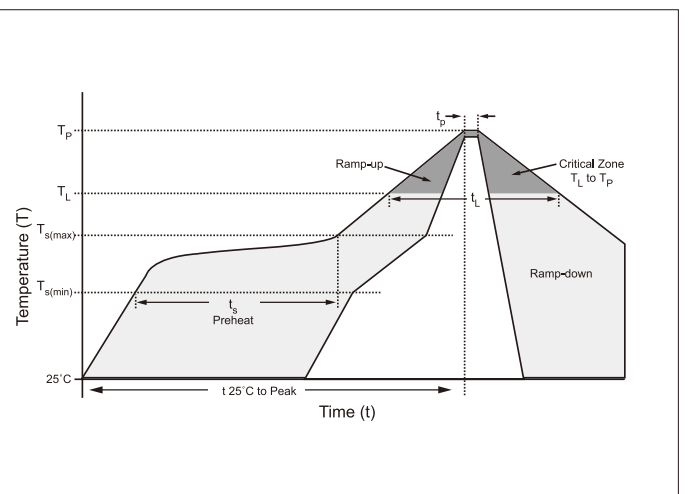
$I_{hold}$ =Hold current:maximum current device will pass without tripping in 25°C still air.  
 $I_{trip}$ =Trip current:maximum current at which the device will trip in 25°C still air.  
 $V_{max}$ =Maximum voltage device can withstand without damage at rated current( $I_{max}$ ).  
 $I_{max}$ =Maximum fault current device can withstand without damage at rated voltage( $V_{max}$ ).  
 $R_{dtyp}$ =Power dissipated from device when in the tripped state at 25°C still air.  
 $R_{min}$ =Minimum resistance of device in initial (un-soldered) state.  
 $R_{1max}$ =Maximum resistance of device at 25°C measured one hour after tripping.  
 Caution:Operation beyond the specified rating may result in damage and possible arcing and flame.

## CHARACTERISTIC CURVES

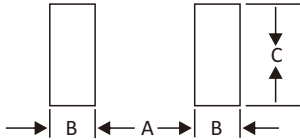


## REFLOW PROFILE

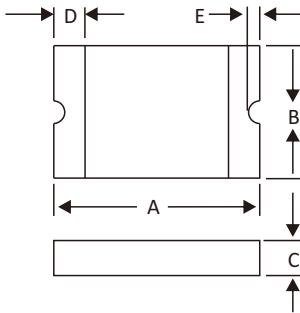
Reflow Condition		Lead-free assembly
Pre Heat	Temperature Min ( $T_s(min)$ )	150°C
	Temperature Max ( $T_s(max)$ )	200°C
	Time (min to max) ( $t_s$ )	60 – 180 secs
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3°C/second max
$T_s(max)$ to $T_L$ - Ramp-up Rate		3°C/second max
Reflow	Temperature ( $T_L$ ) (Liquidus)	217°C
	Time (min to max) ( $t_L$ )	60 – 150 seconds
Peak Temperature ( $T_P$ )		260°C
Time within 5°C of actual peak Temperature ( $t_p$ )		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature ( $T_P$ )		8 minutes Max.
Do not exceed		260°C



**PAD LAYOUTS(UNIT:mm)**

	Device	A	B	C
		Nominal	Nominal	Nominal
The dimension in the table below provide the recommended pad layout for each SMD1206 device	1206 Series	2.00	1.00	1.90

**DIMENSIONS(UNIT:mm)**



Part Number	A		B		C		D	E
	Min	Max	Min	Max	Min	Max	Min	Min
SMD1206-005	3.00	3.50	1.50	1.80	0.60	1.10	0.15	0.10
SMD1206-010	3.00	3.50	1.50	1.80	0.60	1.10	0.15	0.10
SMD1206-010/33	3.00	3.50	1.50	1.80	0.50	1.10	0.15	0.10
SMD1206-010/60	3.00	3.50	1.50	1.80	0.60	1.10	0.15	0.10
SMD1206-012	3.00	3.50	1.50	1.80	0.60	1.10	0.15	0.10
SMD1206-016	3.00	3.50	1.50	1.80	0.40	0.90	0.15	0.10
SMD1206-020	3.00	3.50	1.50	1.80	0.40	0.90	0.15	0.10
SMD1206-025	3.00	3.50	1.50	1.80	0.40	0.90	0.15	0.10
SMD1206-030	3.00	3.50	1.50	1.80	0.40	0.90	0.15	0.10
SMD1206-035	3.00	3.50	1.50	1.80	0.40	0.90	0.15	0.10
SMD1206-050	3.00	3.50	1.50	1.80	0.35	0.85	0.15	0.10
SMD1206-050/13.2	3.00	3.50	1.50	1.80	0.35	0.85	0.15	0.10
SMD1206-050/16	3.00	3.50	1.50	1.80	0.35	0.85	0.15	0.10
SMD1206-050/24	3.00	3.50	1.50	1.80	0.35	0.85	0.15	0.10
SMD1206-075	3.00	3.50	1.50	1.80	0.35	0.85	0.15	0.10
SMD1206-075/13.2	3.00	3.50	1.50	1.80	0.35	0.85	0.15	0.10
SMD1206-075/16	3.00	3.50	1.50	1.80	0.60	1.30	0.15	0.10
SMD1206-100	3.00	3.50	1.50	1.80	0.40	0.80	0.15	0.10
SMD1206-100/13.2	3.00	3.50	1.50	1.80	0.40	1.30	0.15	0.10
SMD1206-100/16	3.00	3.50	1.50	1.80	0.40	1.30	0.15	0.10



Part Number	A		B		C		D	E
	Min	Max	Min	Max	Min	Max	Min	Min
SMD1206-110	3.00	3.50	1.50	1.80	0.40	0.80	0.15	0.10
SMD1206-150	3.00	3.50	1.50	1.80	0.60	1.50	0.15	0.10
SMD1206-200	3.00	3.50	1.50	1.80	0.70	1.70	0.15	0.10

### I<sub>hold</sub> VERSUS TEMPERATURE

Part Number	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
SMD1206-005	0.09	0.08	0.06	0.05	0.04	0.036	0.033	0.029	0.02
SMD1206-010	0.18	0.16	0.12	0.10	0.08	0.072	0.066	0.058	0.04
SMD1206-010/33	0.18	0.16	0.12	0.10	0.08	0.072	0.066	0.058	0.04
SMD1206-010/60	0.18	0.16	0.12	0.10	0.08	0.072	0.066	0.058	0.04
SMD1206-012	0.216	0.192	0.144	0.12	0.096	0.086	0.079	0.070	0.048
SMD1206-016	0.288	0.256	0.192	0.160	0.128	0.115	0.106	0.093	0.064
SMD1206-020	0.31	0.26	0.22	0.20	0.18	0.16	0.15	0.13	0.07
SMD1206-025	0.37	0.33	0.29	0.25	0.22	0.20	0.17	0.15	0.12
SMD1206-030	0.444	0.396	0.348	0.30	0.264	0.24	0.204	0.18	0.144
SMD1206-035	0.50	0.45	0.40	0.35	0.30	0.27	0.24	0.21	0.15
SMD1206-050	0.71	0.64	0.57	0.50	0.42	0.39	0.35	0.31	0.25
SMD1206-050/13.2	0.71	0.64	0.57	0.50	0.42	0.39	0.35	0.31	0.25
SMD1206-050/16	0.71	0.64	0.57	0.50	0.42	0.39	0.35	0.31	0.25
SMD1206-050/24	0.639	0.576	0.513	0.50	0.378	0.351	0.315	0.279	0.225
SMD1206-075	1.14	1.01	0.88	0.75	0.65	0.59	0.54	0.49	0.41
SMD1206-100	1.45	1.31	1.15	1.00	0.84	0.77	0.69	0.61	0.48
SMD1206-100/13.2	1.305	1.179	1.035	1.00	0.759	0.693	0.621	0.549	0.432
SMD1206-100/16	1.305	1.179	1.035	1.00	0.759	0.693	0.621	0.549	0.432
SMD1206-110	1.595	1.441	1.265	1.10	0.924	0.847	0.759	0.671	0.528
SMD1206-150	2.18	1.94	1.72	1.50	1.28	1.17	1.06	0.96	0.77
SMD1206-200	2.60	2.44	2.35	2.00	1.78	1.67	1.50	1.45	1.10

Maximum ambient operating temperature (T<sub>a</sub>) vs. hold current(I<sub>hold</sub>)



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