

PolySwitch Resettable Devices

SMD1812 Series

Surface-Mount Devices

Rev Letter: C

Rev Date: 2012-4-05

Feature

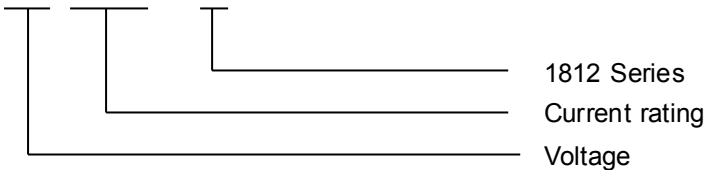
- Resettable overcurrent protection
- ROHS compliant
- Very small size of 1812
- Current rating from 0.10 to 2.60A
- Fast time-to-trip
- Small footprint
- Low resistance

Application

- Computer
- Battery
- Mobile phones
- Industrial controls
- Automotive
- Portable electronics
- Multimedia
- Game machines
- Telephony and broadband

Part Numbering

KT x x--x x x SMD



Typical Electrical Characteristics for SMD1812 Series at 25°C

Size 4532mm/1812mils

Part number	Hold Current & Trip Current (Amps)		Maximum Voltage (V)	Maximum Current (A)	Maximum Time-to-Trip		Minimum Resistance (Ohms)	One Hour Post Reflow Resistance (Ohms)	Tripped State Power Dissipation (Watts)
	Hold	Trip			(A)	(S)			
KT60-0140SMD	0.14	0.34	60	10	1.5	0.15	1.500	6.000	0.80
KT30-0100SMD	0.10	0.20	30	40	0.5	1.50	1.600	15.000	0.80
KT30-0200SMD	0.20	0.40	30	40	8.0	0.02	0.800	5.000	0.80
KT30-0350SMD	0.35	0.70	30	40	8.0	0.15	0.400	1.700	0.80
KT15-0500SMD	0.50	1.00	15	40	8.0	0.15	0.150	1.000	0.80
KT30-0500SMD	0.50	1.00	30	40	8.0	0.15	0.150	1.000	0.80
KT13-0750SMD	0.75	1.50	13.2	40	8.0	0.20	0.100	0.450	0.80

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KT24-0750SMD	0.75	1.50	24	40	8.0	0.20	0.100	0.450	0.80
KT33-0750SMD	0.75	1.50	33	40	8.0	0.20	0.100	0.400	0.80
KT8-1100SMD	1.10	2.20	8	40	8.0	0.30	0.060	0.210	0.80
KT16-1100SMD	1.10	2.20	16	40	8.0	0.30	0.060	0.210	0.80
KT24-1100SMD	1.10	2.20	24	40	8.0	0.50	0.060	0.210	0.80
KT33-1100SMD	1.10	2.20	33	20	8.0	0.50	0.060	0.210	1.00
KT6-1250SMD	1.25	2.50	6	40	8.0	0.40	0.050	0.140	1.00
KT16-1250SMD	1.25	2.50	16	40	8.0	0.40	0.050	0.140	1.00
KT12-1500SMD	1.50	3.00	12	40	8.0	0.50	0.040	0.110	1.00
KT24-1500SMD	1.50	3.00	24	40	8.0	1.50	0.040	0.110	1.00
KT8-1600SMD	1.60	3.20	8	40	8.0	1.00	0.030	0.100	1.00
KT24-1600SMD	1.60	3.20	24	40	8.0	1.00	0.030	0.100	1.00
KT6-2000SMD	2.00	4.00	6	40	8.0	2.00	0.020	0.070	1.00
KT8-2000SMD	2.00	4.00	8	40	8.0	2.00	0.020	0.070	1.00
KT12-2000SMD	2.00	4.00	12	40	8.0	2.00	0.020	0.070	1.20
KT8-2600SMD	2.60	5.00	8	40	8.0	2.50	0.015	0.047	1.00
KT12-2600SMD	2.60	5.00	12	40	8.0	2.50	0.015	0.047	1.20

Thermal Derating For SMD1812 series [Hold Current (A) at Ambient Temperature(°C)]

Size 4532mm/1812mils

Part number	Maximum Ambient Temperature									
	-40°C	-20°C	0°C	20°C	25°C	40°C	50°C	60°C	70°C	85°C
KT60-0140SMD	0.23	0.20	0.17	0.15	0.14	0.11	0.10	0.09	0.07	0.05
KT30-0100SMD	0.17	0.15	0.13	0.11	0.10	0.09	0.08	0.07	0.06	0.04
KT30-0200SMD	0.30	0.27	0.23	0.20	0.20	0.17	0.15	0.13	0.12	0.09
KT30-0350SMD	0.50	0.45	0.40	0.38	0.35	0.30	0.26	0.24	0.20	0.16
KT15-0500SMD	0.59	0.57	0.55	0.52	0.50	0.45	0.43	0.35	0.30	0.23
KT30-0500SMD	0.59	0.57	0.55	0.52	0.50	0.45	0.43	0.35	0.30	0.23
KT13-0750SMD	1.10	0.99	0.87	0.77	0.75	0.63	0.57	0.49	0.45	0.35
KT24-0750SMD	1.10	0.99	0.87	0.77	0.75	0.63	0.57	0.49	0.45	0.35
KT33-0750SMD	1.10	0.99	0.87	0.77	0.75	0.63	0.57	0.49	0.45	0.35
KT8-1100SMD	1.60	1.45	1.28	1.12	1.10	0.92	0.83	0.71	0.66	0.52

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KT16-1100SMD	1.60	1.45	1.28	1.12	1.10	0.92	0.83	0.71	0.66	0.52
KT24-1100SMD	1.60	1.45	1.28	1.12	1.10	0.92	0.83	0.71	0.66	0.52
KT33-1100SMD	1.60	1.45	1.28	1.12	1.10	0.92	0.83	0.71	0.66	0.52
KT6-1250SMD	2.00	1.69	1.47	1.27	1.25	1.03	0.92	0.90	0.69	0.53
KT16-1250SMD	2.00	1.69	1.47	1.27	1.25	1.03	0.92	0.90	0.69	0.53
KT12-1500SMD	2.30	2.05	1.77	1.52	1.50	1.23	1.09	0.95	0.82	0.61
KT24-1500SMD	2.30	2.05	1.77	1.52	1.50	1.23	1.09	0.95	0.82	0.61
KT8-1600SMD	2.50	2.19	1.89	1.62	1.60	1.31	1.16	1.10	0.95	0.71
KT24-1600SMD	2.50	2.19	1.89	1.62	1.60	1.31	1.16	1.10	0.95	0.71
KT6-2000SMD	2.60	2.44	2.22	2.02	2.00	1.78	1.67	1.50	1.45	1.29
KT8-2000SMD	2.60	2.44	2.22	2.02	2.00	1.78	1.67	1.50	1.45	1.29
KT12-2000SMD	2.60	2.44	2.22	2.02	2.00	1.78	1.67	1.50	1.45	1.29
KT8-2600SMD	3.40	3.16	2.8	2.62	2.60	2.32	2.18	2.00	1.90	1.69
KT12-2600SMD	3.40	3.16	2.8	2.62	2.60	2.32	2.18	2.00	1.90	1.69

Typical Product Dimensions in Millimeters(Inches)

Size 4532mm/1812 *mils*

Part number	A	B	C	D	E	Figures for Dimension
	Max.	Max.	Max.	Min.	Min.	
KT60-0140SMD	4.73(0.186)	3.41(0.134)	0.90(0.035)	0.25(0.010)	0.20(0.008)	1
KT30-0100SMD	4.73(0.186)	3.41(0.134)	0.90(0.035)	0.25(0.010)	0.20(0.008)	1
KT30-0200SMD	4.73(0.186)	3.41(0.134)	0.90(0.035)	0.25(0.010)	0.20(0.008)	1
KT30-0350SMD	4.73(0.186)	3.41(0.134)	0.90(0.035)	0.25(0.010)	0.20(0.008)	1
KT15-0500SMD	4.73(0.186)	3.41(0.134)	0.90(0.035)	0.25(0.010)	0.20(0.008)	1
KT30-0500SMD	4.73(0.186)	3.41(0.134)	1.20(0.047)	0.25(0.010)	0.20(0.008)	1
KT13-0750SMD	4.73(0.186)	3.41(0.134)	0.80(0.032)	0.25(0.010)	0.20(0.008)	1
KT24-0750SMD	4.73(0.186)	3.41(0.134)	1.40(0.055)	0.25(0.010)	0.20(0.008)	1
KT33-0750SMD	4.73(0.186)	3.41(0.134)	1.40(0.055)	0.25(0.010)	0.20(0.008)	1
KT8-1100SMD	4.73(0.186)	3.41(0.134)	1.00(0.039)	0.25(0.010)	0.20(0.008)	1
KT16-1100SMD	4.73(0.186)	3.41(0.134)	1.10(0.043)	0.25(0.010)	0.20(0.008)	1
KT24-1100SMD	4.73(0.186)	3.41(0.134)	1.40(0.055)	0.25(0.010)	0.20(0.008)	1
KT33-1100SMD	4.73(0.186)	3.41(0.134)	1.40(0.055)	0.25(0.010)	0.20(0.008)	1
KT6-1250SMD	4.73(0.186)	3.41(0.134)	1.10(0.043)	0.25(0.010)	0.20(0.008)	1

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KT16-1250SMD	4.73(0.186)	3.41(0.134)	1.10(0.043)	0.25(0.010)	0.20(0.008)	1
KT12-1500SMD	4.73(0.186)	3.41(0.134)	1.10(0.043)	0.25(0.010)	0.20(0.008)	1
KT24-1500SMD	4.73(0.186)	3.41(0.134)	1.40(0.055)	0.25(0.010)	0.20(0.008)	1
KT8-1600SMD	4.73(0.186)	3.41(0.134)	1.10(0.043)	0.25(0.010)	0.20(0.008)	1
KT24-1600SMD	4.73(0.186)	3.41(0.134)	1.40(0.055)	0.25(0.010)	0.20(0.008)	1
KT6-2000SMD	4.73(0.186)	3.41(0.134)	1.00(0.039)	0.25(0.010)	0.20(0.008)	1
KT8-2000SMD	4.73(0.186)	3.41(0.134)	1.00(0.039)	0.25(0.010)	0.20(0.008)	1
KT12-2000SMD	4.73(0.186)	3.41(0.134)	1.40(0.055)	0.25(0.010)	0.20(0.008)	1
KT8-2600SMD	4.73(0.186)	3.41(0.134)	1.40(0.055)	0.25(0.010)	0.20(0.008)	1
KT12-2600SMD	4.73(0.186)	3.41(0.134)	1.40(0.055)	0.25(0.010)	0.20(0.008)	1

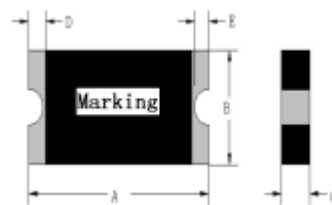
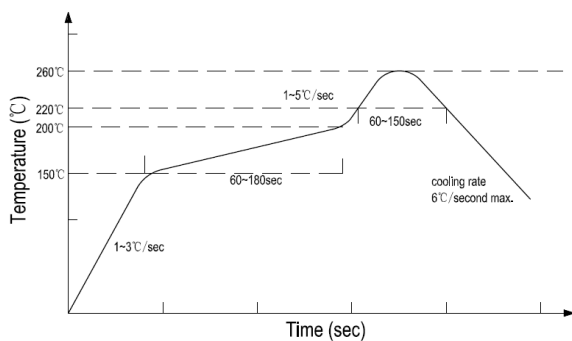
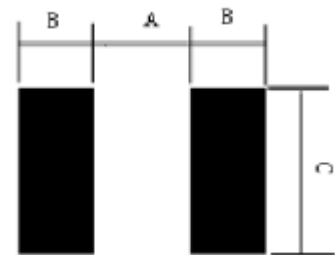


Figure 1

Solder Reflow Recommendation



Reflow -curve



Footprint(mm)

* Recommended reflow methods: IR, hot air oven, Nitrogen oven.

* Devices can be cleaned using standard industry methods and solvents.

Note:

If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

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Caution: Operation beyond the rated voltage or current may result in rupture electrical arcing or flame.

Environmental Specifications

- Recommended storage conditions: 40°C max, 70% R.H. max
- Thermal Shock: -40°C to 85°C, 30 min cycle, 20 cycles.
- Passive aging: 85°C, 1000 hours
- Vibration: per MIL-STD-883C
- Moisture Resistance: 85% RH, 85°C, 1000hrs
- Solder leach resistance and terminal adhesion: Per EIA-576 test

Packaging Information

Size 4532mm/1812mils

Part number	Tape & Reel Quantity	Tape spc code	Recommended Pad Layout Figures[mm(In.)]		
			Dimension A(Nom.)	Dimension B(Nom.)	Dimension C(Nom.)
KT60-0140SMD	2000	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT30-0100SMD	2000	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT30-0200SMD	2000	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT30-0350SMD	2000	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT15-0500SMD	2000	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT30-0500SMD	2000	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT13-0750SMD	2000	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT24-0750SMD	2000	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT33-0750SMD	2000	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT8-1100SMD	1500	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT16-1100SMD	1500	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT24-1100SMD	1500	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT33-1100SMD	1500	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT6-1250SMD	1500	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT16-1250SMD	1500	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT12-1500SMD	2000	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT24-1500SMD	1500	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT8-1600SMD	2000	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT24-1600SMD	1500	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT6-2000SMD	2000	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT8-2000SMD	2000	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)

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KT12-2000SMD	1500	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT8-2600SMD	1500	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)
KT12-2600SMD	1500	1812	3.10(0.122)	1.68(0.066)	2.95(0.114)



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 overcurrent or overtemperature 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.