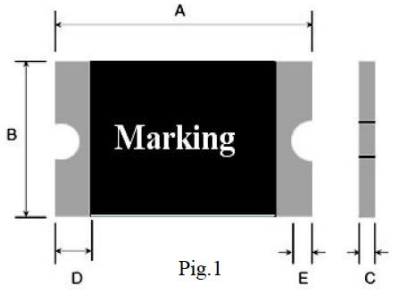
Resettable Fuse PTC SMD0603 Series

Features

RoHS Compliant & Halogen Free
faster tripping, 0603 Dimension, Surface mountable, Solid state
Operation Current: 0.03A~0.5A
Maximum Voltage: 6V~30Vdc
Operating Temperature：-40℃ to +85℃
Agency recognition:

Dimensions(1608mm / 0603 mils) Unit: mm



Pig.1

Terminal pad materials :Tin-Plated Nickle-copper
Terminal pad solderability : Meets EIA specification
RS 186-9E and ANSI/J-STD-002 Category 3.

Part number	Marking	A		B		C		D		E	TUV	Delivery Time	
		Min	max	Min	Max	Min	Max	Min	Max	Max	Certificate	in stock	Produce
JK-SMD0603-003	-	1.45	1.85	0.65	1.05	0.4	0.75	0.15	0.5	0.4	-	3days	18days
JK-SMD0603-004	-	1.45	1.85	0.65	1.05	0.4	0.75	0.15	0.5	0.4	-	3days	18days
JK-SMD0603-005	1	1.45	1.85	0.65	1.05	0.4	0.75	0.15	0.5	0.4	-	3days	18days
JK-SMD0603-010	1	1.45	1.85	0.65	1.05	0.4	0.75	0.15	0.5	0.4	-	3days	18days
JK-SMD0603-020	2	1.45	1.85	0.65	1.05	0.4	0.75	0.15	0.5	0.4	-	3days	18days
JK-SMD0603-025	2	1.45	1.85	0.65	1.05	0.4	1.00	0.15	0.5	0.4	-	3days	18days
JK-SMD0603-030	3	1.45	1.85	0.65	1.05	0.4	1.00	0.15	0.5	0.4	-	3days	18days
JK-SMD0603-035	3	1.45	1.85	0.65	1.05	0.4	1.00	0.15	0.5	0.4	-	3days	18days
JK-SMD0603-040	5	1.45	1.85	0.65	1.05	0.5	1.20	0.15	0.5	0.4	-	3days	18days
JK-SMD0603-050	5	1.45	1.85	0.65	1.05	0.5	1.20	0.15	0.5	0.4	-	3days	18days

Thermal Derating Chart-IH(A)

Maximum ambient operating temperatures ℃									
Part Number	**-40℃**	**-20℃**	**0℃**	**25℃**	**40℃**	**50℃**	**60℃**	**70℃**	**85℃**
JK-SMD0603-003	0.042	0.038	0.035	0.03	0.026	0.021	0.018	0.015	0.011
JK-SMD0603-003	0.056	0.05	0.046	0.04	0.034	0.028	0.024	0.02	0.014
JK-SMD0603-005	0.07	0.06	0.055	0.05	0.04	0.035	0.03	0.025	0.015
JK-SMD0603-010	0.14	0.12	0.11	0.10	0.08	0.07	0.06	0.05	0.03
JK-SMD0603-020	0.28	0.25	0.23	0.20	0.17	0.14	0.12	0.10	0.07
JK-SMD0603-025	0.35	0.31	0.29	0.25	0.21	0.18	0.15	0.13	0.09
JK-SMD0603-030	0.42	0.38	0.35	0.30	0.26	0.21	0.18	0.15	0.11
JK-SMD0603-035	0.47	0.44	0.39	0.35	0.30	0.27	0.24	0.20	0.14
JK-SMD0603-040	0.54	0.50	0.45	0.40	0.34	0.31	0.27	0.23	0.16
JK-SMD0603-050	0.67	0.63	0.56	0.50	0.43	0.39	0.34	0.29	0.20

Electrical characteristics(25℃)

Part Number	I Hold	I Trip	V max	I max	Pd Max	Maximum Time to Trip		Resistance（Ω）		**Delivery Time**		Certification
	A	A	DC	A	W	Current (A)	Time S	Ri min	R1 max	**in stock**	**Produce**	**TUV**
JK-SMD0603-003	0.03	0.09	30V	20	0.50	0.15	1	6.0	65.0	3days	18days	**Under Review**
JK-SMD0603-004	0.04	0.12	24V	20	0.50	0.2	1	4.0	45.0	3days	18days	**Under Review**
JK-SMD0603-005	0.05	0.15	24V	20	0.50	0.2	1	3.0	35.0	3days	18days	**Under Review**
JK-SMD0603-010	0.10	0.30	15V	40	0.50	0.5	1	0.9	8.0	3days	18days	**Under Review**
JK-SMD0603-020	0.20	0.40	9V	40	0.50	1.0	0.6	0.55	3.5	3days	18days	**Under Review**
JK-SMD0603-025	0.25	0.55	9V	40	0.50	8	0.08	0.50	3.0	3days	18days	**Under Review**
JK-SMD0603-030	0.30	0.70	6V	40	0.50	8	0.1	0.30	2.0	3days	18days	**Under Review**
JK-SMD0603-035	0.35	0.75	6V	40	0.50	8	0.1	0.20	1.40	3days	18days	**Under Review**
JK-SMD0603-040	0.4	0.80	6V	40	0.50	8	0.1	0.20	0.9	3days	18days	**Under Review**
JK-SMD0603-050	0.5	1.00	6V	40	0.50	8	0.1	0.1	0.8	3days	18days	**Under Review**

I_{hold} = Hold Current. Maximum current device will not trip in 25°C still air.

I_{trip} = Trip Current. Minimum current at which the device will always trip in 25°C still air.

V_{max} = Maximum operating voltage device can withstand without damage at rated current (Imax).

I_{max} = Maximum fault current device can withstand without damage at rated voltage (Vmax).

Pd=Maximum power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.

$Ri_{min/max}$ = Minimum/Maximum device resistance prior to tripping at 25°C.

$R1_{max}$ = Maximum device resistance is measured one hour post reflow.

Resettable Fuse PTC SMD0603 Series

Part number System

JK- SMD0603-XXX

- Holding Current Rating
- 0603 Dimension Surface Mount Device
- Our Mark

Test Procedures and Requirements

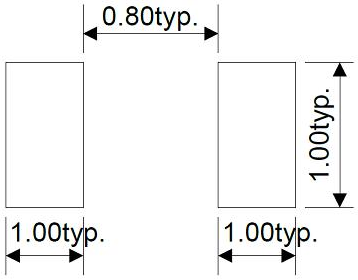
Test	Test Conditions	Accept/Reject Criteria
Resistance	In still air @ 25℃	$R_{min} \le R \le R_{max}$
Time to Trip	Specified current,Vmax，25℃	Tmaximum Time to Trip
Hold Current	30min ,at I_H	No trip
Trip Cycle Life	Vmax，Imax，100cycles	No arcing or burning
Trip Endurance	Vmax，1hours	No arcing or burning

Physical Characteristics	
Terminal materials :	Tin-Plated Nickle-copper
Soldering zone	Meets EIA specification RS 186-9E and ANSI/J-STD-002 Category 3.

Environmental Specifications

Test	Conditions	Resistance change
Passive aging	+85℃，1000hours	±10%
Humidity aging	+85℃/85%R.H.1000hours	±5%
Thermal shock	MIL-STD-202,Method 107G ,+85℃/-40℃,20times	-30% typical resistance change
Solvent Resistance	MIL-STD-202,Method 215	No change
Vibration	ML-STD-883C,Test Condition A	No change

Recommended Pad layout(mm)



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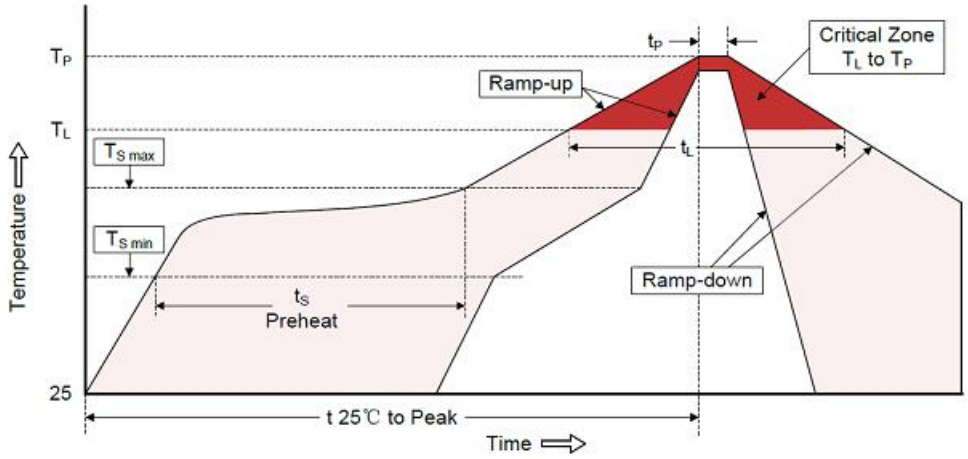
Solder reflow conditions



Solder reflow conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (TS maxto TP)	3℃/second max.
Preheat -Temperature Min (TS min) -Temperature Max (TS max) -Time (min to max) (TS min to TS max)	 150℃ 200℃ 60-180 seconds
Time maintained above: -Temperature (TL) -Time (tL)	 217℃ 60-150 seconds
Peak Temperature (TP)	260℃
Time within 5℃of actual PeakTemperature (tP)	20-40 seconds
Ramp-down Rate	3℃/second max.
Time 25℃to Peak Temperature	8 minutes max.
StorageCondition	0℃~35℃, ≤70%RH

·Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead-free

·Devices are not designed to be wave soldered to the bottom side of the board.

·Recommended maximum paste thickness is 0.25mm (0.010 inch)

·Device can be cleaned using standard industry methods and solvents.

Note : If reflow temperatures exceed the recommended profile, devices may not meet the performance Requirement

Packaging Quantity

Part Number	Quantity	Part Number	Quantity
JK-SMD0603-003	5000PCS	JK-SMD0603-025	5000PCS
JK-SMD0603-004	5000PCS	JK-SMD0603-030	5000PCS
JK-SMD0603-005	5000PCS	JK-SMD0603-035	5000PCS
JK-SMD0603-010	5000PCS	JK-SMD0603-040	4000PCS
JK-SMD0603-020	5000PCS	JK-SMD0603-050	4000PCS

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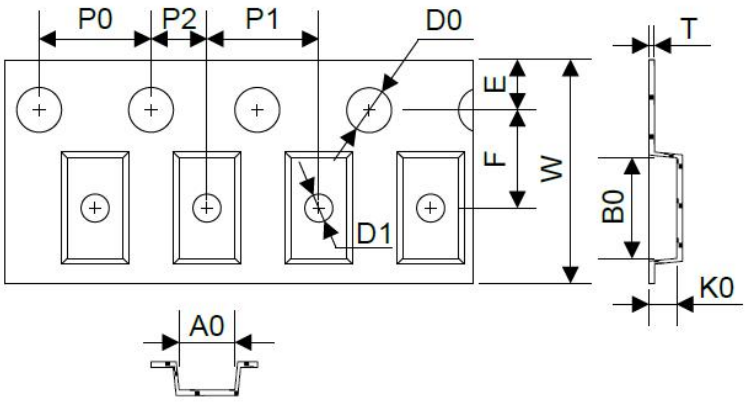
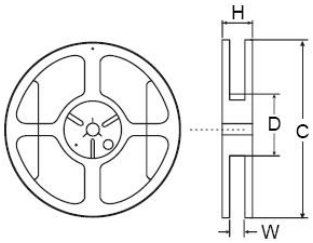
Tape Specification and Reel Dimensions

Tape



Symbol	Dimensions(mm)
W	8.00±0.30
F	3.50±0.05
E	1.75±0.10
D0	1.55±0.05
D1	0.50±0.10
P0	4.00±0.10
P1	4.00±0.10
P2	2.00±0.05
A0	1.10±0.10
B0	1.92±0.10
T	0.20±0.10
K0	0.75/0.95±0.10
Leader min	390
Trailer min	160

Reel



C	Φ178±1.0
D	Φ60.2±0.5
H	11.0±0.5
W	9.0±1.5

Storage

The maximum ambient temperature shall not exceed 38℃. Storage temperatures higher than 38℃ could result in the deformation of packaging materials. The maximum relative humidity recommended for storage is 60%. High humidity with high temperature can accelerate the oxidation of the solder plating on the termination and reduce the solderability of the components. Sealed plastic bags with desiccant shall be used to reduce the oxidation of the termination and shall only be opened prior to use. The products shall not be stored in areas where harmful gases containing sulfur or chlorine are present.

Warning

• Use PPTC beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame.

• PPTC 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.

• Device performance can be impacted negatively if devices are handled in a manner inconsistent with recommended electronic, thermal, and mechanical procedures for electronic components.

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Warning

• Use PPTC with a large inductance in circuit will generate a circuit voltage (L di/dt) above the rated voltage of the PPTC.
• Avoid impact PPTC device its thermal expansion like placed under pressure or installed in limited space.
• Contamination of the PPTC material with certain silicon based oils or some aggressive solvents can adversely impact the performance of the devices.PPTC SMD can be cleaned by standard methods.
• Requests that customers comply with our recommended solder pad layouts and recommended reflow profile. Improper board layouts or reflow profilecould negatively impact solderability performance of our devices.

Notes

The specification is intended to present application,product and technical data to assist the user in selecting PPTC circuit production devices,However,users should imdependently evaluate and test the suitability of each product.HUAAN makes on warranties as to the acduracy or completeness of the information and disclaims any liatility resulting form its use, HUAAN's only obligations are those im the HUAAN Standard Rerms and Conditions of Sale and in no case will HUAAN be liable for any incidental,imdirect,or consequential damages arising from the sale,resale,or misues of its products. HUAAN reserves the right to change of update, without notice, any information contained in this specification.