
APPROVAL SHEET

MODEL NO.:	SMD0805 Series
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CUSTOMER:

CUSTOMER'S APPROVAL:

AUTHORIZED SIGNATURE/STAMP:

DATE

Submitted by:	Chen
Approved by:	YC Lin
DATE:	14-Mar-24



SMD0805 Series

- Features**
- Surface Mount Devices
 - Lead free device
 - Size 2.0*1.2 mm / 0.08*0.05 inch
 - Surface Mount packaging for automated assembly

- Applications**
- Almost anywhere there is a low voltage power supply, up to 15V and a load to be protected, including:
- Computer mother board, Modem, USB hub
 - PDAs & Charger, Analog & digital line card
 - Digital cameras, Disk drivers, CD-ROMs,

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Performance Specification

Model	Marking	V _{max} (Vdc)	I _{max} (A)	I _{hold} @25°C (A)	I _{trip} @25°C (A)	P _d Typ. (W)	Maximum Time To Trip		Resistance		Agency Approval	
							Current (A)	Time (Sec)	R _i _{min} (Ω)	R ₁ _{max} (Ω)	UL	TUV
SMD0805-002	N	30	40	0.02	0.06	0.5	0.2	0.50	12.000	70.000		
SMD0805-002-60V	N	60	40	0.02	0.06	0.5	0.2	0.50	12.000	70.000		
SMD0805-003	T	30	40	0.03	0.10	0.5	0.2	1.00	6.000	50.000		
SMD0805-003-60V	T	60	40	0.03	0.10	0.5	0.2	1.00	6.000	50.000		
SMD0805-004	X	30	40	0.04	0.15	0.5	0.5	1.00	3.000	45.000		
SMD0805-005	V	15	100	0.05	0.20	0.5	0.5	1.50	2.000	15.000	✓	
SMD0805-005-24V	V	24	100	0.05	0.20	0.5	0.5	1.50	2.000	15.000	✓	
SMD0805-005-33V	V	33	100	0.05	0.20	0.5	0.5	1.50	2.000	15.000	✓	
SMD0805-005-48V	V	48	100	0.05	0.20	0.5	0.5	1.50	2.000	15.000		
SMD0805-005-60V	V	60	100	0.05	0.20	0.5	0.5	1.50	2.000	15.000	✓	
SMD0805-010	1	15	100	0.10	0.30	0.5	0.5	1.50	1.000	6.000	✓	
SMD0805-010-24V	1	24	100	0.10	0.30	0.5	0.5	1.50	1.000	6.000	✓	
SMD0805-010-33V	1	33	100	0.10	0.30	0.5	0.5	1.50	1.000	6.000	✓	
SMD0805-010-60V	1	60	100	0.10	0.30	0.5	0.5	1.50	1.000	6.000	✓	
SMD0805-020	2	9	100	0.20	0.50	0.5	8.0	0.02	0.650	3.500	✓	
SMD0805-020-13.2V	2	13.2	100	0.20	0.50	0.5	8.0	0.02	0.650	3.500		
SMD0805-020-16V	2	16	100	0.20	0.50	0.5	8.0	0.02	0.650	3.500		
SMD0805-020-24V	2	24	100	0.20	0.50	0.5	8.0	0.02	0.650	3.500		
SMD0805-025	2	9	100	0.25	0.55	0.5	8.0	0.02	0.600	3.000		
SMD0805-025-13.2V	2	13.2	100	0.25	0.55	0.5	8.0	0.02	0.600	3.000		
SMD0805-025-16V	2	16	100	0.25	0.55	0.5	8.0	0.02	0.600	3.000		
SMD0805-035	3	6	100	0.35	0.75	0.5	8.0	0.10	0.250	1.200	✓	
SMD0805-035-12V	3	12	100	0.35	0.75	0.5	8.0	0.10	0.250	1.200		
SMD0805-035-13.2V	3	13.2	100	0.35	0.75	0.5	8.0	0.10	0.250	1.200		
SMD0805-035-16V	3	16	100	0.35	0.75	0.5	8.0	0.10	0.250	1.200		
SMD0805-050	5	6	100	0.50	1.00	0.5	8.0	0.10	0.150	0.850	✓	
SMD0805-050-12V	5	12	100	0.50	1.00	0.5	8.0	0.10	0.150	0.850	✓	
SMD0805-050-13.2V	5	13.2	100	0.50	1.00	0.5	8.0	0.10	0.150	0.850	✓	
SMD0805-050-16V	5	16	100	0.50	1.00	0.5	8.0	0.10	0.150	0.850	✓	
SMD0805-050-24V	5	24	100	0.50	1.00	0.5	8.0	0.10	0.150	0.850		
SMD0805-075	7	6	40	0.75	1.50	0.6	8.0	0.20	0.090	0.385	✓	
SMD0805-075-12V	7	12	40	0.75	1.50	0.6	8.0	0.20	0.090	0.385		
SMD0805-100	0	6	100	1.00	1.95	0.6	8.0	0.30	0.060	0.230	✓	✓
SMD0805-110	0	6	100	1.10	2.20	0.6	8.0	0.30	0.060	0.210	✓	
SMD0805-125	12	6	100	1.25	2.50	1.5	8.0	0.60	0.030	0.140	✓	

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 (I_{max}).
I_{max} = Maximum fault current device can withstand without damage at rated voltage (V_{max}).
P_d = Power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.
R_{imin}/R_{imax} = Minimum/Maximum device resistance prior to tripping at 25°C.
R_{1max} = Maximum device resistance is measured one hour post reflow.
CAUTION : Operation beyond the specified ratings may result in damage and possible arcing and flame.

Environmental Specifications

Test	Conditions
Passive aging	+85°C, 1000 hrs.
Humidity aging	+85°C, 85% R.H. , 168 hours
Thermal shock	+85°C to -40°C, 20 times
Resistance to solvent	MIL-STD-202, Method 215
Vibration	MIL-STD-202, Method 201
Ambient operating conditions : - 40 °C to +85 °C	
Maximum surface temperature of the device in the tripped state is 125 °C	
In case of special use, please contact our engineer	

Agency Approvals :



E201504(Alpha-Top)/E319079(Sea&Land)



NO. R 50141892

Regulation/Standard:



2015/863/EU

Regulation/Standard:



EN14582

SMD0805 Series

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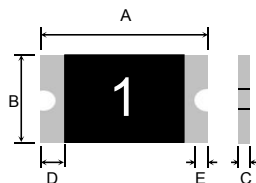
I_{hold} Versus Temperature

Model	Maximum ambient operating temperature (T _{max}) vs. hold current (I _{hold})									
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C	
SMD0805-002	0.030	0.027	0.024	0.020	0.017	0.016	0.014	0.012	0.010	
SMD0805-003	0.045	0.039	0.035	0.030	0.025	0.023	0.020	0.017	0.012	
SMD0805-004	0.059	0.053	0.047	0.040	0.034	0.031	0.027	0.023	0.018	
SMD0805-005	0.078	0.068	0.060	0.050	0.042	0.038	0.034	0.030	0.021	
SMD0805-010	0.140	0.120	0.110	0.100	0.080	0.070	0.060	0.050	0.030	
SMD0805-020	0.280	0.250	0.230	0.200	0.170	0.140	0.120	0.100	0.070	
SMD0805-025	0.350	0.310	0.270	0.250	0.220	0.190	0.160	0.140	0.110	
SMD0805-035	0.470	0.440	0.390	0.350	0.300	0.270	0.240	0.200	0.140	
SMD0805-050	0.680	0.620	0.550	0.500	0.400	0.370	0.330	0.290	0.230	
SMD0805-075	1.000	0.900	0.790	0.750	0.630	0.570	0.530	0.410	0.340	
SMD0805-100	1.350	1.250	1.150	1.000	0.820	0.740	0.650	0.550	0.420	
SMD0805-110	1.450	1.350	1.200	1.100	0.920	0.840	0.750	0.650	0.520	
SMD0805-125	1.648	1.534	1.364	1.250	1.045	0.955	0.852	0.739	0.591	

Construction And Dimension (Unit:mm)

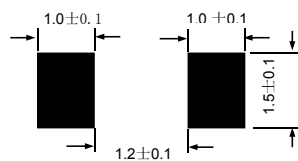
Model	A		B		C		D	E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.
SMD0805-002	1.90	2.20	1.20	1.50	0.60	1.30	0.20	0.10
SMD0805-003	1.90	2.20	1.20	1.50	0.60	1.30	0.20	0.10
SMD0805-004	1.90	2.20	1.20	1.50	0.60	1.30	0.20	0.10
SMD0805-005	1.90	2.20	1.20	1.50	0.50	1.00	0.20	0.10
SMD0805-005-24V	1.90	2.20	1.20	1.50	0.60	1.30	0.20	0.10
SMD0805-005-33V	1.90	2.20	1.20	1.50	0.60	1.50	0.20	0.10
SMD0805-005-48V	1.90	2.20	1.20	1.50	0.60	1.50	0.20	0.10
SMD0805-005-60V	1.90	2.20	1.20	1.50	0.60	1.50	0.20	0.10
SMD0805-010	1.90	2.20	1.20	1.50	0.50	1.00	0.20	0.10
SMD0805-010-24V	1.90	2.20	1.20	1.50	0.60	1.30	0.20	0.10
SMD0805-010-33V	1.90	2.20	1.20	1.50	0.60	1.50	0.20	0.10
SMD0805-010-60V	1.90	2.20	1.20	1.50	0.60	1.50	0.20	0.10
SMD0805-020	1.90	2.20	1.20	1.50	0.50	1.00	0.20	0.10
SMD0805-020-13.2V	1.90	2.20	1.20	1.50	0.50	1.20	0.20	0.10
SMD0805-020-16V	1.90	2.20	1.20	1.50	0.50	1.20	0.20	0.10
SMD0805-020-24V	1.90	2.20	1.20	1.50	0.50	1.20	0.20	0.10
SMD0805-025	1.90	2.20	1.20	1.50	0.50	1.00	0.20	0.10
SMD0805-025-13.2V	1.90	2.20	1.20	1.50	0.50	1.20	0.20	0.10
SMD0805-025-16V	1.90	2.20	1.20	1.50	0.50	1.20	0.20	0.10
SMD0805-035	1.90	2.20	1.20	1.50	0.50	1.00	0.20	0.10
SMD0805-035-12V	1.90	2.20	1.20	1.50	0.50	1.00	0.20	0.10
SMD0805-035-13.2V	1.90	2.20	1.20	1.50	0.50	1.20	0.20	0.10
SMD0805-035-16V	1.90	2.20	1.20	1.50	0.50	1.20	0.20	0.10
SMD0805-050	1.90	2.20	1.20	1.50	0.50	1.10	0.20	0.10
SMD0805-050-12V	1.90	2.20	1.20	1.50	0.50	1.10	0.20	0.10
SMD0805-050-13.2V	1.90	2.20	1.20	1.50	0.50	1.20	0.20	0.10
SMD0805-050-16V	1.90	2.20	1.20	1.50	0.50	1.20	0.20	0.10
SMD0805-050-24V	1.90	2.20	1.20	1.50	0.50	1.20	0.20	0.10
SMD0805-075	1.90	2.20	1.20	1.50	0.50	1.10	0.20	0.10
SMD0805-075-12V	1.90	2.20	1.20	1.50	0.50	1.20	0.20	0.10
SMD0805-100	1.90	2.20	1.20	1.50	0.50	1.10	0.20	0.10
SMD0805-110	1.90	2.20	1.20	1.50	0.50	1.10	0.20	0.10
SMD0805-125	1.90	2.20	1.20	1.50	0.50	1.20	0.20	0.10

Dimensions & Marking



1 = Part identification

Recommended Pad Layout (mm)





SMD0805 Series

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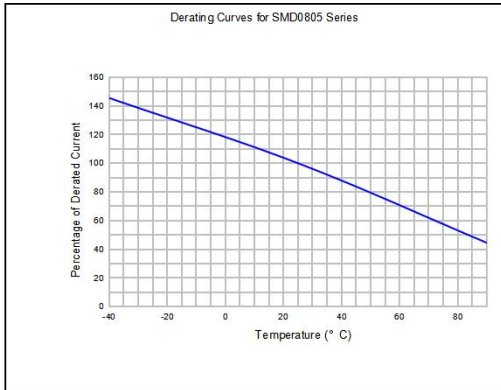
Termination Pad Characteristics

Terminal pad materials : Tin-plated Nickel-Copper
Terminal pad solderability : Meets EIA specification RS186-9E and ANSI/J-STD-002 Category 3.

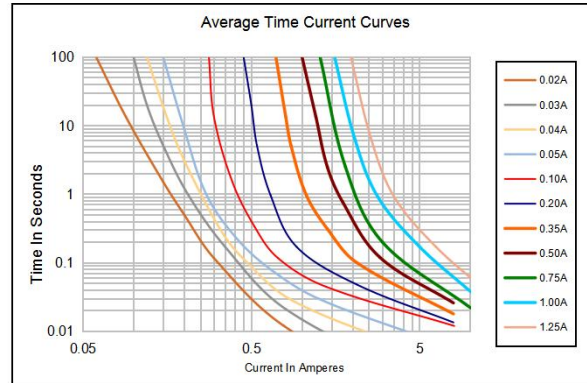
Rework

Use standard industry practices, the removal device must be replaced with a fresh one.

Thermal Derating Curve



Typical Time-To-Trip At 25°C



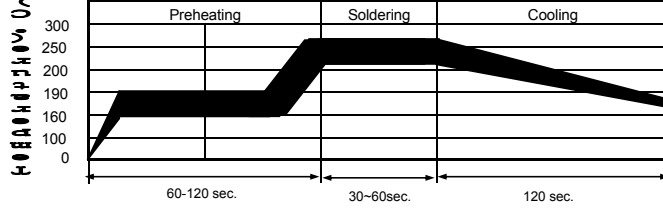
WARNING:

- 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.
- 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 profile could negatively impact solderability performance of our devices.

SMD0805 Series

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Recommended Solder Reflow Conditions

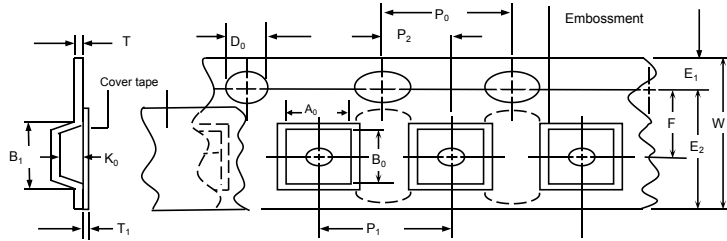


- Recommended reflow methods : IR, vapor phase oven, hot air oven.
- Devices are not designed to be wave soldered to the bottom side of the board.
- Recommended maximum paste thickness is 0.25 mm (0.010 inch).
- Devices can be cleaned using standard method and solvents.
- Note : If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

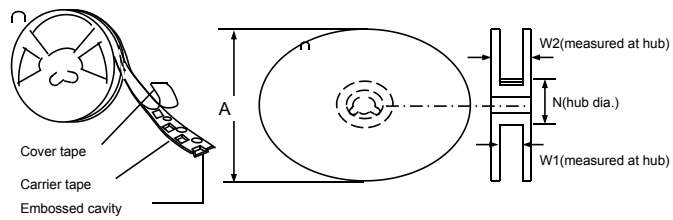
Tape And Reel Specifications (mm)

Governing Specifications	EIA 481-1
W	8.0 ± 0.3
P0	4.0 ± 0.10
P1	4.0 ± 0.10
P2	2.0 ± 0.05
A0	1.45 ± 0.10
B0	2.30 ± 0.10
B1max.	4.35
D0	1.55 + 0.1, -0
F	3.5 ± 0.05
E1	1.75 ± 0.10
E2min.	6.25
T	0.25
T1max.	0.1
K0	0.74 ± 0.1
Leader min.	390
Trailer min.	160
Reel Dimensions	
A max.	178
N min.	60
W1	9.0 ± 0.5
W2	12.0 ± 0.05

EIA Tape Component Dimensions



EIA Reel Dimensions



Storage And Handling

- Storage conditions : 40°C max, 70% R.H.
- Devices may not meet specified performance if storage conditions are exceeded.

Order Information

Packaging

SMD0805	010	Tape & Reel Quantity	
Product name	Hold	050-24V, 075-12V, 100, 110, 125	4,000 pcs/reel
Size 2012 mm / 0805 inch	Current	The others	5,000 pcs/reel
SMD: surface mount device	0.10A		

Tape & reel packaging per EIA481-1