JSMD 1812 LoR Series Surface Mount PTC Devices

Performance Specification

Model	Marking	V_{max} (V dc)	I_{max} (A)	I_{hold} @25°C (A)	I_{trip} @25°C (A)	P_d Typ. (W)	Maximum Time To Trip		Resistance	
							Current (A)	Time (Sec)	$R_{i\,min}$ (Ω)	R1max (Ω)
JSMD1812-260L/12	260L	12.0	50.0	2.6	5.2	1.2	8.0	5.0	0.004	0.024
JSMD1812-300L	300L	6.0	50.0	3.0	6.0	1.2	15.0	2.0	0.0035	0.022
JSMD1812-300L/12	300L	12.0	50.0	3.0	6.0	1.2	15.0	2.0	0.0035	0.022
JSMD1812-350L	350	6.0	50.0	3.5	7.0	1.2	17.5	2.0	0.003	0.02
JSMD1812-350L/12	350	12.0	50.0	3.5	7.0	1.2	17.5	2.0	0.003	0.02
JSMD1812-400L	400	6.0	50.0	4.0	8.0	1.2	20.0	2.0	0.0025	0.018
JSMD1812-400L/12	400	12.0	50.0	4.0	8.0	1.2	20.0	2.0	0.0025	0.018
JSMD1812-450L	450	6.0	50.0	4.5	9.0	1.2	22.5	2.0	0.002	0.016
JSMD1812-450L/12	450	12.0	50.0	4.5	9.0	1.2	22.5	2.0	0.002	0.016
JSMD1812-500L	500	6.0	50.0	5.0	10.0	1.2	25.0	2.0	0.0015	0.014
JSMD1812-500L/12	500	12.0	50.0	5.0	10.0	1.2	25.0	2.0	0.0015	0.014
JSMD1812-550L	550	6.0	50.0	5.5	11.0	1.2	27.5	2.0	0.0012	0.012
JSMD1812-550L/12	550	12.0	50.0	5.5	11.0	1.2	27.5	2.0	0.0012	0.012
JSMD1812-600L	600	6.0	50.0	6.0	12.0	1.2	30.0	2.0	0.001	0.01
JSMD1812-600L/12	600	12.0	50.0	6.0	12.0	1.2	30.0	2.0	0.001	0.01
JSMD1812-650L	650	6.0	50.0	6.5	13.0	1.2	32.5	2.0	0.0009	0.009
JSMD1812-650L/12	650	12.0	50.0	6.5	13.0	1.2	32.5	2.0	0.0009	0.009
JSMD1812-700L	700	6.0	50.0	7.0	14.0	1.2	35.0	2.0	0.0008	0.0085
JSMD1812-700L/12	700	12.0	50.0	7.0	14.0	1.2	35.0	2.0	0.0008	0.0085
JSMD1812-750L	750	6.0	50.0	7.5	15.0	1.2	37.5	2.0	0.0008	0.008
JSMD1812-750L/12	750	12.0	50.0	7.5	15.0	1.2	37.5	2.0	0.0008	0.008
JSMD1812-800L	800	6.0	50.0	8.0	16.0	1.2	40.0	2.0	0.0007	0.007
JSMD1812-800L/12	800	12.0	50.0	8.0	16.0	1.2	40.0	2.0	0.0007	0.007
JSMD1812-850L	850	6.0	50.0	8.5	17.0	1.2	42.5	2.0	0.0006	0.006
JSMD1812-850L/12	850	12.0	50.0	8.5	17.0	1.2	42.5	2.0	0.0006	0.006
JSMD1812-900L	900	6.0	50.0	9.0	18.0	1.2	45.0	2.0	0.0005	0.005
JSMD1812-900L/12	900	12.0	50.0	9.0	18.0	1.2	45.0	2.0	0.0005	0.005

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).

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.

Pd = 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 at25°C.

R1max = 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	Resistance change
Passive aging	+85°C, 1000 hrs.	±5% typical
Humidity aging	+85°C, 85% R.H. , 168 hours	±5% typical
Thermal shock	+85°C to -40°C, 20 times	±33% typical
Resistance to solvent	MIL-STD-202,Method 215	No change
Vibration	MIL-STD-202,Method 201	No change
Ambient operating conditions : - 40 °C to +85 °C		
Maximum surface temperature of the device in the tripped state is 125 °C		

Agency Approval and Environmental Complianc

Agency	File Number	Regulation	Standard
UL	E486890	Pb RoHS	2011/65/EU
TUV	pending	HF	EN14582

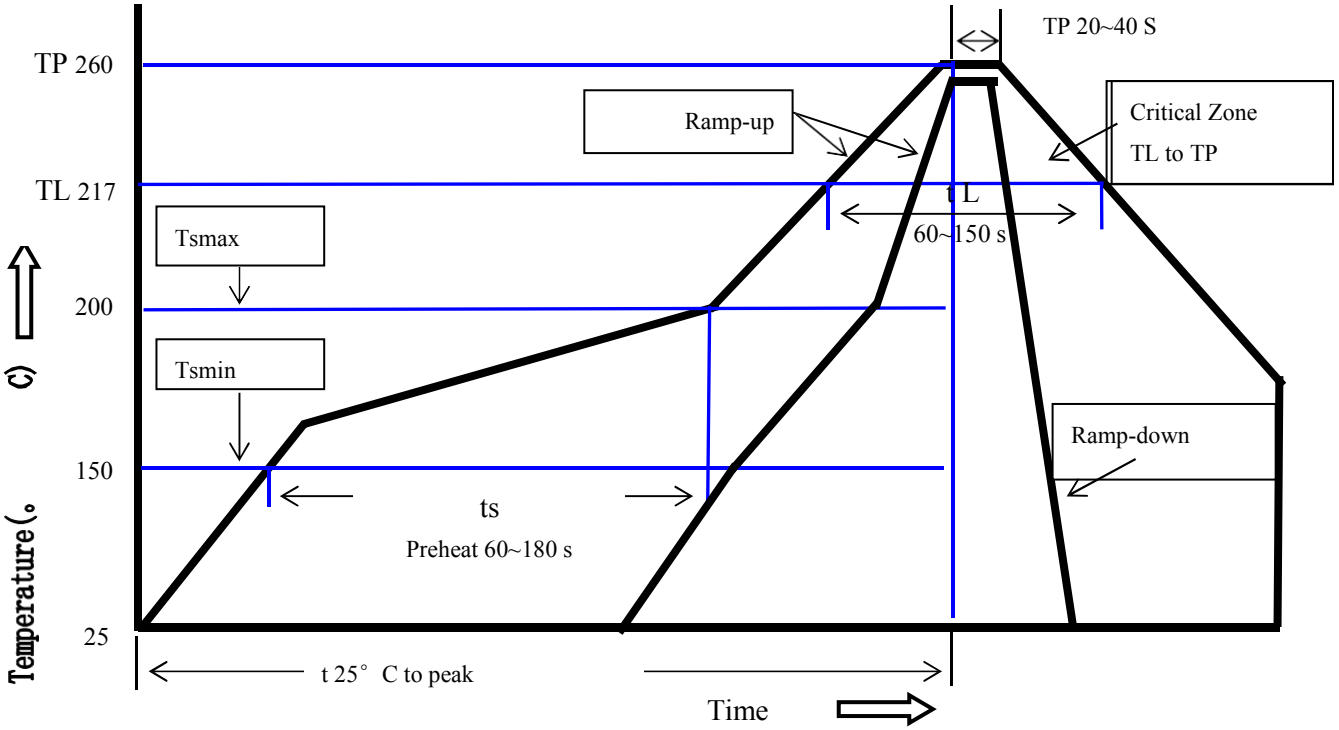
Thermal Derading Chart

Model	Ambient Operation Temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
JSMD1812-260L/12	3.78	3.38	3.04	2.6	2.23	2.0	1.79	1.61	1.3
JSMD1812-300L	4.35	3.9	3.51	3.0	2.58	2.31	2.07	1.86	1.5
JSMD1812-300L/12	4.35	3.9	3.51	3.0	2.58	2.31	2.07	1.86	1.5
JSMD1812-350L	5.08	4.55	4.1	3.5	3.01	2.7	2.42	2.17	1.75
JSMD1812-350L/12	5.08	4.55	4.1	3.5	3.01	2.7	2.42	2.17	1.75
JSMD1812-400L	5.8	5.2	4.68	4.0	3.44	3.08	2.76	2.48	2.0
JSMD1812-400L/12	5.8	5.2	4.68	4.0	3.44	3.08	2.76	2.48	2.0
JSMD1812-450L	6.54	5.85	5.26	4.5	3.86	3.46	3.1	2.79	2.25
JSMD1812-450L/12	6.54	5.85	5.26	4.5	3.86	3.46	3.1	2.79	2.25
JSMD1812-500L	7.26	6.5	5.84	5.0	4.29	3.84	3.45	3.11	2.5
JSMD1812-500L/12	7.26	6.5	5.84	5.0	4.29	3.84	3.45	3.11	2.5
JSMD1812-550L	7.99	7.15	6.43	5.5	4.72	4.23	3.79	3.42	2.75
JSMD1812-550L/12	7.99	7.15	6.43	5.5	4.72	4.23	3.79	3.42	2.75
JSMD1812-600L	8.72	7.8	7.01	6.0	5.15	4.61	4.14	3.73	3.0
JSMD1812-600L/12	8.72	7.8	7.01	6.0	5.15	4.61	4.14	3.73	3.0
JSMD1812-650L	9.44	8.45	7.59	6.5	5.58	4.99	4.48	4.04	3.25
JSMD1812-650L/12	9.44	8.45	7.59	6.5	5.58	4.99	4.48	4.04	3.25
JSMD1812-700L	10.17	9.1	8.18	7.0	6.01	5.38	4.83	4.35	3.5
JSMD1812-700L/12	10.17	9.1	8.18	7.0	6.01	5.38	4.83	4.35	3.5
JSMD1812-750L	10.89	9.75	8.76	7.5	6.44	5.76	5.18	4.66	3.75

JSMD1812-750L/12	10.89	9.75	8.76	7.5	6.44	5.76	5.18	4.66	3.75
JSMD1812-800L	11.62	10.4	9.34	8.0	6.87	6.15	5.52	4.97	4.0
JSMD1812-800L/12	11.62	10.4	9.34	8.0	6.87	6.15	5.52	4.97	4.0
JSMD1812-850L	12.34	11.05	9.93	8.5	7.3	6.53	5.87	5.28	4.25
JSMD1812-850L/12	12.34	11.05	9.93	8.5	7.3	6.53	5.87	5.28	4.25
JSMD1812-900L	13.07	11.7	10.51	9.0	7.73	6.92	6.21	5.59	4.5
JSMD1812-900L/12	13.07	11.7	10.51	9.0	7.73	6.92	6.21	5.59	4.5

Recommended Hold Current(A) at Ambient Temperature(°C)

Soldering Parameters



Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate(Ts max to T p)	3℃/second mac.
Preheat -Temperature Min(Ts min) -Temperature Max(Ts max) -Time(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℃
Ramp-Down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8 minutes max
Storage Condition	0℃~35℃,≤70%RH

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

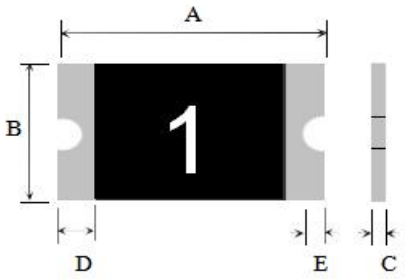
Recommended maximum paste thickness is 0.25mm

Devices can be cleaned using standard industry methods and solvents.

Note 1:All temperature refer to topside of the package, measured on the package body surface.

Note 2: If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

Physical Dimensions(mm.)



Model	A		B		C		D	E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.
JSMD1812-260L/12	4.37	4.73	3.07	3.41	0.3	0.7	0.3	0.15
JSMD1812-300L	4.37	4.73	3.07	3.41	0.3	0.7	0.3	0.15
JSMD1812-300L/12	4.37	4.73	3.07	3.41	0.3	0.7	0.3	0.15
JSMD1812-350L	4.37	4.73	3.07	3.41	0.3	0.7	0.3	0.15
JSMD1812-350L/12	4.37	4.73	3.07	3.41	0.3	0.7	0.3	0.15
JSMD1812-400L	4.37	4.73	3.07	3.41	0.3	0.7	0.3	0.15
JSMD1812-400L/12	4.37	4.73	3.07	3.41	0.3	0.7	0.3	0.15
JSMD1812-450L	4.37	4.73	3.07	3.41	0.3	0.7	0.3	0.15
JSMD1812-450L/12	4.37	4.73	3.07	3.41	0.3	0.7	0.3	0.15
JSMD1812-500L	4.37	4.73	3.07	3.41	0.3	0.7	0.3	0.15

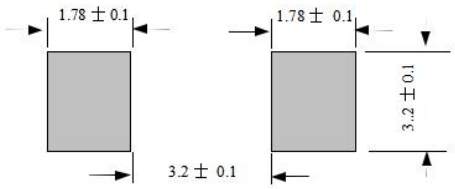
JSMD1812-500L/12	4.37	4.73	3.07	3.41	0.3	0.7	0.3	0.15
JSMD1812-550L	4.37	4.73	3.07	3.41	0.3	0.7	0.3	0.15
JSMD1812-550L/12	4.37	4.73	3.07	3.41	0.3	0.7	0.3	0.15
JSMD1812-600L	4.37	4.73	3.07	3.41	0.4	1.1	0.3	0.15
JSMD1812-600L/12	4.37	4.73	3.07	3.41	0.4	1.1	0.3	0.15
JSMD1812-650L	4.37	4.73	3.07	3.41	0.4	1.1	0.3	0.15
JSMD1812-650L/12	4.37	4.73	3.07	3.41	0.4	1.1	0.3	0.15
JSMD1812-700L	4.37	4.73	3.07	3.41	0.4	1.1	0.3	0.15
JSMD1812-700L/12	4.37	4.73	3.07	3.41	0.4	1.1	0.3	0.15
JSMD1812-750L	4.37	4.73	3.07	3.41	0.4	1.1	0.3	0.15
JSMD1812-750L/12	4.37	4.73	3.07	3.41	0.4	1.1	0.3	0.15
JSMD1812-800L	4.37	4.73	3.07	3.41	0.5	1.4	0.3	0.15
JSMD1812-800L/12	4.37	4.73	3.07	3.41	0.5	1.4	0.3	0.15
JSMD1812-850L	4.37	4.73	3.07	3.41	0.5	1.4	0.3	0.15
JSMD1812-850L/12	4.37	4.73	3.07	3.41	0.5	1.4	0.3	0.15
JSMD1812-900L	4.37	4.73	3.07	3.41	0.5	1.4	0.3	0.15
JSMD1812-900L/12	4.37	4.73	3.07	3.41	0.5	1.4	0.3	0.15

Termination Pad Characteristics

Terminal pad materials：Tin-plated Nickel-Copper

Terminal pad solder ability：Meets EIA specification RS186-9E and ANSI/J-STD-002 Category 3

Recommended Pad Layout (mm.)



Packaging Quantity

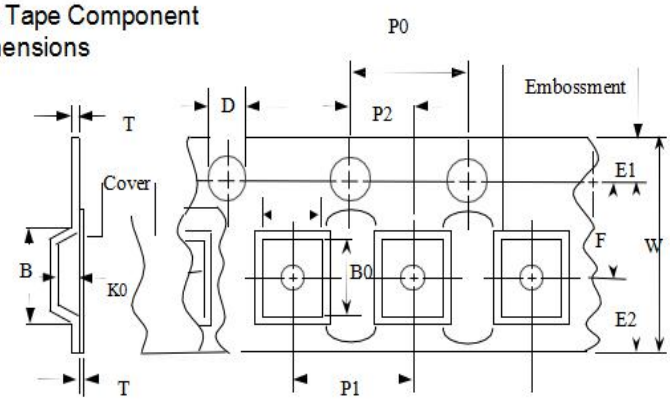
Tape & reel packaging per EIA481-1

Part Number	Quantity
JSMD 1812 LoR Series	2,000 pcs/reel

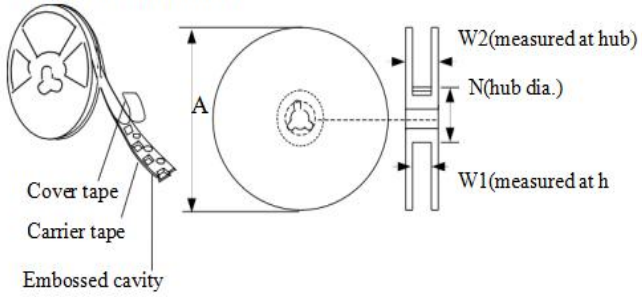
Tape And Reel Specifications (mm)

Governing	
Specifications	**EIA 481-1**
W	12.0 ± 0.3
P0	4.0 ± 0.10
P1	8.0 ± 0.10
P2	2.0 ± 0.05
A0	3.5 ± 0.10
B0	5.1± 0.10
B1max	5.9
D0	1.50 + 0.10,-0
F	5.5 ± 0.05
E1	1.75 ± 0.10
E2min.	10.25
T	0.6
T1max.	0.1
K0	0.9 ± 0.1
Leader min.	390
Trailer min.	160
Reel Dimensions	
A max.	178
N min.	60
W1	12.4 ± 0.5
W2	18.4

EIA Tape Component Dimensions



EIA Reel Dimensions



Storage And Handling

- Storage conditions：35°C max, 70% R.H.
- Devices may not meet specified performance if storage conditions are exceeded.

Part Number System