

## Performance Specification

Model	Marking	Maximum							Resistance	
		V <sub>max</sub>	I <sub>max</sub>	I <sub>hold</sub>	I <sub>trip</sub>	P <sub>d</sub>	Time To Trip			
				@25°C	@25°C	Typ.	Current	Time	R <sub>i min</sub>	R <sub>1max</sub>
		(V dc)	(A)	(A)	(A)	(W)	(A)	(Sec)	(Ω)	(Ω)
JSMD1210-005	J0	30.0	100	0.05	0.15	0.6	0.25	1.50	2.800	50.000
JSMD1210-005/60	J0	60.0	100	0.05	0.15	0.6	0.25	1.50	2.800	50.000
JSMD1210-010	J1	30.0	100	0.10	0.30	0.6	0.50	0.60	0.800	15.000
JSMD1210-010/60	J1	60.0	100	0.10	0.30	0.6	0.50	0.60	0.800	15.000
JSMD1210-020	J2	24.0	100	0.20	0.40	0.6	8.0	0.02	0.400	5.000
JSMD1210-020/30	J2	30.0	100	0.20	0.40	0.6	8.0	0.02	0.400	5.000
JSMD1210-035	J3	6.0	100	0.35	0.75	0.6	8.0	0.20	0.200	1.300
JSMD1210-035/24	J3	24.0	100	0.35	0.75	0.6	8.0	0.20	0.200	1.300
JSMD1210-035/30	J3	30.0	100	0.35	0.75	0.6	8.0	0.20	0.200	1.300
JSMD1210-050	J5	13.2	100	0.50	1.00	0.6	8.0	0.10	0.180	0.900
JSMD1210-050/16	J5	16.0	100	0.50	1.00	0.6	8.0	0.10	0.180	0.900
JSMD1210-050/30	J5	30.0	100	0.50	1.00	0.6	8.0	0.10	0.180	0.900
JSMD1210-075	J7	6.0	100	0.75	1.50	0.6	8.0	0.10	0.070	0.400
JSMD1210-075/13.2	J7	13.2	100	0.75	1.50	0.6	8.0	0.10	0.070	0.400
JSMD1210-075/24	J7	24.0	100	0.75	1.50	0.6	8.0	0.10	0.070	0.400
JSMD1210-110	J8	8.0	100	1.10	2.20	0.6	8.0	0.30	0.050	0.210
JSMD1210-110/12	J8	12.0	100	1.10	2.20	0.6	8.0	0.30	0.050	0.210
JSMD1210-110/16	J8	16.0	100	1.10	2.20	0.6	8.0	0.30	0.050	0.210
JSMD1210-150	J15	6.0	100	1.50	3.00	0.6	8.0	0.50	0.030	0.110
JSMD1210-150/12	J15	12.0	100	1.50	3.00	0.6	8.0	0.50	0.030	0.110
JSMD1210-175	J17	6.0	100	1.75	3.50	0.8	8.0	0.60	0.020	0.080
JSMD1210-200	J20	6.0	100	2.00	4.00	0.8	8.0	1.00	0.015	0.070

V<sub>max</sub> = Maximum operating voltage device can withstand without damage at rated current (I<sub>max</sub>).

I<sub>max</sub> = Maximum fault current device can withstand without damage at rated voltage (V<sub>max</sub>).

I<sub>hold</sub> = Hold Current. Maximum current device will not trip in 25°C still air.

I<sub>trip</sub> = Trip Current. Minimum current at which the device will always trip in 25°C still air.

P<sub>d</sub> = Power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.

R<sub>i min/max</sub> = Minimum/Maximum device resistance prior to tripping at 25°C.

R<sub>1max</sub> = 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 Compliance

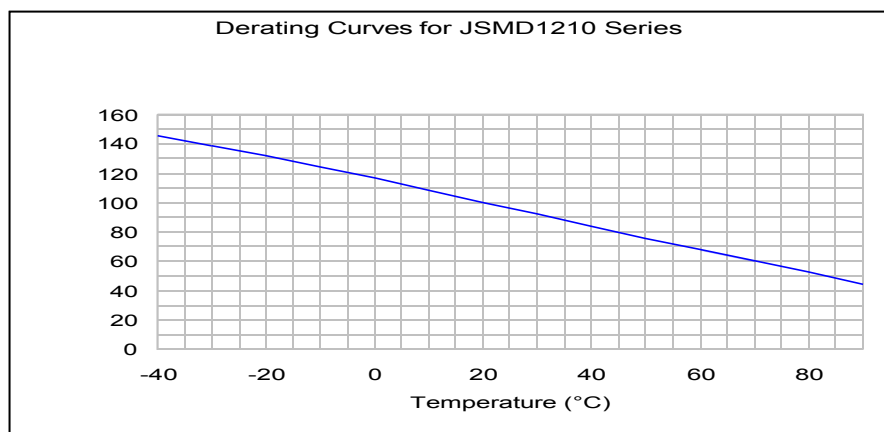
Agency	File Number	Regulation	Standard
UL	E217453		2002/95/EC
TUV	pending		EN14582

## Thermal Derating Chart

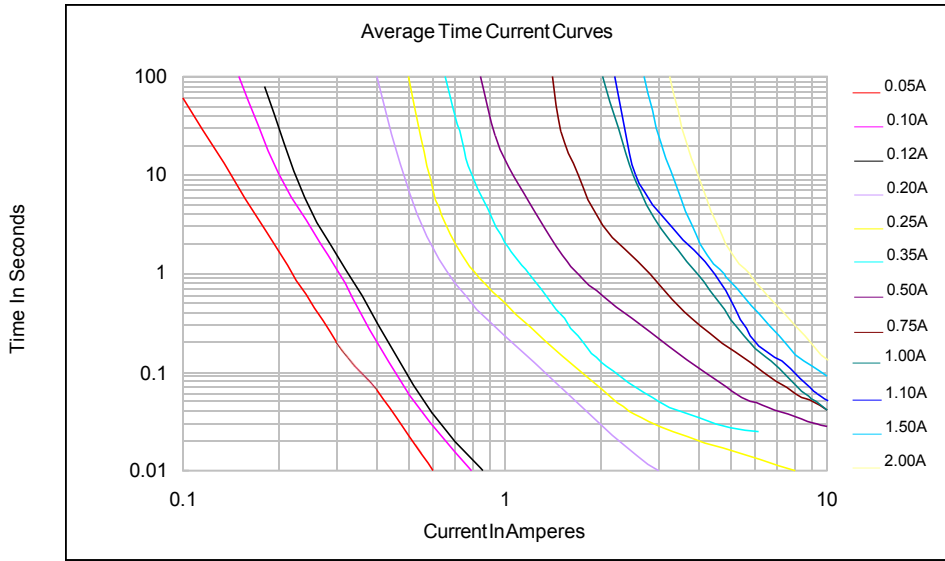
Recommended Hold Current(A) at Ambient Temperature(°C)

Model	Ambient Operation Temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
JSMD1210-005	0.08	0.07	0.06	0.05	0.04	0.04	0.03	0.03	0.02
JSMD1210-010	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.03
JSMD1210-020	0.29	0.26	0.22	0.20	0.16	0.14	0.13	0.11	0.08
JSMD1210-035	0.47	0.45	0.40	0.35	0.33	0.28	0.24	0.21	0.18
JSMD1210-050	0.76	0.67	0.58	0.50	0.43	0.40	0.36	0.32	0.28
JSMD1210-075	1.00	0.97	0.86	0.75	0.64	0.59	0.54	0.48	0.40
JSMD1210-110	1.69	1.48	1.29	1.10	0.88	0.76	0.65	0.57	0.43
JSMD1210-150	2.13	1.92	1.71	1.50	1.26	1.14	1.01	0.89	0.71
JSMD1210-175	2.54	2.30	2.02	1.75	1.47	1.33	1.18	1.05	0.86
JSMD1210-200	2.90	2.63	2.31	2.00	1.68	1.52	1.35	1.20	0.98

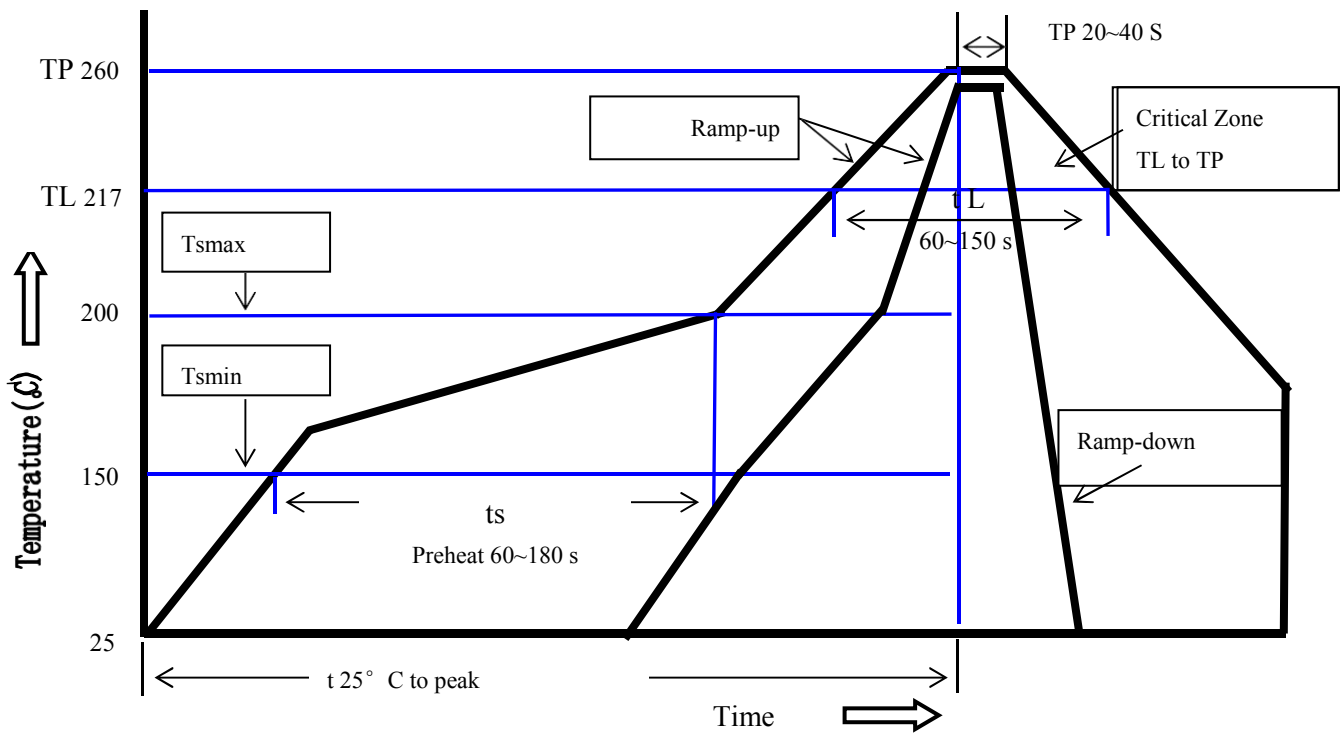
## Thermal Derating Curve



**Average Time-Current Curve**



**Soldering Parameters**



Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate(Ts max to T p)	3°C/second mac.
Preheat	
-Temperature Min(Ts min)	150°C
-Temperature Max(Ts max)	200°C
-Time(Ts min to Ts max)	60~180 seconds
Time maintained above:	
-Temperature(TL)	217°C
-Time(tL)	60~150 seconds
Peak Temperature(Tp)	260°C
Ramp-Down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max
Storage Condition	0°C~35°C, ≤70%RH

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

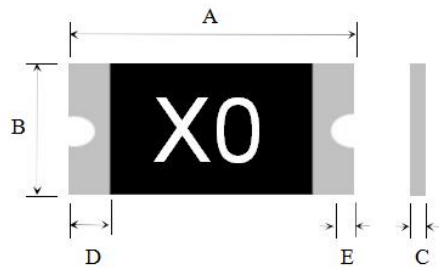
Recommended maximum paste thickness is 0.25mm

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.
JSMD1210-005	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
JSMD1210-005/60	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
JSMD1210-010	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
JSMD1210-010/60	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
JSMD1210-020	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
JSMD1210-020/30	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
JSMD1210-035	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
JSMD1210-035/24	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
JSMD1210-035/30	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
JSMD1210-050	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
JSMD1210-050/16	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
JSMD1210-050/30	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
JSMD1210-075	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
JSMD1210-075/13.2	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
JSMD1210-075/24	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
JSMD1210-110	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10

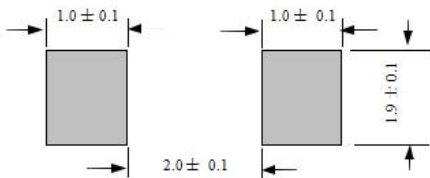
JSMD1210-110/12	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
JSMD1210-110/16	3.00	3.43	2.35	2.80	0.50	1.20	0.30	0.10
JSMD1210-150	3.00	3.43	2.35	2.80	0.40	0.80	0.30	0.10
JSMD1210-150/12	3.00	3.43	2.35	2.80	0.40	0.80	0.30	0.10
JSMD1210-175	3.00	3.43	2.35	2.80	0.50	1.20	0.30	0.10
JSMD1210-200	3.00	3.43	2.35	2.80	0.50	1.20	0.30	0.10

### 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.)



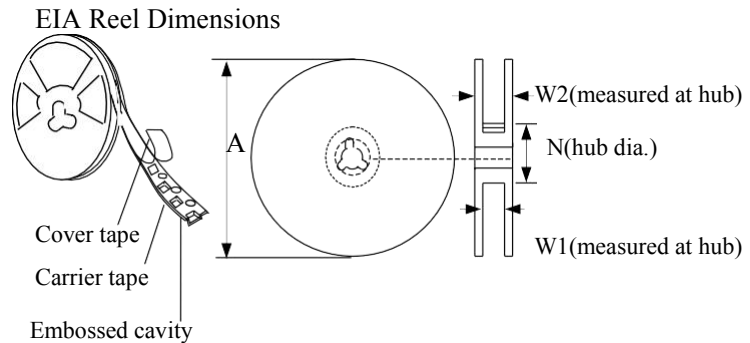
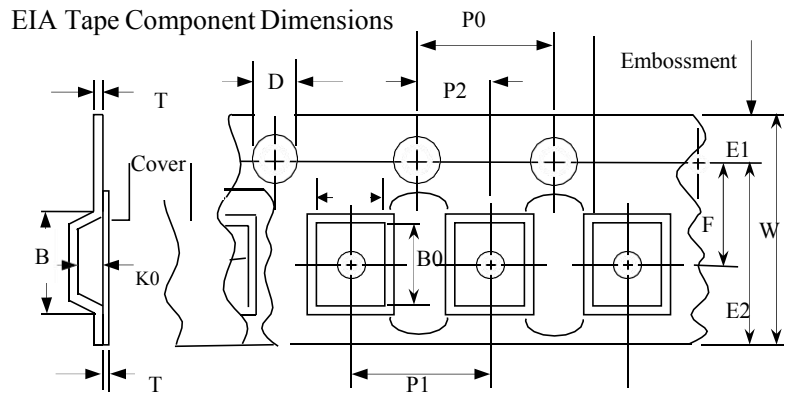
## Packaging Quantity

Part Number	Quantity
JSMD 035.035/24.050.050/16.075.075/13.2 .110.110/12	4000 pcs/reel
The others	3500 pcs/reel

Tape & reel packaging per EIA481-1

## Tape And Reel Specifications (mm)

Governing Specifications	EIA 481-1
W	8.15 ± 0.2
P0	4.0 ± 0.10
P1	4.0 ± 0.10
P2	2.0 ± 0.05
A0	2.82 ± 0.10
B0	3.52 ± 0.10
B1max.	4.35
D0	1.50 + 0.1, -0
F	3.5 ± 0.05
E1	1.75 ± 0.10
E2min.	6.25
T	0.6
T1max.	0.1
K0	1.04 ± 0.1
Leader min.	390
Trailer min.	160
Reel Dimensions	
A max.	178
N min.	60
W1	9 ± 0.5
W2	12.6 ± 0.5

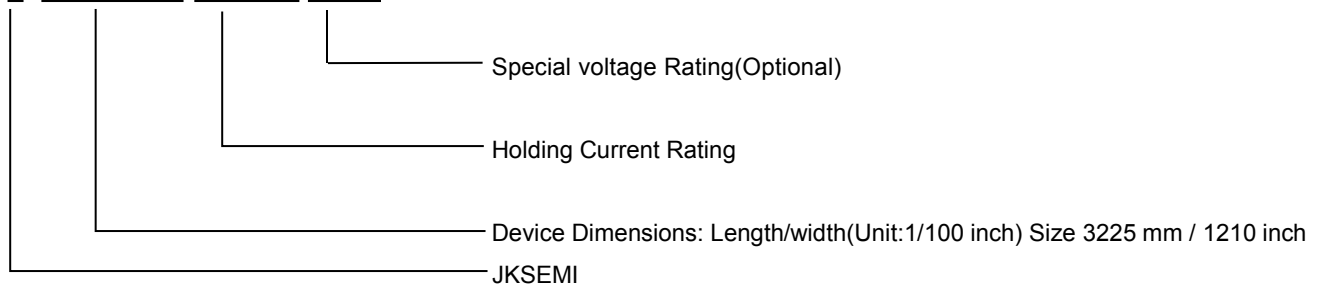


### Storage And Handling

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

## Part Number System

**J** SMD1210-□□□ / □□



## Cross Reference

JKSEMI	Cross Reference				
	TYCO/Raychem	Littelfuse	Bourns / Multifuse®	Polytronics / EVERFUSE®	SEA-LAND
JSMD1210-005	microSMD005F	1210L005	MF-USMF005	SMD1210P005TF	SMD1210-005
JSMD1210-005/60	-	-	-	SMD1210P005TF/60	SMD1210-005-60V
JSMD1210-010	microSMD010F	1210L010	MF-USMF010	SMD1210P010TF	SMD1210-010
JSMD1210-010/60	-	-	-	SMD1210P010TF/60	SMD1210-010-60V
JSMD1210-020	-	1210L020	MF-USMF020	SMD1210P020TF	SMD1210-020
JSMD1210-020/30	-	-	-	-	-
JSMD1210-035	microSMD035F	1210L035	MF-USMF035	SMD1210P035TF	SMD1210-035
JSMD1210-035/24	-	-	-	-	SMD1210-035-24V
JSMD1210-035/30	-	1210L035/30	-	SMD1210P035TF/30	-
JSMD1210-050	microSMD050F	1210L050	MF-USMF050	SMD1210P050TF	SMD1210-050
JSMD1210-050/16	-	-	-	-	SMD1210-050-16V
JSMD1210-050/30	-	1210L050/30	-	SMD1210P050TF/30	-
JSMD1210-075	microSMD075F	1210L075	MF-USMF075	SMD1210P075TF	SMD1210-075
JSMD1210-075/13.2	-	-	-	-	SMD1210-075-13.2V
JSMD1210-075/24	-	1210L075/24	-	SMD1210P075TF/24	SMD1210-075-24V
JSMD1210-110	microSMD110F	1210L110	MF-USMF110	SMD1210P110TF T	SMD1210-110
JSMD1210-110/12	-	1210L110/12	-	SMD1210P110TF/12	-
JSMD1210-110/16	-	1210L110/16	-	SMD1210P110TF/16	SMD1210-110-16V
JSMD1210-150	microSMD150F	-	MF-USMF150	SMD1210P150TF T	SMD1210-150
JSMD1210-150/12	-	-	-	SMD1210P150TF/12	-
JSMD1210-175	microSMD175F	1210L175	MF-USMF175	SMD1210P175TF	SMD1210-175
JSMD1210-200	microSMD200F	1210L200	-	SMD1210P200TF	SMD1210-200

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