

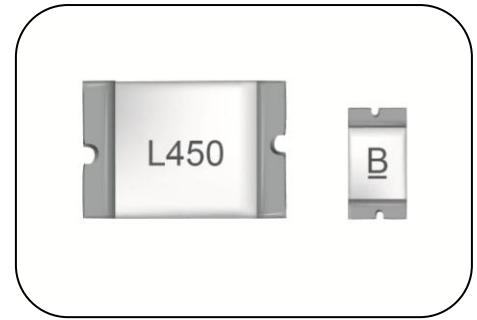
Polymer PTC Resettable Fuse: KLM Series

SMD Low Resistance Type



■ Features

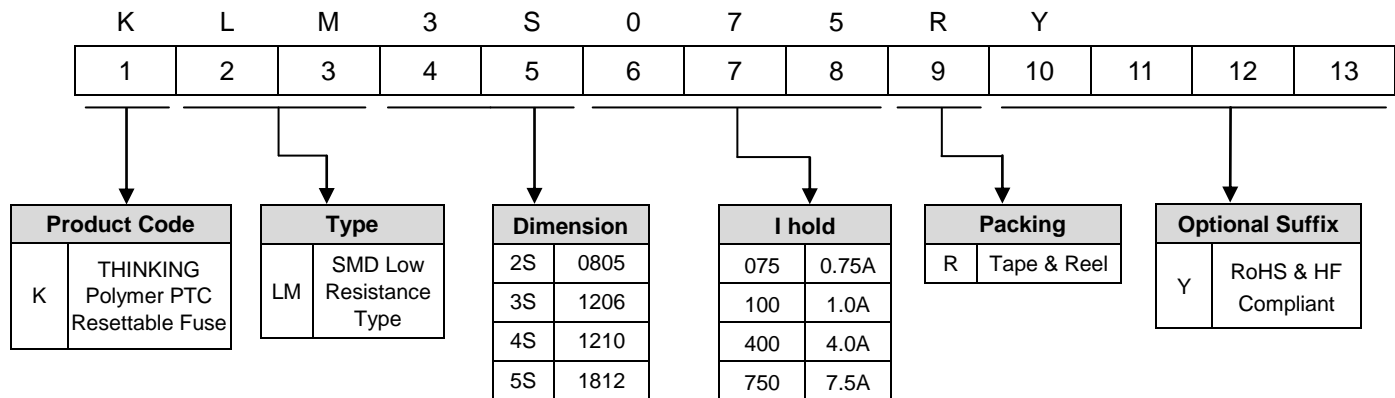
1. RoHS & Halogen-Free (HF) compliant
2. EIA size: 0805,1206,1210,1812
3. Hold current ratings from 0.75 to 7.5A
4. Small footprint
5. Ultra low resistance
6. Fast time to trip
7. Operating & storage temperature range: -40~+85°C
8. Agency Approval: UL / cUL / TUV



■ Recommended Applications

1. USB, HDMI, IEEE 1394...interface
2. PC, Motherboard, NB, Tablet
3. Handheld devices: Mobile phone, e-books
4. Digital cameras
5. Telecommunication
6. Consumer Device
7. Game consoles

■ Part Number Code

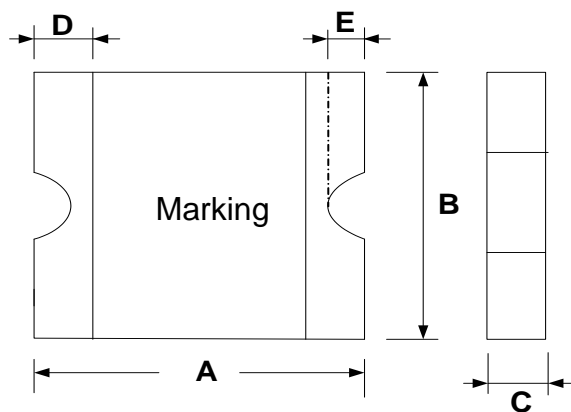


Polymer PTC Resettable Fuse: KLM Series

SMD Low Resistance Type



■ Structure & Dimensions



(Unit: mm)

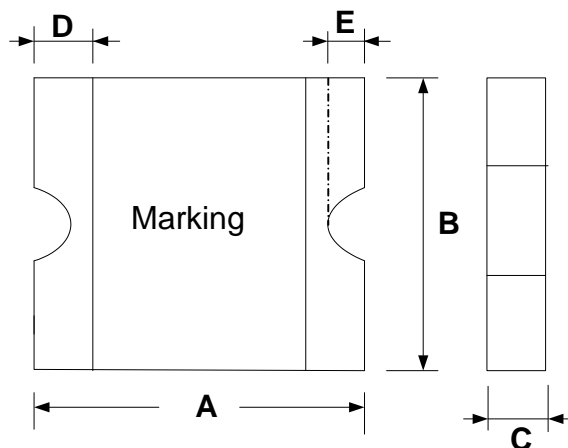
Part No.	A		B		C		D		E	
	(Min.)	(Max.)	(Min.)	(Max.)	(Min.)	(Max.)	(Min.)	(Max.)	(Min.)	(Max.)
KLM2S075	2.00	2.20	1.20	1.50	0.4	0.7	0.150	0.55	0.05	0.45
KLM2S110					0.4	0.7				
KLM2S150					0.6	1.2				
KLM2S175					0.6	1.2				
KLM3S075	3.00	3.50	1.50	1.80	0.4	0.7	0.125	0.75	0.08	0.45
KLM3S110					0.4	0.7				
KLM3S150					0.4	0.7				
KLM3S175					0.6	1.2				
KLM3S200					0.6	1.2				
KLM3S260					0.6	1.2				
KLM3S300					0.6	1.2				
KLM3S350					0.6	1.2				
KLM3S380					0.8	1.6				
KLM3S400					0.8	1.6				
KLM3S450					0.8	1.6				
KLM3S500					0.8	1.6				
KLM4S175	3.00	3.43	2.35	2.80	0.4	0.7	0.125	0.75	0.08	0.50
KLM4S200					0.4	0.7				
KLM4S260					0.4	0.7				
KLM4S300					0.6	1.2				
KLM4S350					0.6	1.2				
KLM4S380					0.6	1.2				
KLM4S400					0.6	1.2				
KLM4S450					0.6	1.2				
KLM4S500					0.6	1.2				
KLM4S550					0.8	1.6				
KLM4S600					0.8	1.6				
KLM4S650					0.8	1.6				

Polymer PTC Resettable Fuse: KLM Series

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■ Structure & Dimensions



(Unit: mm)

Part No.	A		B		C		D		E	
	(Min.)	(Max.)	(Min.)	(Max.)	(Min.)	(Max.)	(Min.)	(Max.)	(Min.)	(Max.)
KLM5S190	4.37	4.73	3.07	3.41	0.4	0.7	0.20	1.20	0.15	0.65
KLM5S260					0.4	0.7				
KLM5S270					0.4	0.7				
KLM5S300					0.4	0.7				
KLM5S350					0.4	0.7				
KLM5S370					0.4	0.7				
KLM5S400					0.4	0.7				
KLM5S450					0.6	1.2				
KLM5S500					0.6	1.2				
KLM5S550					0.6	1.2				
KLM5S600					0.8	1.6				
KLM5S650					0.8	1.6				
KLM5S700					0.8	1.6				
KLM5S750					0.8	1.6				

Polymer PTC Resettable Fuse: KLM Series

SMD Low Resistance Type



■ Electrical Characteristics at 23°C

Part No.	Marking	Vmax.	Imax.	Ihold	Itrip	Pd (Max.)	Maximum Time to Trip		Resistance		Safety Approvals	
							Current (A)	Time (Sec.)	Initial Ri	Post Trip R1	UL/cUL	TUV
		(V _{dc})	(A)	(A)	(A)	(W)			Min. (Ω)	Max(Ω)		
KLM2S075	A	6	50	0.75	1.5	0.6	8.0	0.2	0.040	0.160	√	√
KLM2S110	B	6	50	1.10	1.8	0.6	8.0	0.3	0.030	0.130	√	√
KLM2S150	C	6	50	1.50	3.0	0.6	8.0	0.5	0.015	0.065	√	√
KLM2S175	D	6	50	1.70	3.5	0.6	8.0	0.6	0.005	0.055	√	√
KLM3S075	La	6	50	0.75	1.5	0.8	8.0	0.3	0.017	0.180	√	√
KLM3S110	Lb	6	50	1.10	2.2	0.8	8.0	0.3	0.015	0.130	√	√
KLM3S150	Lc	6	50	1.50	3.0	0.8	8.0	0.3	0.010	0.080	√	√
KLM3S175	L3	6	50	1.75	3.5	0.8	8.0	0.4	0.005	0.045	√	√
KLM3S200	L7	6	50	2.00	4.0	0.8	8.0	0.5	0.005	0.040	√	√
KLM3S260	L8	6	50	2.60	5.0	0.8	8.0	4.0	0.003	0.030	√	√
KLM3S300	L9	6	50	3.00	6.0	0.8	8.0	4.0	0.003	0.026	√	√
KLM3S350	L1	6	50	3.50	7.0	0.8	8.0	5.0	0.003	0.018	√	√
KLM3S380	L2	6	50	3.80	8.0	0.8	8.0	5.0	0.002	0.014	√	√
KLM3S400	L5	6	50	4.00	8.0	0.8	20.0	2.0	0.001	0.014	√	√
KLM3S450	L6	6	50	4.50	9.0	0.8	22.0	2.0	0.001	0.014	√	√
KLM3S500	Le	6	50	5.00	10.0	0.8	25.0	2.0	0.001	0.013	√	√
KLM4S175	LA	6	50	1.75	3.5	0.8	8.0	2.5	0.006	0.040	√	√
KLM4S200	LB	6	50	2.00	4.0	0.8	8.0	3.0	0.005	0.024	√	√
KLM4S260	LE	6	50	2.60	5.0	0.8	8.0	4.0	0.003	0.020	√	√
KLM4S300	LG	6	50	3.00	6.0	0.8	15.0	2.0	0.003	0.020	√	√
KLM4S350	LN	6	50	3.50	7.0	0.8	17.5	2.0	0.003	0.018	√	√
KLM4S380	LK	6	50	3.80	8.0	0.8	19.0	2.0	0.003	0.016	√	√
KLM4S400	LM	6	50	4.00	8.0	0.8	20.0	2.0	0.002	0.014	√	√
KLM4S450	LP	6	50	4.50	9.0	0.8	22.5	2.0	0.002	0.014	√	√
KLM4S500	LQ	6	50	5.00	10.0	0.8	25.0	2.0	0.002	0.012	√	√
KLM4S550	LR	6	50	5.50	11.0	0.8	27.5	2.0	0.002	0.011	√	√
KLM4S600	LS	6	50	6.00	12.0	0.8	30.0	2.0	0.001	0.010	√	√
KLM4S650	LV	6	50	6.50	13.0	0.8	32.5	2.0	0.001	0.009	√	√

Note : UL & cUL File No: E138827

TUV File No: R50311748

Polymer PTC Resettable Fuse: KLM Series

SMD Low Resistance Type



■ Electrical Characteristics at 23°C

Part No.	Marking	Vmax.	Imax.	Ihold	Itrip	Pd (Max.)	Maximum Time to Trip		Resistance		Safety Approvals	
							Current (A)	Time (Sec.)	Initial Ri	Post Trip R1	UL/cUL	TUV
		(V _{dc})	(A)	(A)	(A)	(W)			Min. (Ω)	Max(Ω)		
KLM5S190	L190	6	50	1.9	4.9	1	9.5	4.5	0.003	0.025	√	√
KLM5S260	L260	6	50	2.6	6.0	1	13.0	2.0	0.003	0.024	√	√
KLM5S270	L270	6	50	2.7	6.2	1	13.0	2.0	0.003	0.023	√	√
KLM5S300	L300	6	50	3.0	6.2	1	8.0	5.0	0.003	0.021	√	√
KLM5S350	L350	6	50	3.5	8.1	1	8.0	5.0	0.003	0.020	√	√
KLM5S370	L370	6	50	3.7	9.1	1	18.5	2.0	0.003	0.018	√	√
KLM5S400	L400	6	50	4.0	8.0	1	20.0	2.0	0.003	0.017	√	√
KLM5S450	L450	6	50	4.5	9.0	1	22.5	2.0	0.001	0.014	√	√
KLM5S500	L500	6	50	5.0	10.0	1	25.0	2.0	0.001	0.013	√	√
KLM5S550	L550	6	50	5.5	11.0	1	27.5	2.0	0.001	0.012	√	√
KLM5S600	L600	6	50	6.0	12.0	1	30.0	2.0	0.001	0.012	√	√
KLM5S650	L650	6	50	6.5	13.0	1	32.5	2.0	0.001	0.011	√	√
KLM5S700	L700	6	50	7.0	14.0	1	35.0	2.0	0.001	0.010	√	√
KLM5S750	L750	6	50	7.5	15.0	1	37.5	2.0	0.001	0.009	√	√

Note : UL & cUL File No: E138827

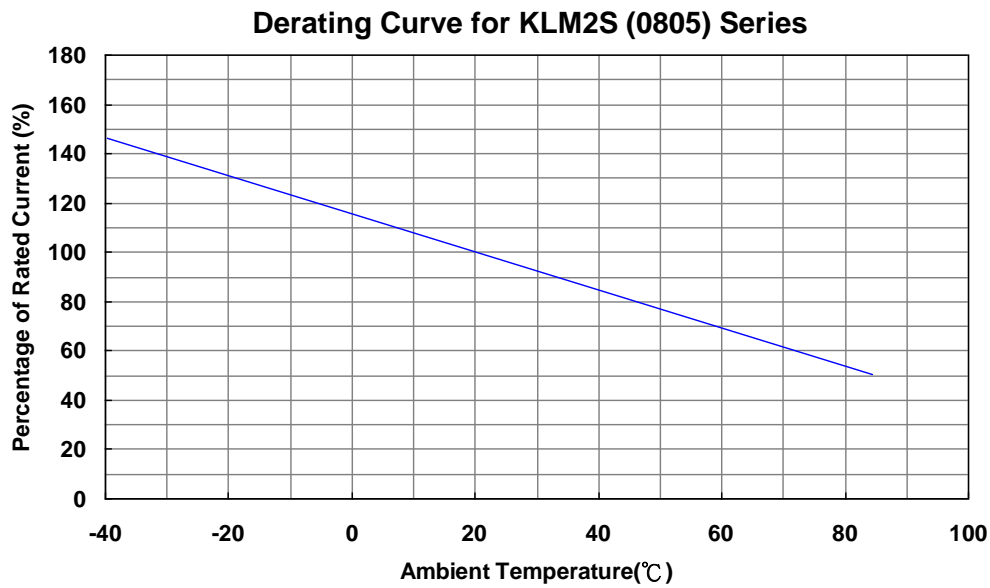
TUV File No: R50311748

Polymer PTC Resettable Fuse: KLM Series

SMD Low Resistance Type



■ KLM2S (0805) Series Ihold & Itrip Thermal Derating Curve



■ KLM2S (0805) Series Ihold Thermal Derating Chart

(Unit: A)

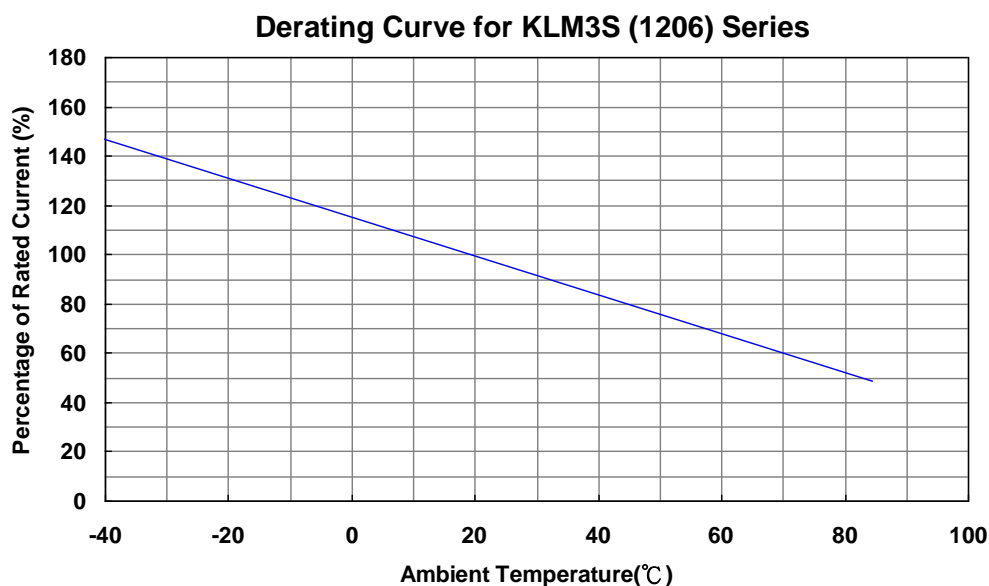
Part No.	Ambient Operation Temperature							
	-40°C	-20°C	0°C	23°C	40°C	60°C	70°C	85°C
KLM2S075	1.24	1.07	0.94	0.75	0.62	0.47	0.37	0.23
KLM2S110	1.93	1.65	1.38	1.10	0.83	0.55	0.41	0.21
KLM2S150	2.37	2.07	1.80	1.50	1.25	0.93	0.74	0.50
KLM2S175	2.57	2.33	2.07	1.75	1.49	1.24	1.00	0.91

Polymer PTC Resettable Fuse: KLM Series

SMD Low Resistance Type



■ KLM3S (1206) Series Ihold & Itrip Thermal Derating Curve



■ KLM3S (1206) Series Ihold Thermal Derating Chart

(Unit: A)

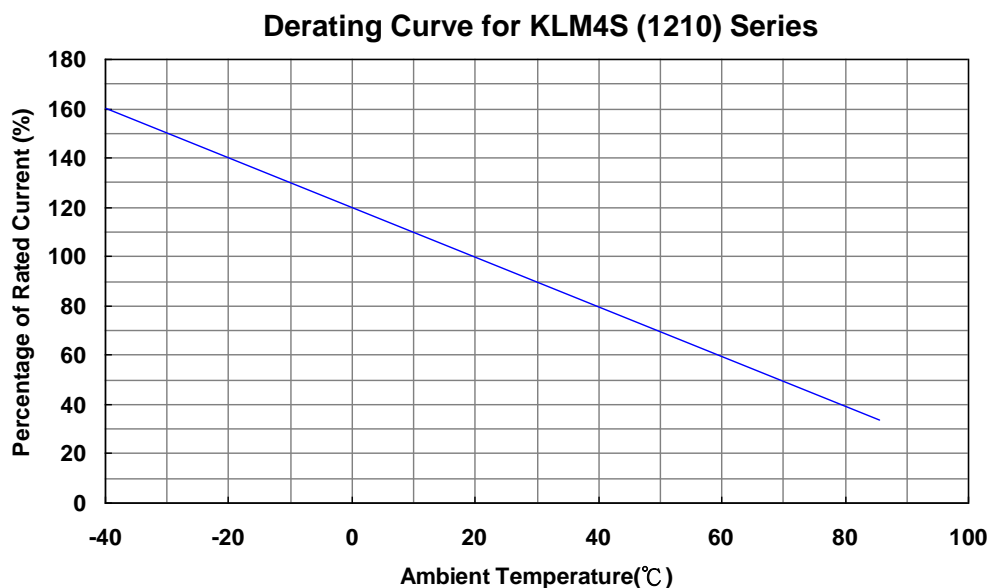
Part no	Ambient Operation Temperature							
	-40°C	-20°C	0°C	23°C	40°C	60°C	70°C	85°C
KLM3S075	1.10	1.00	0.89	0.75	0.64	0.53	0.43	0.39
KLM3S110	2.00	1.70	1.40	1.10	0.83	0.56	0.44	0.36
KLM3S150	2.67	2.32	1.95	1.50	1.15	0.78	0.64	0.52
KLM3S175	2.57	2.33	2.07	1.75	1.49	1.24	1.00	0.91
KLM3S200	3.30	2.90	2.50	2.00	1.62	1.16	0.90	0.52
KLM3S260	3.71	3.42	3.01	2.60	2.08	1.49	1.30	0.89
KLM3S300	4.41	3.99	3.54	3.00	2.55	2.13	1.71	1.56
KLM3S350	5.15	4.66	4.13	3.50	2.98	2.49	2.00	1.82
KLM3S380	5.59	5.05	4.48	3.80	3.23	2.70	2.17	1.98
KLM3S400	5.71	5.26	4.63	4.00	3.20	2.29	2.00	1.37
KLM3S450	6.62	5.99	5.31	4.50	3.83	3.20	2.57	2.34
KLM3S500	7.20	6.60	5.80	5.00	4.25	3.40	3.00	2.10

Polymer PTC Resettable Fuse: KLM Series

SMD Low Resistance Type



■ KLM4S (1210) Series Ihold & Itrip Thermal Derating Curve



■ KLM4S (1210) Series Ihold Thermal Derating Chart

(Unit: A)

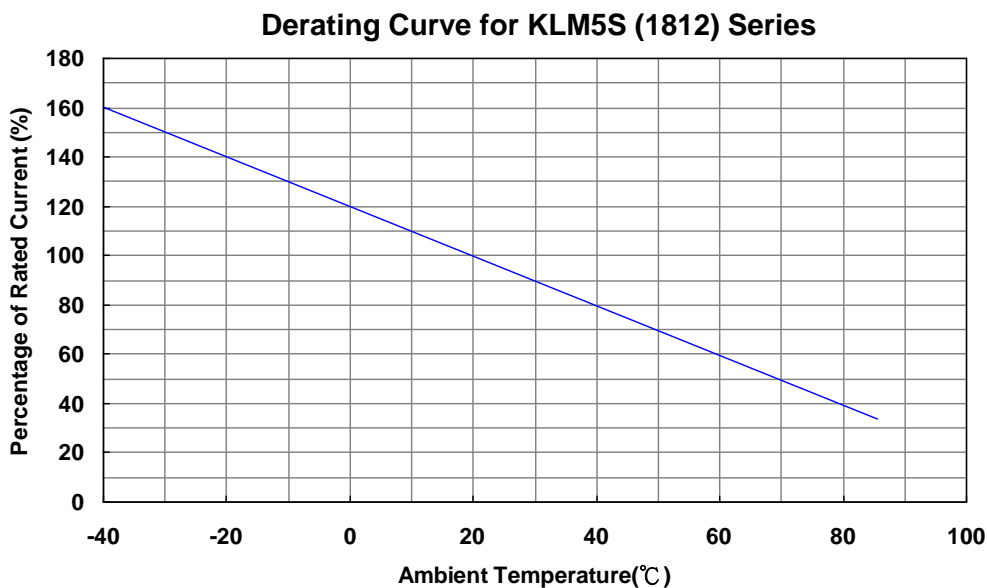
Part no	Ambient Operation Temperature							
	-40°C	-20°C	0°C	23°C	40°C	60°C	70°C	85°C
KLM4S175	2.57	2.33	2.07	1.75	1.49	1.24	1.00	0.91
KLM4S200	3.26	2.87	2.50	2.00	1.70	1.29	1.09	0.78
KLM4S260	3.82	3.46	3.07	2.60	2.21	1.85	1.48	1.35
KLM4S300	4.41	3.99	3.54	3.00	2.55	2.13	1.71	1.56
KLM4S350	5.00	4.60	4.05	3.50	2.80	2.00	1.60	1.00
KLM4S380	6.00	5.28	4.52	3.80	3.15	2.39	2.09	1.60
KLM4S400	5.71	5.26	4.63	4.00	3.20	2.29	2.00	1.37
KLM4S450	6.62	5.99	5.31	4.50	3.83	3.20	2.57	2.34
KLM4S500	7.30	6.60	5.65	5.00	4.27	3.50	3.15	2.55
KLM4S550	7.75	6.90	6.25	5.50	4.65	3.60	3.00	2.30
KLM4S600	8.45	7.55	6.80	6.00	5.10	3.95	3.35	2.50
KLM4S650	9.15	8.15	7.40	6.50	5.50	4.25	3.60	2.70

Polymer PTC Resettable Fuse: KLM Series

SMD Low Resistance Type



■ KLM5S (1812) Series Ihold & Itrip Thermal Derating Curve



■ KLM5S (1812) Series Ihold Thermal Derating Chart

(Unit: A)

Part no	Ambient Operation Temperature							
	-40°C	-20°C	0°C	23°C	40°C	60°C	70°C	85°C
KLM5S190	3.00	2.58	2.22	1.90	1.49	1.14	0.93	0.61
KLM5S260	3.82	3.46	3.07	2.60	2.21	1.85	1.48	1.35
KLM5S270	3.86	3.55	3.12	2.70	2.16	1.54	1.35	0.93
KLM5S300	4.41	3.99	3.54	3.00	2.55	2.13	1.71	1.56
KLM5S350	5.43	4.73	4.13	3.50	2.80	2.10	1.75	1.12
KLM5S370	5.44	4.92	4.37	3.70	3.15	2.63	2.11	1.92
KLM5S400	5.88	5.28	4.64	4.00	3.41	2.84	2.55	2.08
KLM5S450	6.62	5.99	5.31	4.50	3.83	3.20	2.57	2.34
KLM5S500	7.35	6.60	5.85	5.00	4.31	3.55	3.15	2.55
KLM5S550	8.08	7.26	6.38	5.50	4.70	3.85	3.47	2.86
KLM5S600	8.82	7.92	7.08	6.00	5.12	4.20	3.75	3.12
KLM5S650	9.55	8.58	7.65	6.50	5.55	4.55	4.12	3.38
KLM5S700	10.28	9.24	8.25	7.00	5.98	4.90	4.45	3.64
KLM5S750	11.02	9.90	8.78	7.50	6.41	5.25	4.75	3.85

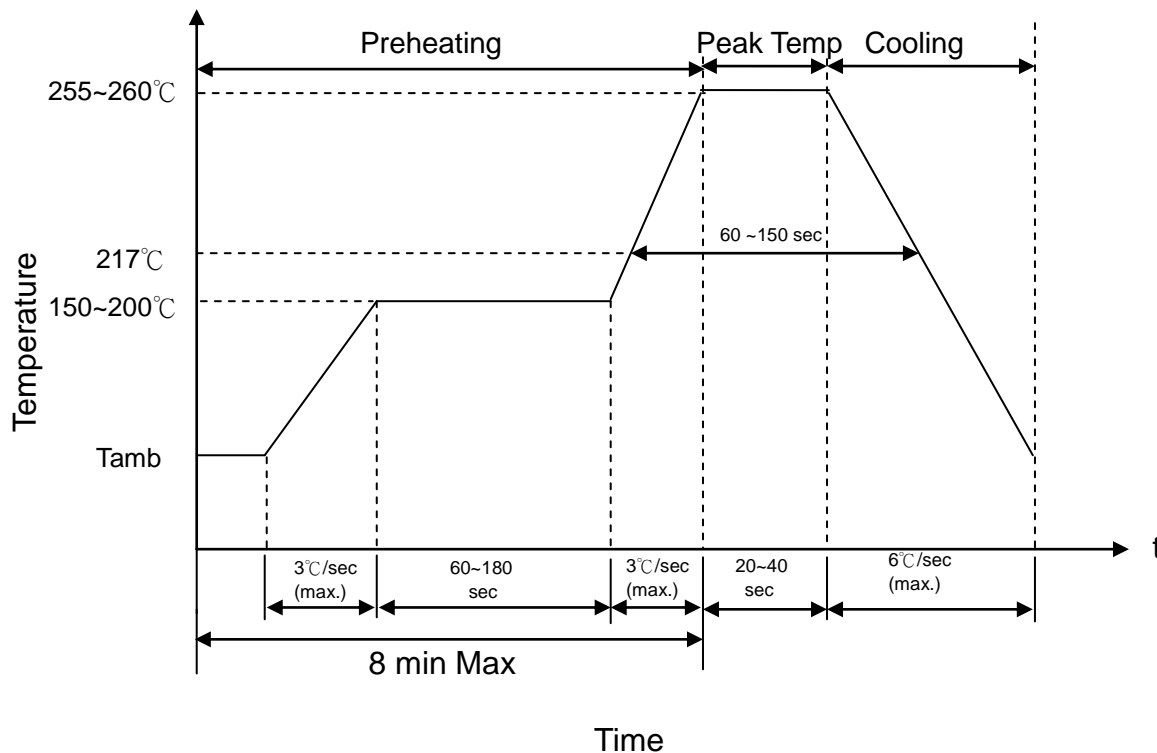
Polymer PTC Resettable Fuse: KLM Series

SMD Low Resistance Type



■ Recommended Soldering Condition

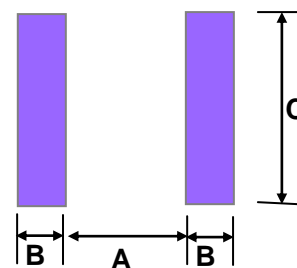
● IR-Reflow Soldering Profile



■ Recommended Soldering Pad Dimensions (Nominal)

(Unit:mm)

Series	Size	A	B	C
KLM2S	0805	1.20	1.00	1.50
KLM3S	1206	2.00	1.00	1.90
KLM4S	1210	2.00	1.00	2.80
KLM5S	1812	3.45	1.78	3.50



Polymer PTC Resettable Fuse: KLM Series

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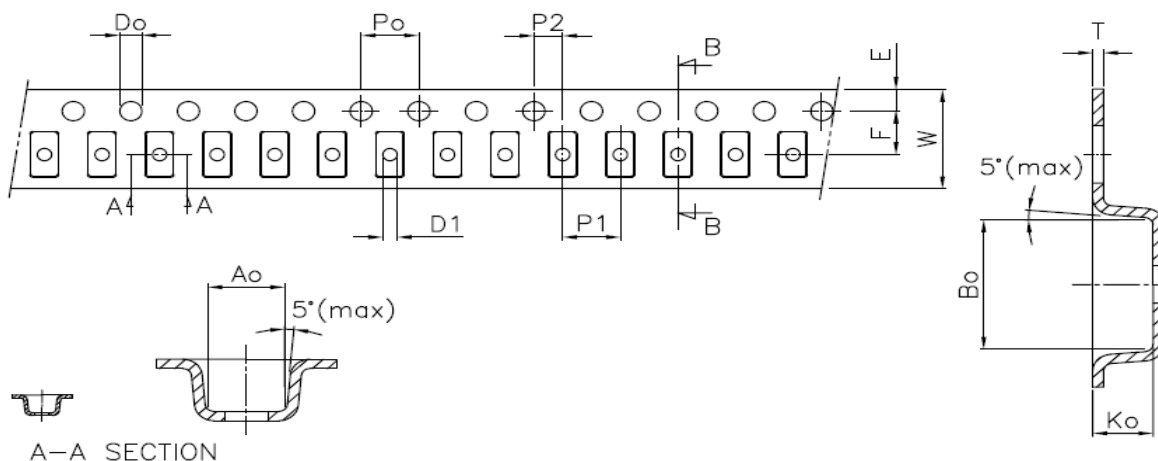


■ Reliability

Item	Standard	Test Condition / Methods	Criteria
Passive Aging	IEC 60738-1	85±5°C, 1000±24hrs	±10% typical resistance change
Humidity Aging	Specification Standard	85±5°C, 80~85%RH, 100±5hrs	±15% typical resistance change
Rapid Change of Temperature	IEC 60738-1	85±5/-40±5°C, 20 cycles, Duration:30min	-30% typical resistance change
Overload and Endurance Test	UL 1434	Vmax,120% Imax ,50 cycles Vmax,300% Itrip ,6000 cycles	No arcing or burring
Trip Endurance	UL 1434	Vmax, Itrip ≤ I ≤ Imax , 1000±24hrs	No arcing or burring
Solderability	IEC 60068-2-58	245 ± 5 °C , 3 ± 0.3 sec	At least 95% of terminal electrode is covered by new solder.

■ Package

● Taping Specification



◆ KLM2S Series: SMD 0805 Type

(Unit:mm)

Index Size	A ₀	B ₀	K ₀	P ₀	P ₁	P ₂	T	E	F	D ₀	D ₁	W	10P ₀
	±0.10	±0.10	±0.050	±0.08	±0.10	±0.05	±0.10	±0.10	±0.05	±0.05	Min.	±0.10	±0.20
0805	1.6	2.3	0.9	4.0	4.0	2.0	0.25	1.75	3.50	1.55	1.0	8.0	40.0

Polymer PTC Resettable Fuse: KLM Series

SMD Low Resistance Type



◆ KLM3S Series: SMD 1206 Type

For KLM3S075, KLM3S110, KLM3S150

(Unit:mm)

Index Size	A ₀ ±0.10	B ₀ ±0.10	K ₀ ±0.05	P ₀ ±0.10	P ₁ ±0.10	P ₂ ±0.10	T ±0.05	E ±0.10	F ±0.10	D ₀ ±0.05	D ₁ Min.	W ±0.30	10P ₀ ±0.20
1206	1.85	3.45	0.85	4.0	4.0	2.0	0.23	1.75	3.5	1.55	1.0	8.0	40.0

For KLM3S175, KLM3S200, KLM3S260, KLM3S300, KLM3S350, KLM3S380, KLM3S400, KLM3S450, KLM3S500

(Unit:mm)

Index Size	A ₀ ±0.10	B ₀ ±0.10	K ₀ ±0.05	P ₀ ±0.10	P ₁ ±0.10	P ₂ ±0.10	T ±0.05	E ±0.10	F ±0.10	D ₀ ±0.05	D ₁ Min.	W ±0.30	10P ₀ ±0.20
1206	1.95	3.55	1.4	4.0	4.0	2.0	0.23	1.75	3.5	1.55	1.0	8.0	40.0

◆ KLM4S Series: SMD 1210 Type

(Unit:mm)

Index Size	A ₀ ±0.10	B ₀ ±0.10	K ₀ ±0.05	P ₀ ±0.10	P ₁ ±0.10	P ₂ ±0.10	T ±0.05	E ±0.10	F ±0.10	D ₀ ±0.05	D ₁ Min.	W ±0.30	10P ₀ ±0.20
1210	2.82	3.63	1.47	4.0	4.0	2.0	0.23	1.75	3.5	1.55	1.0	8.0	40.0

◆ KLM5S Series: SMD 1812 Type

For KLM5S190, KLM5S260, KLM5S270, KLM5S300, KLM5S350, KLM5S370, KLM5S400

(Unit:mm)

Index Size	A ₀ ±0.10	B ₀ ±0.10	K ₀ ±0.05	P ₀ ±0.10	P ₁ ±0.10	P ₂ ±0.10	T ±0.03	E ±0.10	F ±0.10	D ₀ ±0.05	D ₁ Min.	W ±0.30	10P ₀ ±0.20
1812	3.50	5.0	0.9	4.0	8.0	2.0	0.25	1.75	5.5	1.55	1.50	12.0	40.0

For KLM5S450, KLM5S500, KLM5S550, KLM5S600, KLM5S650, KLM5S700, KLM5S750

(Unit:mm)

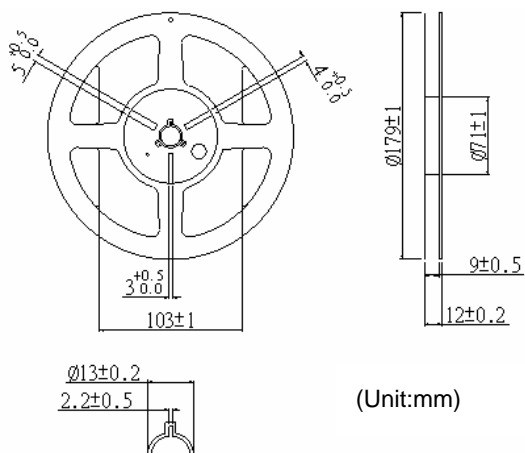
Index Size	A ₀ ±0.10	B ₀ ±0.10	K ₀ ±0.05	P ₀ ±0.10	P ₁ ±0.10	P ₂ ±0.10	T ±0.03	E ±0.10	F ±0.10	D ₀ ±0.05	D ₁ Min.	W ±0.30	10P ₀ ±0.20
1812	3.56	4.94	1.7	4.0	8.0	2.0	0.25	1.75	5.5	1.55	1.50	12.0	40.0

Polymer PTC Resettable Fuse: KLM Series

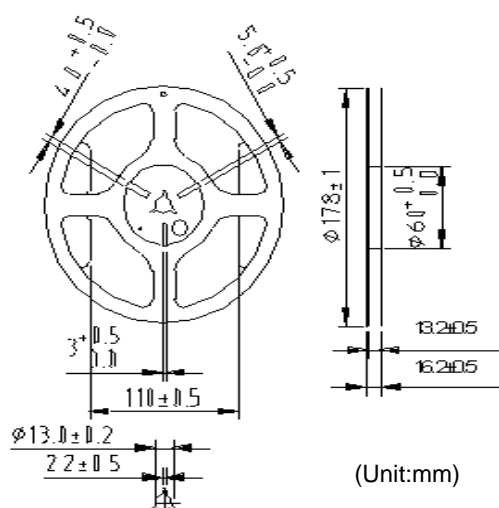
SMD Low Resistance Type



Quantity



Size	Part no	Quantity (pcs/reel)	Carton Size(mm)	Quantity (reel/carton)
0805	KLM2S	4,000	350*350*300	28
1206	KLM3S075~150	5,000		
	KLM3S175~500	2,500		
1210	KLM4S	3,000		



Size	Part no	Quantity (pcs/reel)	Carton Size(mm)	Quantity (reel/carton)
1812	KLM5S190~400	2,000	350*350*300	24
	KLM5S450~750	1,000		

Warehouse Storage Conditions of Products

- Storage Conditions:
 1. Storage Temperature: -10 °C ~ + 40 °C
 2. Relative humidity: ≤ 75%RH
 3. Thermistors must be kept away from sunlight and stored in a non-corrosive atmosphere.
- Period of Storage: 1 year