

Polymer PTC Resettable Fuse: KMC Series



SMD Type

■ Features

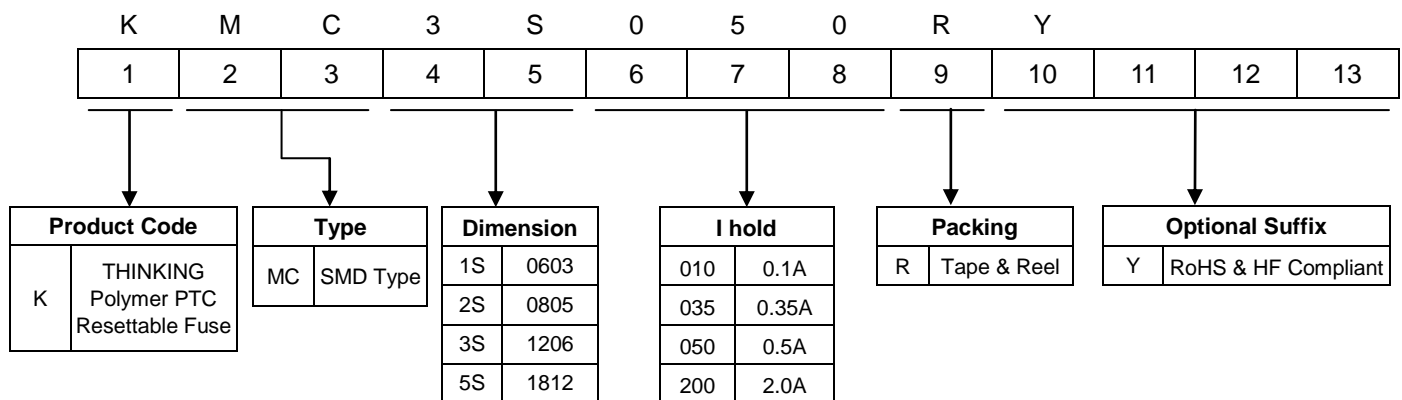
1. RoHS & Halogen-Free (HF) compliant
2. EIA size: 0603, 0805, 1206, 1812
3. Hold current ratings from 0.05 to 3A
4. Voltage ratings from 6V computer and electronic applications to 60V
5. Small footprint
6. Fast time to trip
7. Operating & storage temperature range: -40~+85°C
8. Agency Approval: UL / cUL / TUV



■ Recommended Applications

1. USB, HDMI, IEEE 1394 interface
2. PC, Motherboard, NB, Tablet
3. Mobile phone
4. Digital cameras
5. Telecommunication
6. Consumer device

■ Part Number Code

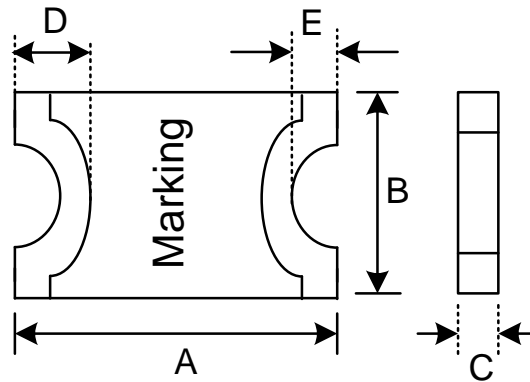


Polymer PTC Resettable Fuse: KMC Series

SMD Type



■ Structure & Dimensions



(Unit: mm)

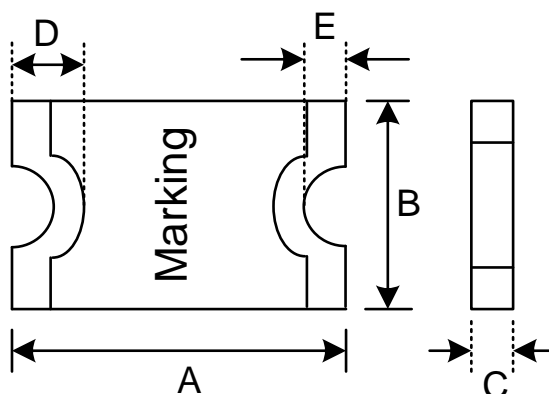
Part No.	A		B		C		D		E	
	(Min.)	(Max.)	(Min.)	(Max.)	(Min.)	(Max.)	(Min.)	(Max.)	(Min.)	(Max.)
KMC1S010	1.40	1.80	0.60	1.00	0.30	0.55	0.15	0.50	--	0.40
KMC1S020					0.30	0.55				
KMC1S025					0.30	0.55				
KMC1S035					0.50	0.70				
KMC2S010	2.00	2.20	1.20	1.50	0.40	0.85	0.15	0.55	0.05	0.45
KMC2S010-24	2.00	2.20	1.20	1.50	0.40	0.85	0.15	0.55	0.05	0.45
KMC2S020					0.40	0.85				
KMC2S035					0.30	0.75				
KMC2S050					0.30	0.85				
KMC2S075					0.50	0.85				

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■ Structure & Dimensions



(Unit: mm)

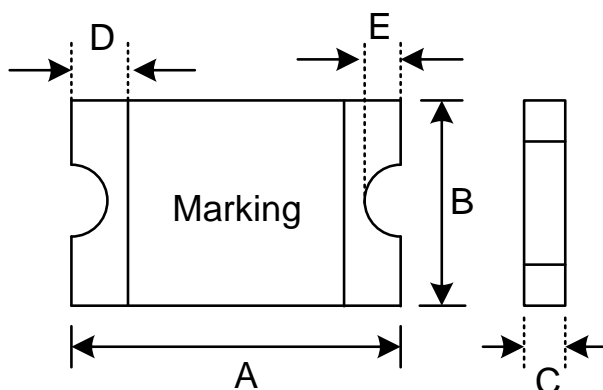
Part No.	A		B		C		D		E	
	(Min.)	(Max.)	(Min.)	(Max.)	(Min.)	(Max.)	(Min.)	(Max.)	(Min.)	(Max.)
KMC3S005	3.00	3.50	1.50	1.80	0.50	0.90	0.125	0.75	0.08	0.45
KMC3S010					0.50	0.90				
KMC3S012					0.35	0.75				
KMC3S016					0.28	0.68				
KMC3S020					0.28	0.68				
KMC3S025					0.28	0.68				
KMC3S035					0.28	0.68				
KMC3S050					0.28	0.68				
KMC3S050-15					0.28	1.06				
KMC3S075					0.28	0.75				
KMC3S100					0.40	0.88				
KMC3S110					0.40	0.88				
KMC3S150					0.55	1.35				
KMC3S200					0.80	1.35				

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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.)
KMC5S010	4.37	4.73	3.07	3.41	0.50	0.90	0.20	1.2	0.15	0.65
KMC5S014					0.50	0.90				
KMC5S020					0.50	0.90				
KMC5S035					0.28	0.68				
KMC5S050					0.28	0.68				
KMC5S075					0.28	0.68				
KMC5S075-24					0.60	1.20				
KMC5S075-33					0.60	1.20				
KMC5S110					0.28	0.68				
KMC5S110-16					0.60	1.00				
KMC5S110-24					0.60	1.00				
KMC5S110-33					0.80	1.60				
KMC5S125					0.28	0.68				
KMC5S125-16					0.30	1.25				
KMC5S150					0.28	0.68				
KMC5S150-12					0.60	1.00				
KMC5S150-24					0.70	1.50				
KMC5S160					0.28	0.68				
KMC5S200					0.35	0.85				
KMC5S200-16					0.80	1.60				
KMC5S260	0.35	0.90								
KMC5S260-16	0.35	2.00								
KMC5S300	0.60	1.20								

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■ Electrical Characteristics at 23°C

Part No.	Marking	Vmax.	I _{max} .	I _{hold}	I _{trip}	Pd (Max.)	Maximum Time to Trip		Resistance		Safety Approvals	
		(V _{dc})	(A)	(A)	(A)	(W)	Current	Time	Initial Ri	Post Trip R1	UL/cUL	TUV
							(A)	(Sec.)	Min. (Ω)	Max. (Ω)		
KMC1S010	1	15	40	0.10	0.30	0.50	0.50	1.00	0.900	6.000	√	√
KMC1S020	2	9	40	0.20	0.50	0.50	1.00	0.60	0.550	3.500	√	√
KMC1S025	5	9	40	0.25	0.55	0.50	8.00	0.08	0.500	3.000	√	√
KMC1S035	7	6	40	0.35	0.75	0.50	8.00	0.10	0.200	1.000	√	√
KMC2S010	D	15	100	0.10	0.30	0.50	0.50	1.50	1.000	6.000	√	√
KMC2S010-24	D	24	100	0.10	0.30	0.50	0.50	1.50	1.000	6.000	√	√
KMC2S020	L	9	100	0.20	0.50	0.50	8.00	0.02	0.650	3.500	√	√
KMC2S035	T	6	100	0.35	0.75	0.50	8.00	0.10	0.250	1.200	√	√
KMC2S050	O	6	100	0.50	1.00	0.50	8.00	0.10	0.150	0.850	√	√
KMC2S075	X	6	100	0.75	1.50	0.50	8.00	0.20	0.090	0.350	√	√
KMC3S005	TH	60	100	0.05	0.15	0.40	0.25	1.50	3.600	50.000	√	√
KMC3S010	TY	60	100	0.10	0.25	0.40	0.50	1.00	1.600	15.000	√	√
KMC3S012	TJ	30	100	0.125	0.29	0.50	1.00	0.20	1.400	6.000	√	
KMC3S016	TK	30	100	0.16	0.37	0.50	1.00	0.30	1.100	4.500	√	√
KMC3S020	TL	24	100	0.20	0.42	0.60	8.00	0.10	0.650	2.600	√	
KMC3S025	TN	16	100	0.25	0.50	0.60	8.00	0.08	0.550	2.300	√	√
KMC3S035	TP	16	100	0.35	0.75	0.60	8.00	0.10	0.300	1.200	√	√
KMC3S050	TQ	8	100	0.50	1.00	0.60	8.00	0.10	0.150	0.700	√	√
KMC3S050-15	TQ1	15	100	0.50	1.00	0.90	8.00	0.10	0.150	0.700	√	√
KMC3S075	TR	8	100	0.75	1.50	0.60	8.00	0.10	0.100	0.290	√	√
KMC3S100	TS	6	100	1.00	1.80	0.80	8.00	0.30	0.065	0.210	√	√
KMC3S110	TU	8	100	1.10	2.20	0.80	8.00	0.10	0.070	0.200	√	√
KMC3S150	TV	8	100	1.50	3.00	0.80	8.00	0.30	0.040	0.120	√	√
KMC3S200	TX	6	100	2.00	3.50	1.00	8.00	1.50	0.020	0.080	√	√

Note : UL&cUL File No: E138827

TUV File No: R50143386 , J50218395

Polymer PTC Resettable Fuse: KMC Series



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■ 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)		
KMC5S010	T 010	30	100	0.10	0.30	0.80	0.50	1.50	1.600	15.000	√	√
KMC5S014	T 014	60	10	0.14	0.34	0.80	1.50	0.15	1.500	6.000	√	√
KMC5S020	T 020	30	100	0.20	0.40	0.80	8.00	0.02	0.800	5.000	√	√
KMC5S035	T 035	16	100	0.35	0.70	0.80	8.00	0.10	0.320	1.500	√	√
KMC5S050	T 050	16	100	0.50	1.00	0.80	8.00	0.15	0.150	1.000	√	√
KMC5S075	T 075	16	100	0.75	1.50	0.80	8.00	0.20	0.110	0.450	√	√
KMC5S075-24	T ⁰⁷⁵ ₂₄	24	100	0.75	1.50	1.0	8.00	0.20	0.110	0.400	√	√
KMC5S075-33	T ⁰⁷⁵ ₃₃	33	20	0.75	1.50	1.2	8.00	0.20	0.110	0.400	√	√
KMC5S110	T 110	8	100	1.10	2.20	0.80	8.00	0.30	0.040	0.210	√	√
KMC5S110-16	T ¹¹⁰ ₁₆	16	100	1.10	2.20	1.0	8.00	0.50	0.060	0.180	√	√
KMC5S110-24	T ¹¹⁰ ₂₄	24	20	1.10	2.20	1.2	8.00	0.50	0.060	0.200	√	√
KMC5S110-33	T ¹¹⁰ ₃₃	33	20	1.10	2.20	1.2	8.00	0.50	0.060	0.200	√	√
KMC5S125	T 125	6	100	1.25	2.50	0.80	8.00	0.40	0.050	0.140	√	√
KMC5S125-16	T ¹²⁵ ₁₆	16	100	1.25	2.50	1.0	8.00	0.40	0.050	0.140	√	√
KMC5S150	T 150	8	100	1.50	3.00	0.90	8.00	0.30	0.040	0.110	√	√
KMC5S150-12	T ¹⁵⁰ ₁₂	12	100	1.50	3.00	1.0	8.00	0.50	0.040	0.110	√	√
KMC5S150-24	T ¹⁵⁰ ₂₄	24	20	1.50	3.00	1.2	8.00	1.50	0.040	0.120	√	√
KMC5S160	T 160	8	100	1.60	3.20	0.80	8.00	1.00	0.030	0.100	√	√
KMC5S200	T 200	8	100	2.00	3.50	1.20	8.00	2.00	0.020	0.060	√	√
KMC5S200-16	T 200	16	100	2.00	3.50	1.20	8.00	2.00	0.020	0.060	√	
KMC5S260	T 260	8	100	2.60	5.00	1.20	8.00	2.50	0.015	0.047	√	√
KMC5S260-16	T 260	16	100	2.60	5.00	1.5	8.00	5.0	0.015	0.050	√	
KMC5S300	T 300	6	100	3.00	5.00	1.20	8.00	4.00	0.012	0.040	√	√

Note : UL&cUL File No: E138827

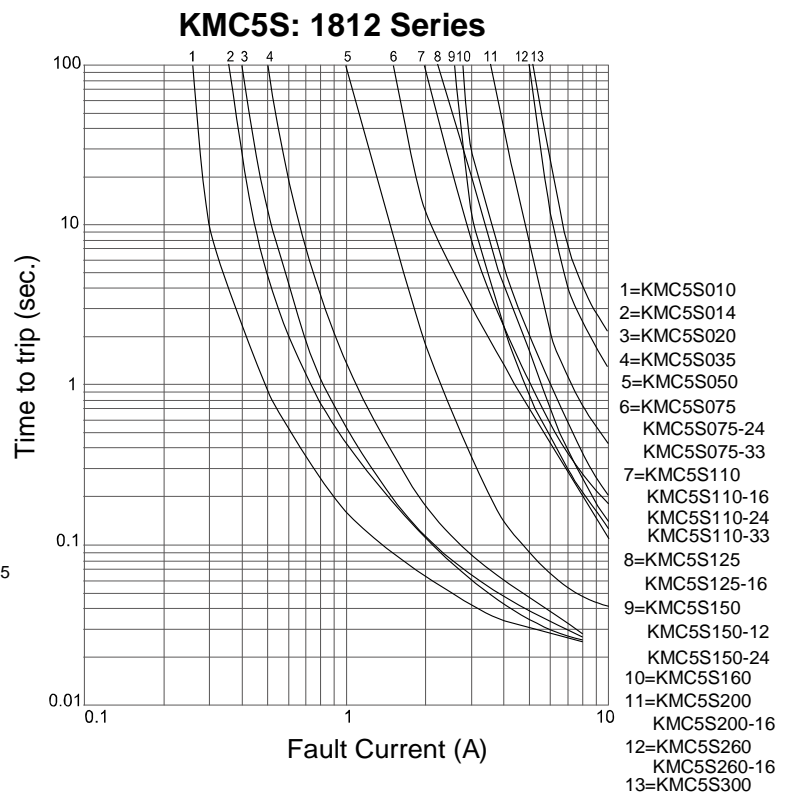
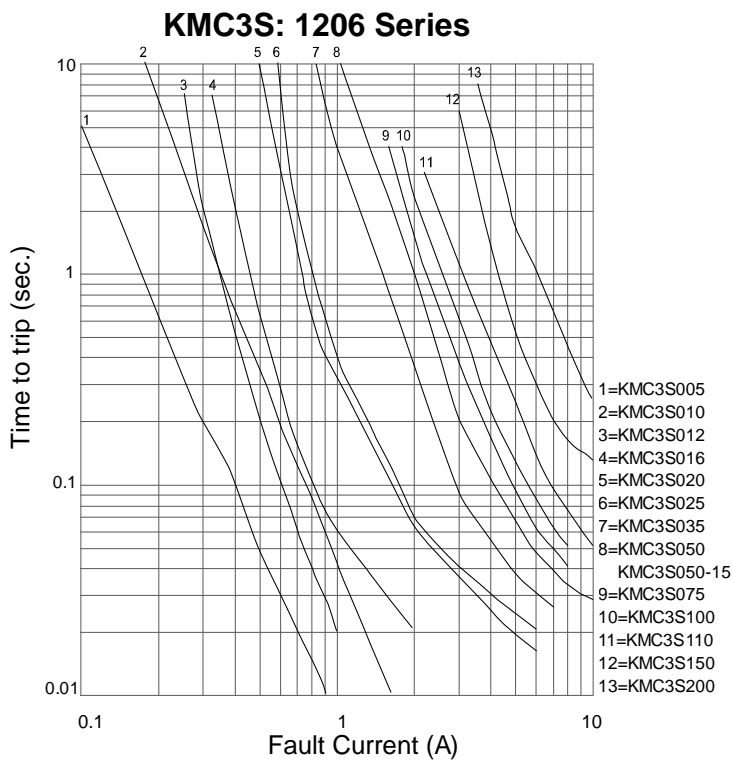
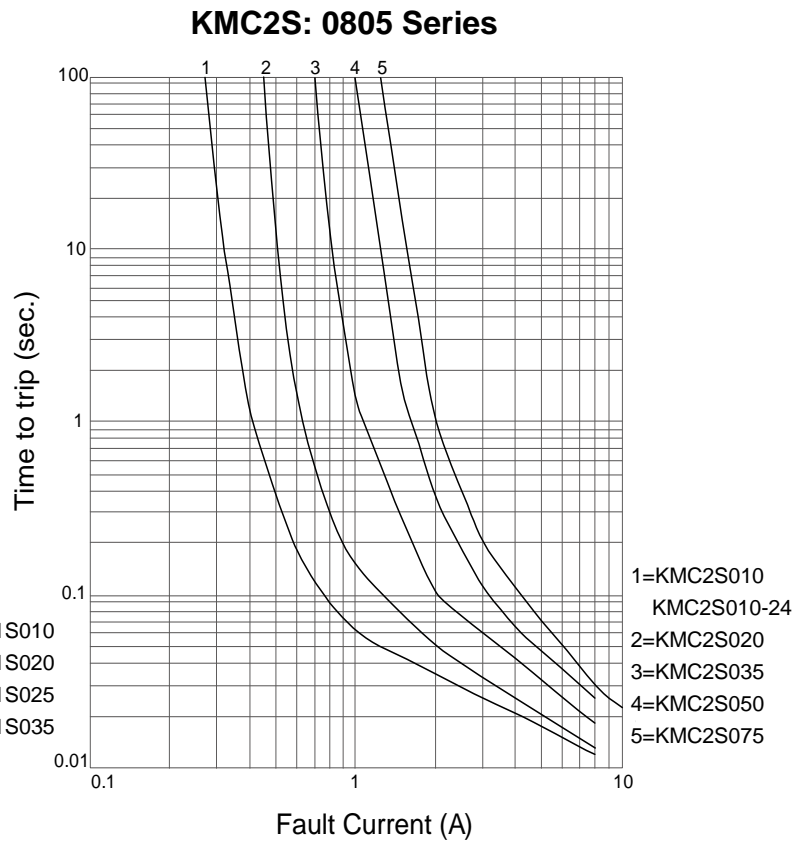
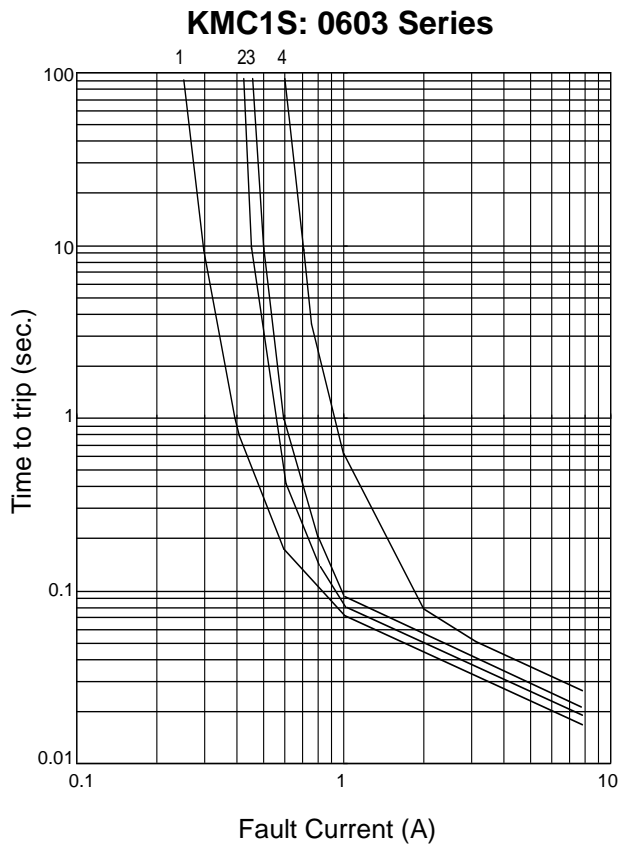
TUV File No: R50143386 , J50218395

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Typical Time to Trip Curve at 23°C



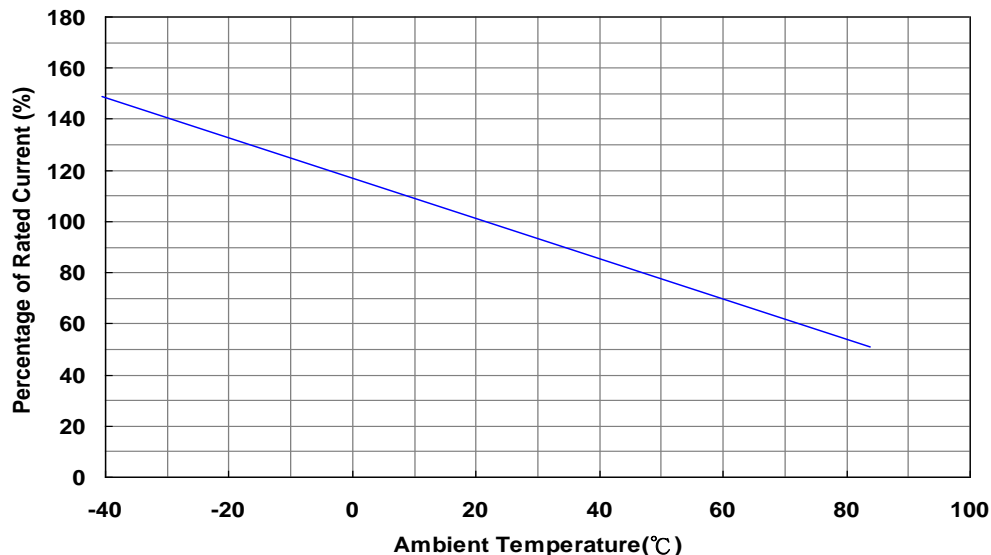
Polymer PTC Resettable Fuse: KMC Series

SMD Type



■ KMC1S (0603) Series Ihold & Itrip Thermal Derating Curve

Derating Curve for KMC1S (0603) Series



KMC1S (0603) Series Ihold Thermal Derating Chart

(Unit: A)

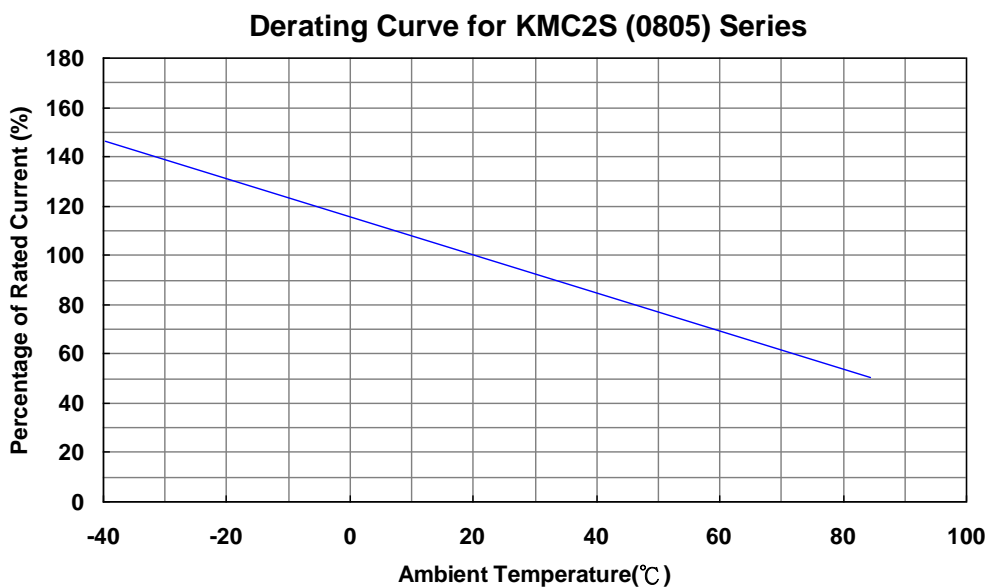
Part No.	Ambient Temperature								
	-40°C	-20°C	0°C	23°C	40°C	50°C	60°C	70°C	85°C
KMC1S010	0.13	0.12	0.11	0.10	0.08	0.07	0.06	0.05	0.03
KMC1S020	0.27	0.25	0.23	0.20	0.17	0.14	0.12	0.10	0.07
KMC1S025	0.32	0.29	0.27	0.25	0.21	0.18	0.16	0.14	0.10
KMC1S035	0.47	0.41	0.38	0.35	0.29	0.26	0.24	0.20	0.14

Polymer PTC Resettable Fuse: KMC Series

SMD Type



■ KMC2S (0805) Series Ihold & Itrip Thermal Derating Curve



KMC2S (0805) Series Ihold Thermal Derating Chart

(Unit: A)

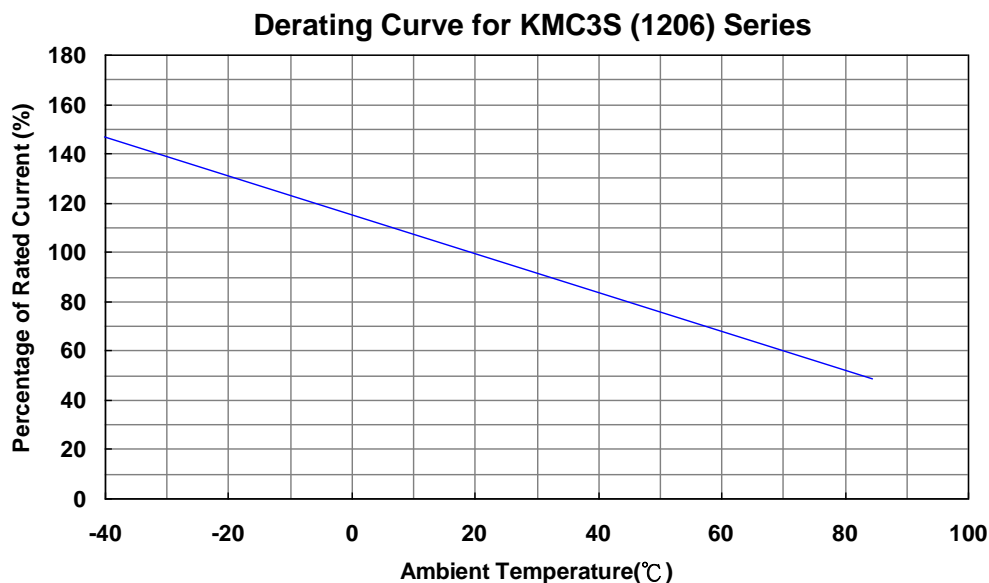
Part No.	Ambient Temperature								
	-40°C	-20°C	0°C	23°C	40°C	50°C	60°C	70°C	85°C
KMC2S010	0.14	0.12	0.11	0.10	0.08	0.07	0.06	0.05	0.03
KMC2S010-24	0.14	0.12	0.11	0.10	0.08	0.07	0.06	0.05	0.03
KMC2S020	0.28	0.25	0.23	0.20	0.17	0.14	0.12	0.10	0.07
KMC2S035	0.47	0.44	0.39	0.35	0.30	0.27	0.24	0.20	0.14
KMC2S050	0.68	0.62	0.55	0.50	0.40	0.37	0.33	0.29	0.23
KMC2S075	1.00	0.90	0.79	0.75	0.63	0.57	0.53	0.41	0.34

Polymer PTC Resettable Fuse: KMC Series

SMD Type



■ KMC3S (1206) Series Ihold & Itrip Thermal Derating Curve



■ KMC3S (1206) Series Ihold Thermal Derating Chart

(Unit: A)

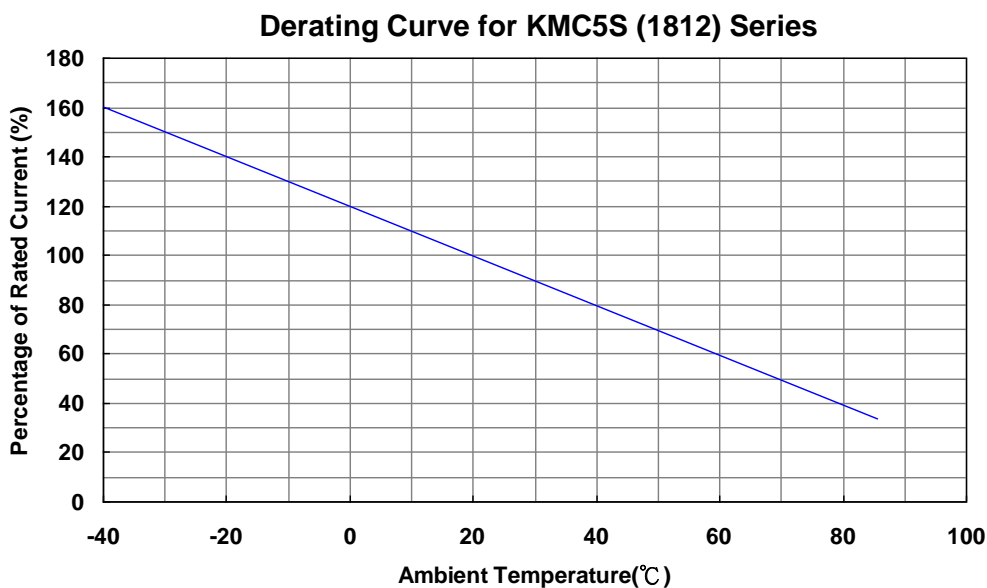
Part no	Ambient Temperature								
	-40°C	-20°C	0°C	23°C	40°C	50°C	60°C	70°C	85°C
KMC3S005	0.0725	0.063	0.057	0.05	0.043	0.038	0.035	0.03	0.026
KMC3S010	0.145	0.133	0.115	0.10	0.085	0.075	0.07	0.06	0.055
KMC3S012	0.20	0.17	0.15	0.12	0.11	0.10	0.09	0.08	0.07
KMC3S016	0.21	0.20	0.18	0.16	0.14	0.13	0.12	0.11	0.09
KMC3S020	0.34	0.30	0.26	0.20	0.17	0.15	0.13	0.11	0.08
KMC3S025	0.37	0.33	0.29	0.25	0.22	0.20	0.17	0.15	0.12
KMC3S035	0.50	0.45	0.40	0.35	0.30	0.27	0.24	0.18	0.15
KMC3S050	0.71	0.64	0.57	0.50	0.42	0.39	0.35	0.31	0.25
KMC3S050-15	0.71	0.64	0.57	0.50	0.42	0.39	0.35	0.31	0.25
KMC3S075	1.14	1.01	0.88	0.75	0.65	0.59	0.54	0.49	0.41
KMC3S100	1.45	1.31	1.15	1.00	0.84	0.77	0.69	0.61	0.48
KMC3S110	1.64	1.46	1.30	1.06	0.92	0.83	0.80	0.65	0.52
KMC3S150	2.18	1.94	1.72	1.50	1.28	1.17	1.06	0.96	0.77
KMC3S200	2.92	2.64	2.35	2.00	1.79	1.64	1.50	1.22	1.14

Polymer PTC Resettable Fuse: KMC Series

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■ KMC5S (1812) Series Ihold & Itrip Thermal Derating Curve



■ KMC5S (1812) Series Ihold Thermal Derating Chart

(Unit: A)

Part no	Ambient Temperature								
	-40°C	-20°C	0°C	23°C	40°C	50°C	60°C	70°C	85°C
KMC5S010	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.03
KMC5S014	0.23	0.19	0.17	0.14	0.12	0.10	0.09	0.08	0.06
KMC5S020	0.29	0.26	0.23	0.20	0.17	0.15	0.14	0.12	0.10
KMC5S035	0.50	0.45	0.40	0.35	0.29	0.26	0.24	0.21	0.19
KMC5S050	0.77	0.68	0.59	0.50	0.44	0.40	0.37	0.33	0.29
KMC5S075	1.15	1.01	0.88	0.75	0.65	0.60	0.55	0.49	0.43
KMC5S075-24	1.06	0.95	0.84	0.75	0.60	0.55	0.50	0.45	0.37
KMC5S075-33	1.10	1.00	0.88	0.75	0.66	0.60	0.55	0.47	0.36
KMC5S110	1.59	1.43	1.26	1.10	0.95	0.87	0.80	0.71	0.60
KMC5S110-16	1.58	1.43	1.27	1.10	0.95	0.85	0.77	0.71	0.58
KMC5S110-24	1.55	1.40	1.25	1.10	0.93	0.83	0.73	0.63	0.50
KMC5S110-33	1.55	1.40	1.25	1.10	0.93	0.83	0.73	0.63	0.50
KMC5S125	2.00	1.75	1.52	1.25	1.00	0.95	0.90	0.75	0.53
KMC5S125-16	2.00	1.75	1.52	1.25	1.00	0.95	0.90	0.75	0.53
KMC5S150	2.30	2.03	1.76	1.50	1.25	1.10	1.00	0.80	0.76
KMC5S150-12	2.04	1.88	1.68	1.50	1.25	1.10	1.00	0.80	0.60
KMC5S150-24	2.05	1.87	1.67	1.50	1.25	1.08	0.95	0.77	0.60
KMC5S160	2.27	2.05	1.83	1.60	1.35	1.25	1.15	1.00	0.85
KMC5S200	2.60	2.44	2.22	2.00	1.80	1.60	1.50	1.07	0.80
KMC5S200-16	2.60	2.44	2.22	2.00	1.80	1.60	1.50	1.07	0.80
KMC5S260	3.40	3.16	2.80	2.60	2.34	2.08	1.95	1.39	1.04
KMC5S260-16	3.40	3.16	2.80	2.60	2.34	2.08	1.95	1.39	1.04
KMC5S300	4.15	3.76	3.46	3.00	2.55	2.28	2.01	1.61	1.33

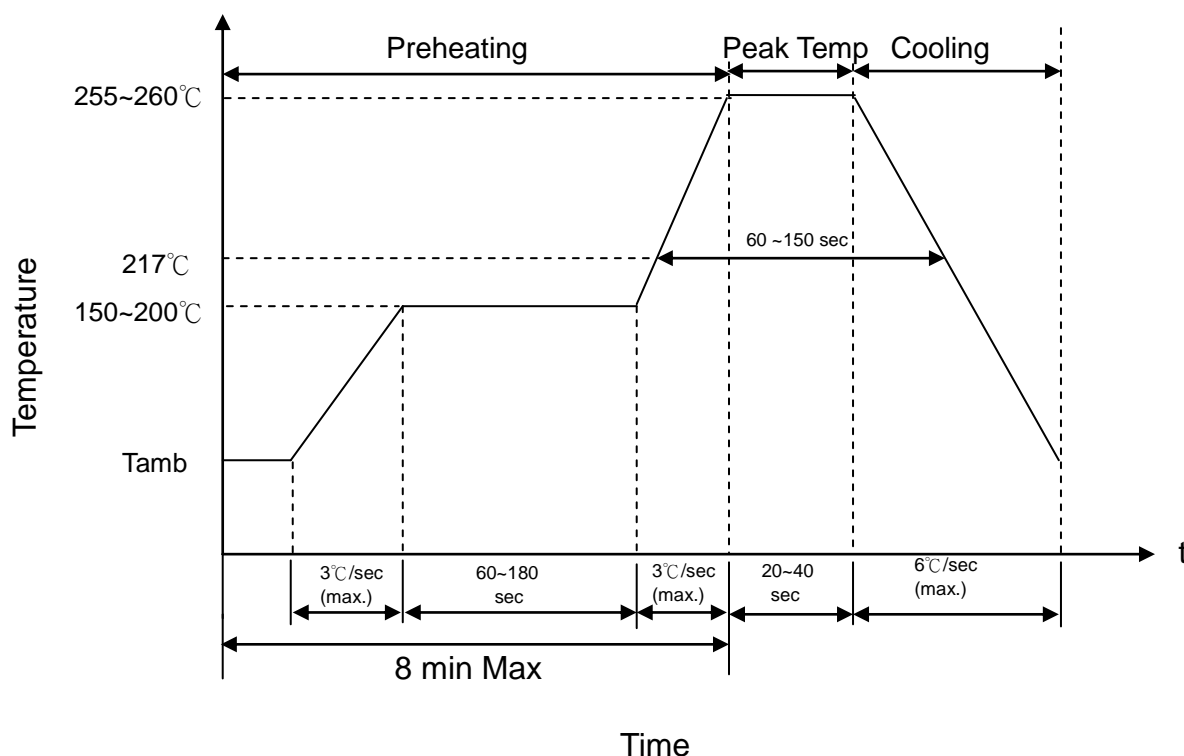
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■ Recommended Soldering Condition

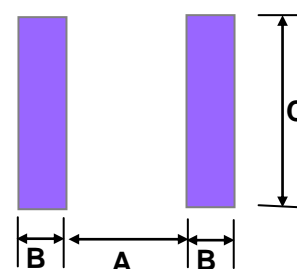
● IR-Reflow Soldering Profile



■ Recommended Soldering Pad Dimensions (Nominal)

(Unit:mm)

Series	Size	A	B	C
KMC1S	0603	0.80	1.00	1.00
KMC2S	0805	1.20	1.00	1.50
KMC3S	1206	2.00	1.00	1.90
KMC5S	1812	3.45	1.78	3.50



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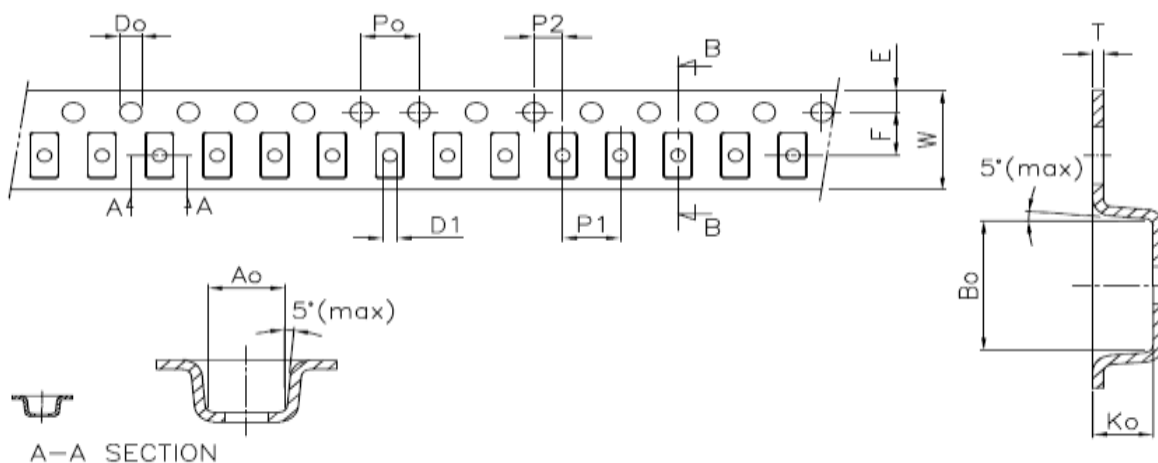


■ Reliability

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	±5% typical resistance change
Rapid Change of Temperature	IEC 60738-1	85±5/-40±5°C, 20 cycles, Duration:30min	-33% typical resistance change
Overload Endurance	UL 1434	Vmax,120% Imax, 50 cycles Vmax,300% Itrip, 6000 cycles	No visible damage
Trip Endurance	UL 1434	Vmax, Itrip ≤ I ≤ Imax, 1000±24hrs	No visible damage
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



◆ KMC1S Series: SMD 0603 Type

For KMC1S010, KMC1S020, KMC1S025

(Unit: mm)

Index Size	A_o	B_o	K_o	P_o	P_1	P_2	T	E	F	D_o	D_1	W	$10P_o$
	±0.05	±0.05	±0.05	±0.10	±0.10	±0.05	±0.05	±0.10	±0.05	+0.10/-0	+0.10 -0.05	+0.30 -0.10	±0.20
0603	1.10	1.85	0.60	4.00	4.00	2.00	0.20	1.75	3.50	1.50	0.50	8.00	40.00

Polymer PTC Resettable Fuse: KMC Series



SMD Type

For KMC1S035

(Unit: mm)

Index Size	A ₀ ±0.10	B ₀ ±0.15	K ₀ ±0.05	P ₀ ±0.10	P ₁ ±0.10	P ₂ ±0.05	T +0.05 -0.08	E ±0.10	F ±0.05	D ₀ ±0.05	D ₁ Min.	W ±0.20	10P ₀ ±0.20
0603	1.10	1.85	0.75	4.00	4.00	2.00	0.23	1.75	3.50	1.55	0.40	8.00	40.00

◆ KMC2S Series: SMD 0805 Type

(Unit: mm)

Index Size	A ₀ ±0.10	B ₀ ±0.10	K ₀ ±0.05	P ₀ ±0.08	P ₁ ±0.10	P ₂ ±0.05	T ±0.10	E ±0.10	F ±0.05	D ₀ ±0.05	D ₁ Min.	W ±0.10	10P ₀ ±0.20
0805	1.60	2.30	0.90	4.00	4.00	2.00	0.25	1.75	3.50	1.55	1.00	8.00	40.00

◆ KMC3S Series: SMD 1206 Type

For KMC3S005, KMC3S010, KMC3S050-15, KMC3S100, KMC3S110, KMC3S150, and KMC3S200

(Unit: mm)

Index Size	A ₀ +0.1/-0	B ₀ +0.1/-0	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	1.40	4.00	4.00	2.00	0.23	1.75	3.50	1.55	1.00	8.00	40.00

For KMC3S012, KMC3S016, KMC3S020, KMC3S025, KMC3S035, KMC3S050, and KMC3S075

(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	4.00	4.00	2.00	0.23	1.75	3.50	1.55	1.00	8.00	40.00

◆ KMC5S Series: SMD 1812 Type

For KMC5S010, KMC5S014, KMC5S020, KMC5S075-24, KMC5S075-33, KMC5S110-16, KMC5S110-24, KMC5S110-33, KMC5S125-16, KMC5S150-12, KMC5S150-24, KMC5S200-16, KMC5S260, KMC5S260-16, and KMC5S300

(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
1812	3.56	4.94	1.70	4.00	8.00	2.00	0.25	1.75	5.50	1.55	1.50	12.00	40.00

For KMC5S035, KMC5S050, KMC5S075, KMC5S110, KMC5S125, KMC5S150, KMC5S160, and KMC5S200

(Unit: mm)

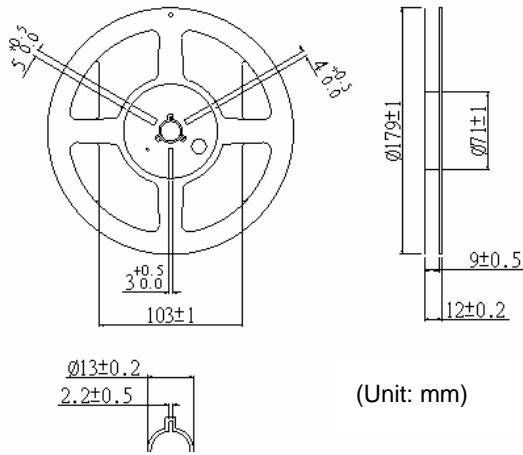
Index Size	A ₀ ±0.10	B ₀ ±0.10	K ₀ ±0.05	P ₀ ±0.10	P ₁ ±0.10	P ₂ ±0.10	T ±0.03	E ±0.10	F ±0.10	D ₀ ±0.05	D ₁ Min.	W ±0.30	10P ₀ ±0.20
1812	3.50	5.00	0.90	4.00	8.00	2.00	0.25	1.75	5.50	1.55	1.50	12.00	40.00

Polymer PTC Resettable Fuse: KMC Series

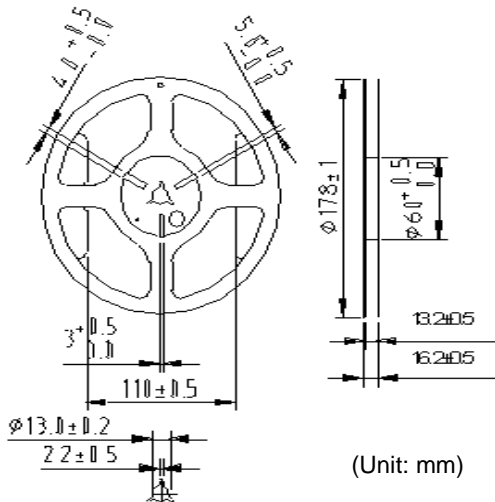
SMD Type



Quantity



Size	Part no	Quantity (pcs/reel)
0603	KMC1S010, KMC1S020, KMC1S025	6,000
	KMC1S035	5,000
0805	For all parts	4,000
1206	KMC3S005, KMC3S010, KMC3S050-15, KMC3S100, KMC3S110, KMC3S150, KMC3S200	2,500
	KMC3S012, KMC3S016, KMC3S020, KMC3S025, KMC3S035, KMC3S050, KMC3S075	5,000



Size	Part no	Quantity (pcs/reel)
1812	KMC5S010, KMC5S014, KMC5S020, KMC5S075-24, KMC5S075-33, KMC5S110-16, KMC5S110-24, KMC5S110-33, KMC5S125-16, KMC5S150-12, KMC5S150-24, KMC5S200-16, KMC5S260, KMC5S260-16, KMC5S300	1,000
	KMC5S035, KMC5S050, KMC5S075, KMC5S110, KMC5S125, KMC5S150, KMC5S160, KMC5S200	2,000

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