

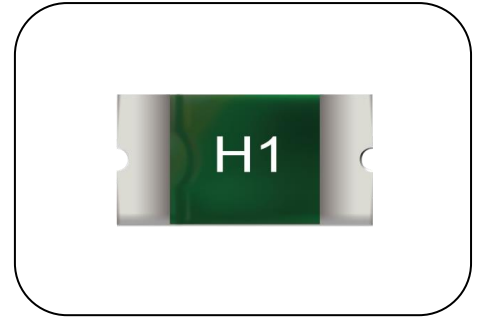
# Polymer PTC Resettable Fuse: KMH Series

## 125°C SMD Type for Automotive Applications



### ■ Features

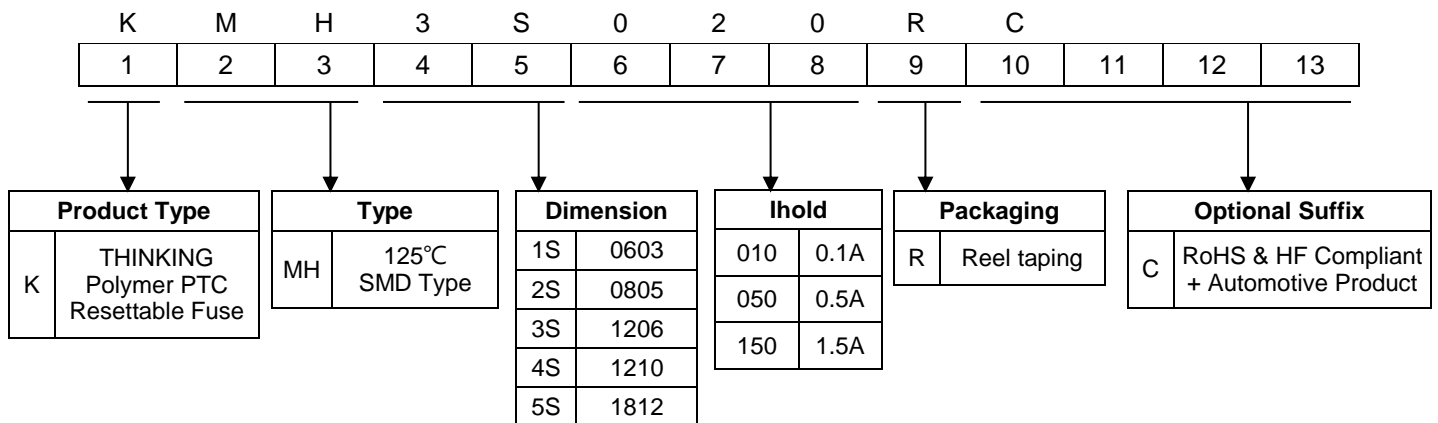
1. RoHS & Halogen-Free (HF) compliant
2. EIA size: 0603, 0805, 1206, 1210, 1812
3. Resettable devices for automotive applications
4. Hold current ratings from 0.05A to 1.75A
5. Maximum voltage: 9Vdc to 60Vdc
6. Operating & storage temperature range: -40°C to +125°C
7. AEC-Q 200 and ISO/TS16949 compliant



### ■ Recommended Applications

1. Protection of automotive electronics modules
2. Advanced Driver Assistance System (ADAS)
3. Automotive infotainment system
4. Automotive motor
5. Automotive electronic control module (ECU)
6. Automotive lighting
7. Automotive wire harness

### ■ Part Number Code

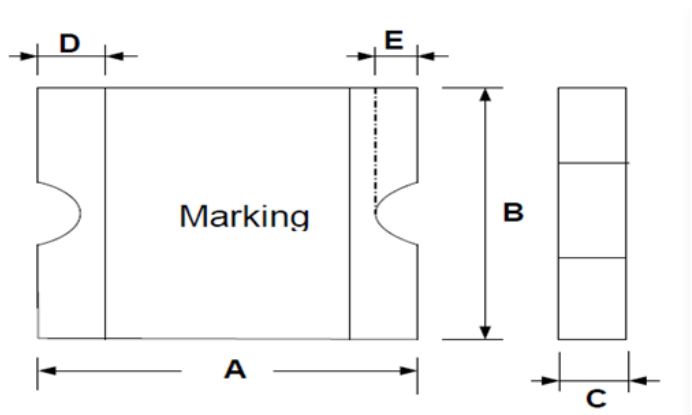


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### ■ Structure and Dimensions



(Unit: mm)

Product Series	A		B		C		D		E	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
KMH1S	1.4	1.8	0.6	1	0.6	1	0.15	0.5	---	0.4
KMH2S	2	2.2	1.2	1.5	0.6	1	0.15	0.55	0.05	0.45
KMH3S	3	3.5	1.5	1.8	0.6	1	0.125	0.75	0.08	0.45
KMH4S	3	3.43	2.35	2.8	0.6	1	0.125	0.75	0.08	0.5
KMH5S	4.37	4.73	3.07	3.41	0.6	1	0.2	1.2	0.15	0.65

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### ■ Electrical Characteristics at 23°C

Part No.	Marking	Ihold. (A)	Itrip (A)	Vmax (V)	Imax (A)	Pd max. (W)	Time to Trip		Resistance at 23°C	
							Current (A)	Time (Sec.)	Ri min	Post trip, R1max
									Ω	Ω
KMH1S005	2	0.05	0.25	12	40	0.5	0.5	1.5	1.5	30
KMH1S010	5	0.1	0.5	12	40	0.5	2.5	1.5	0.9	8.5
KMH1S016	7	0.16	0.8	12	40	0.5	8	0.1	0.6	6
KMH2S005	C	0.05	0.25	16	40	0.9	0.5	1.5	1.5	50
KMH2S010	K	0.1	0.5	16	40	0.9	2.5	1.5	1	7.5
KMH2S016	Y	0.16	0.8	16	40	0.9	8	0.1	0.7	6
KMH2S020	L	0.2	1	16	40	0.9	8	0.1	0.5	5
KMH2S035	T	0.35	1.75	16	40	0.9	8	0.1	0.25	3
KMH2S050	O	0.5	2	12	40	0.9	8	0.1	0.12	1.6
KMH3S010	HY	0.1	0.5	30	20	0.9	2.5	1.5	1	7.5
KMH3S010-60	HY1	0.1	0.5	60	20	1.8	2.5	1.5	1	7.5
KMH3S016	HK	0.16	0.8	30	20	0.9	8	0.1	0.7	6
KMH3S020	H2	0.2	1	30	20	0.9	8	0.1	0.6	5
KMH3S035	HP	0.35	1.75	16	20	0.48	8	0.1	0.4	2.6
KMH3S035-30	HP1	0.35	1.75	30	20	0.9	8	0.1	0.4	2.6
KMH3S050-16	H1	0.5	2.5	16	20	0.9	8	0.1	0.17	1.6
KMH3S050-24	HQ	0.5	2.5	24	20	1.35	8	0.1	0.17	1.6
KMH3S075	HR	0.75	3	12	40	1.2	8	5	0.08	0.7
KMH4S010	Ha	0.1	0.5	30	20	1	2.5	1.5	1	7.5
KMH4S016	Hb	0.16	0.8	30	20	1	8	0.1	0.7	6
KMH4S020	Hd	0.2	1	30	20	1	8	0.1	0.6	5
KMH4S035	Hf	0.35	1.75	30	20	1	8	0.1	0.4	2.2
KMH4S050	Hg	0.5	2.5	30	20	1	8	0.1	0.3	1.6
KMH4S075	Hh	0.75	3.75	16	20	1	8	5	0.1	1
KMH4S110	Hm	1.1	5.5	9	20	1	8	5	0.06	0.5
KMH4S125	Hn	1.25	3.75	9	40	1.5	8	5	0.03	0.3
KMH4S150	Hr	1.5	4.5	9	40	1.5	8	5	0.025	0.25
KMH5S020	H020	0.2	1	42	40	1.2	8	0.1	0.5	4.5
KMH5S035	H035	0.35	1.75	36	40	1.2	8	0.1	0.3	2.6
KMH5S050	H050	0.5	2.5	30	40	1.2	8	0.1	0.18	1.6
KMH5S075	H075	0.75	3.75	30	40	1.5	8	5	0.09	0.85
KMH5S110	H110	1.1	5.5	16	40	1.5	8	5	0.05	0.45
KMH5S125	H125	1.25	6.25	9	40	1.5	8	5	0.03	0.3
KMH5S150	H150	1.5	6	9	40	1.5	10	5	0.022	0.2
KMH5S175	H175	1.75	7	9	40	1.5	10	5	0.018	0.17

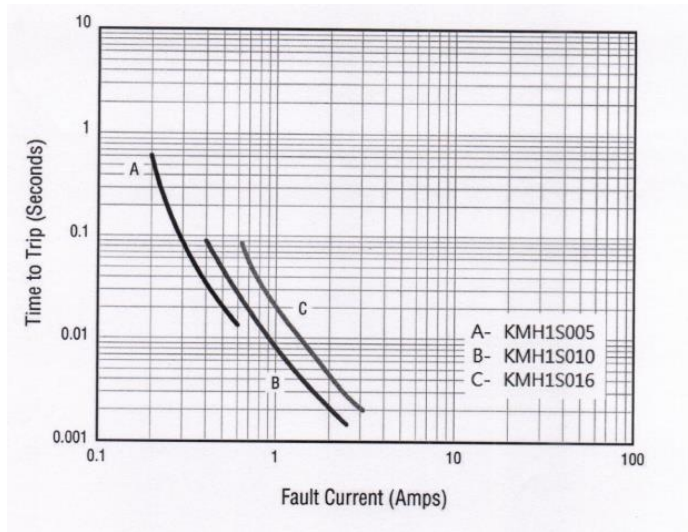
# Polymer PTC Resettable Fuse: KMH Series

## 125°C SMD Type for Automotive Applications

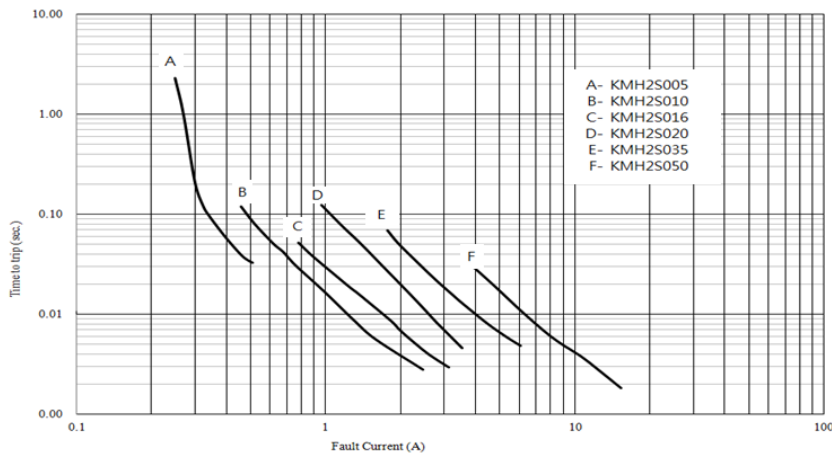


### ■ Typical Time to Trip Curve at 23°C

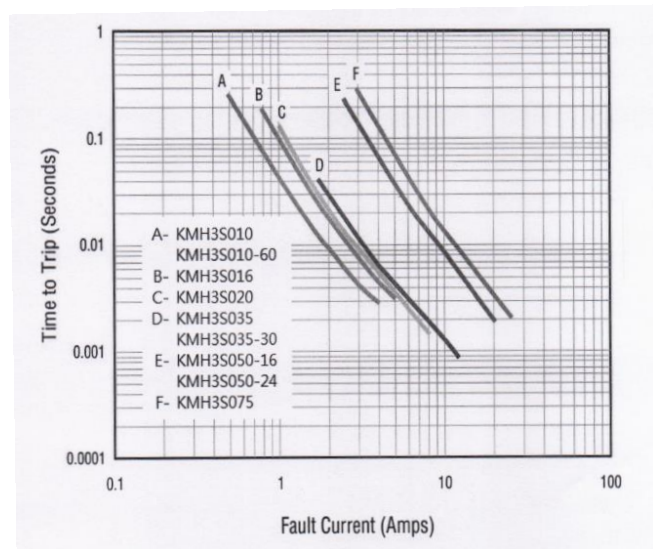
#### KMH0603 Series



#### KMH0805 Series



#### KMH1206 Series



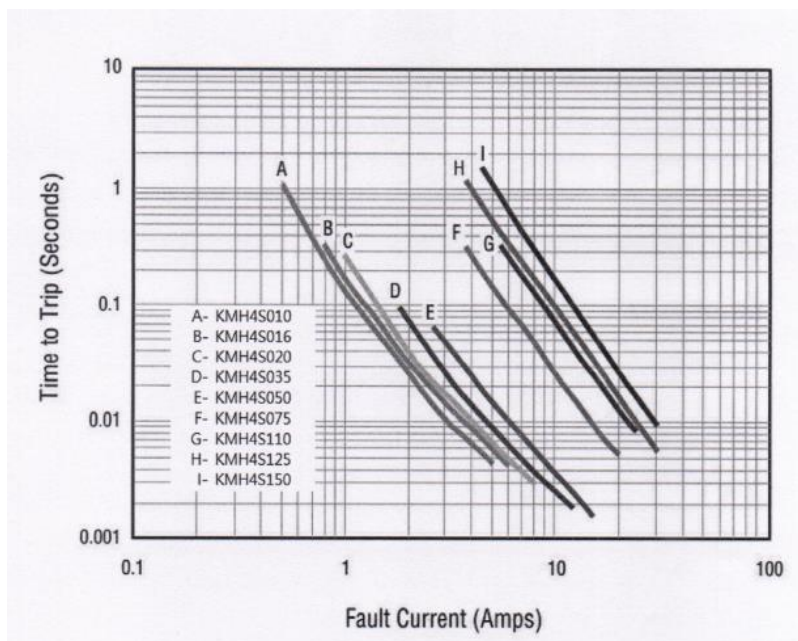
# Polymer PTC Resettable Fuse: KMH Series

## 125°C SMD Type for Automotive Applications

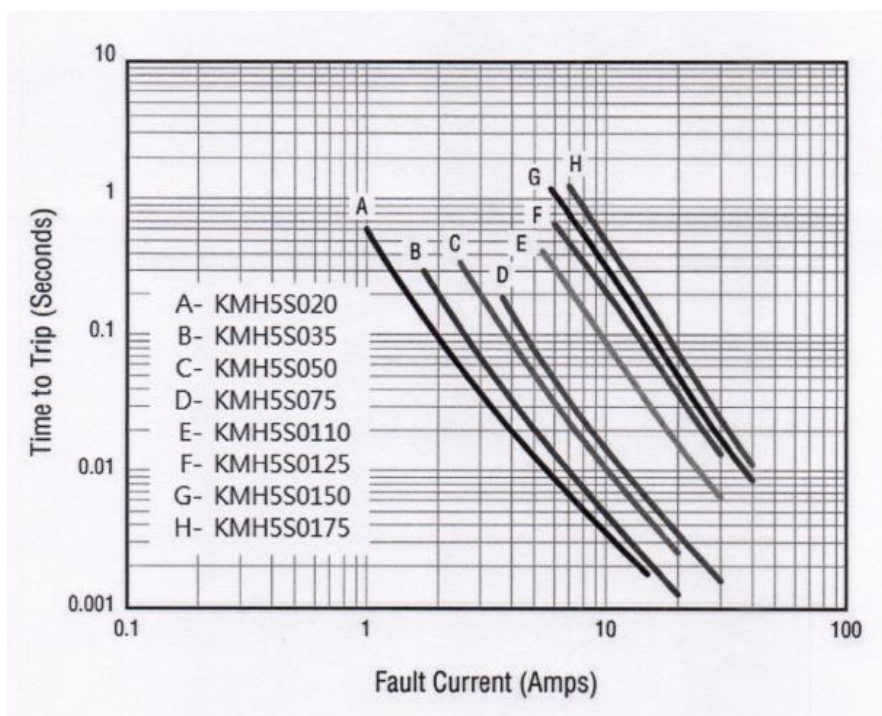


### ■ Typical Time to Trip Curve at 23°C

#### KMH1210 Series



#### KMH1812 Series

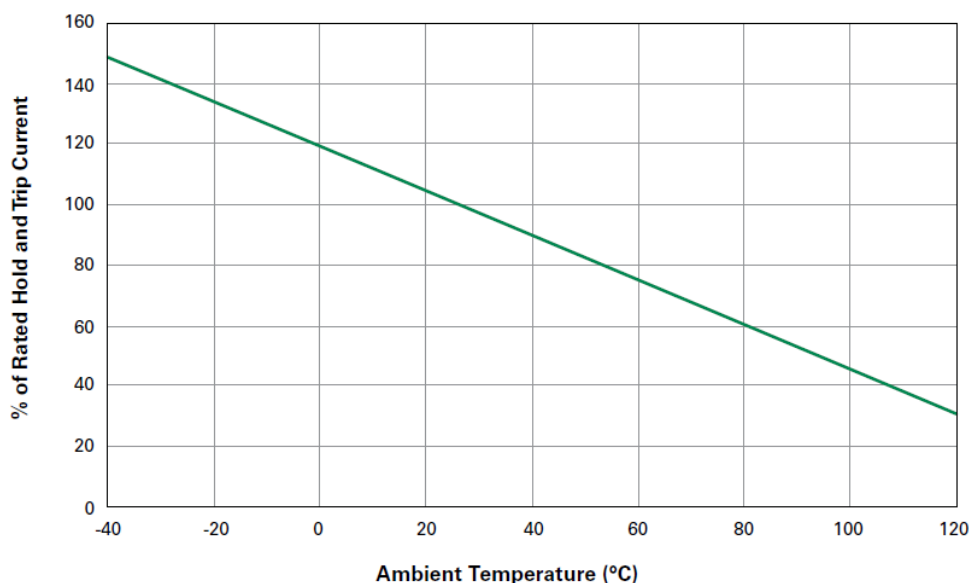


# Polymer PTC Resettable Fuse: KMH Series

## 125°C SMD Type for Automotive Applications



### ■ Ihold & Itrip Thermal Derating Curve



### ■ Ihold Thermal Derating Chart

#### ● KMH0603 Series

(Unit: A)

Part No.	Ambient Operation Temperature									
	-40°C	-20°C	0°C	+23°C	+40°C	+50°C	+60°C	+70°C	+85°C	+125°C
KMH1S005	0.073	0.066	0.058	0.05	0.044	0.041	0.037	0.034	0.028	0.014
KMH1S010	0.15	0.13	0.12	0.10	0.09	0.08	0.074	0.067	0.056	0.027
KMH1S016	0.23	0.21	0.19	0.16	0.14	0.13	0.12	0.11	0.09	0.04

#### ● KMH0805 Series

(Unit: A)

Part No.	Ambient Operation Temperature									
	-40°C	-20°C	0°C	+23°C	+40°C	+50°C	+60°C	+70°C	+85°C	+125°C
KMH2S005	0.07	0.07	0.06	0.05	0.04	0.04	0.04	0.03	0.03	0.01
KMH2S010	0.15	0.13	0.12	0.10	0.09	0.08	0.07	0.07	0.06	0.03
KMH2S016	0.23	0.21	0.19	0.16	0.14	0.13	0.12	0.11	0.09	0.04
KMH2S020	0.29	0.26	0.23	0.20	0.18	0.16	0.15	0.13	0.11	0.05
KMH2S035	0.51	0.46	0.41	0.35	0.31	0.28	0.26	0.23	0.20	0.09
KMH2S050	0.73	0.66	0.58	0.50	0.44	0.41	0.37	0.34	0.28	0.14

# Polymer PTC Resettable Fuse: KMH Series

## 125°C SMD Type for Automotive Applications



### ●KMH1206 Series

(Unit: A)

Part No.	Ambient Operation Temperature									
	-40°C	-20°C	0°C	+23°C	+40°C	+50°C	+60°C	+70°C	+85°C	+125°C
KMH3S010	0.15	0.13	0.12	0.10	0.09	0.08	0.07	0.07	0.06	0.03
KMH3S010-60	0.15	0.13	0.12	0.10	0.09	0.08	0.07	0.07	0.06	0.03
KMH3S016	0.23	0.21	0.19	0.16	0.14	0.13	0.12	0.11	0.09	0.04
KMH3S020	0.29	0.26	0.23	0.20	0.18	0.16	0.15	0.13	0.11	0.05
KMH3S035	0.51	0.46	0.41	0.35	0.31	0.28	0.26	0.23	0.2	0.09
KMH3S035-30	0.51	0.46	0.41	0.35	0.31	0.28	0.26	0.23	0.2	0.09
KMH3S050-16	0.73	0.66	0.58	0.50	0.44	0.41	0.37	0.34	0.28	0.14
KMH3S050-24	0.73	0.66	0.58	0.50	0.44	0.41	0.37	0.34	0.28	0.14
KMH3S075	1.09	0.98	0.87	0.75	0.66	0.61	0.56	0.5	0.42	0.20

### ●KMH1210 Series

(Unit: A)

Part No.	Ambient Operation Temperature									
	-40°C	-20°C	0°C	+23°C	+40°C	+50°C	+60°C	+70°C	+85°C	+125°C
KMH4S010	0.15	0.13	0.12	0.1	0.09	0.08	0.07	0.07	0.06	0.03
KMH4S016	0.23	0.21	0.19	0.16	0.14	0.13	0.12	0.11	0.09	0.04
KMH4S020	0.29	0.26	0.23	0.2	0.18	0.16	0.15	0.13	0.11	0.05
KMH4S035	0.51	0.46	0.41	0.35	0.31	0.28	0.26	0.23	0.2	0.09
KMH4S050	0.73	0.66	0.58	0.5	0.44	0.41	0.37	0.34	0.28	0.14
KMH4S075	1.09	0.98	0.87	0.75	0.66	0.61	0.56	0.5	0.42	0.2
KMH4S110	1.60	1.44	1.28	1.1	0.97	0.89	0.81	0.74	0.62	0.3
KMH4S125	1.81	1.64	1.45	1.25	1.1	1.01	0.93	0.84	0.7	0.34
KMH4S150	2.18	1.97	1.74	1.5	1.32	1.22	1.11	1.01	0.84	0.41

### ●KMH1812 Series

(Unit: A)

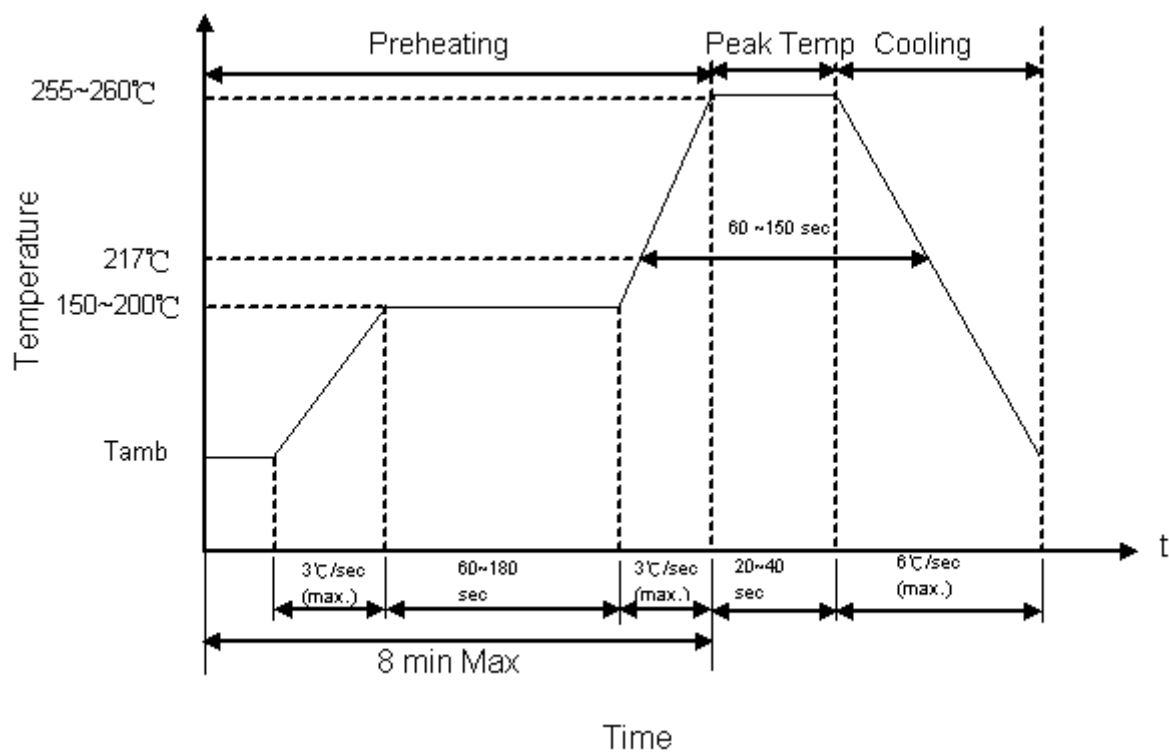
Part No.	Ambient Operation Temperature									
	-40°C	-20°C	0°C	+23°C	+40°C	+50°C	+60°C	+70°C	+85°C	+125°C
KMH5S020	0.29	0.26	0.23	0.2	0.18	0.16	0.15	0.13	0.11	0.05
KMH5S035	0.51	0.46	0.41	0.35	0.31	0.28	0.26	0.23	0.2	0.09
KMH5S050	0.73	0.66	0.58	0.5	0.44	0.41	0.37	0.34	0.28	0.14
KMH5S075	1.09	0.98	0.87	0.75	0.66	0.61	0.56	0.5	0.42	0.2
KMH5S110	1.60	1.44	1.28	1.1	0.97	0.89	0.81	0.74	0.62	0.3
KMH5S125	1.81	1.64	1.45	1.25	1.1	1.01	0.93	0.84	0.7	0.34
KMH5S150	2.18	1.97	1.74	1.5	1.32	1.22	1.11	1.01	0.84	0.41
KMH5S175	2.54	2.29	2.03	1.75	1.54	1.42	1.3	1.17	0.98	0.47

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## 125°C SMD Type for Automotive Applications



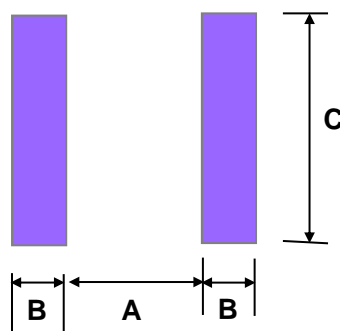
### ■ Recommended Soldering Condition



### ■ Recommended Soldering Pad Dimensions (Nominal)

(Unit: mm)

Series	A	B	C
KMH1S	0.8	1	1
KMH2S	1.2	1	1.5
KMH3S	2	1	1.9
KMH4S	2	1	2.8
KMH5S	3.45	1.78	3.50





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## 125°C SMD Type for Automotive Applications



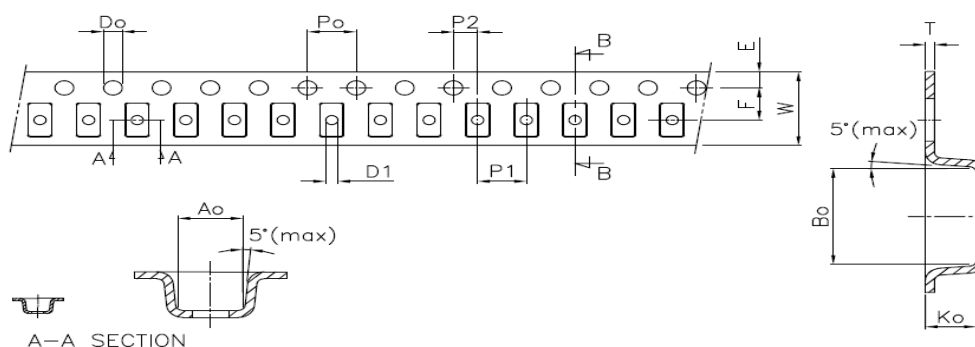
### ■ Reliability

Item	Test Condition / Methods	Criteria
High Temperature Storage	125±5°C, 1000±24hrs	±5% typical resistance change
Humidity Aging	85±5°C, 80~85%RH, 100±5hrs	±5% typical resistance change
Rapid Change of Temperature	125±5/-40±5°C, 20 cycles, Duration: 30 min	±5% typical resistance change
Resistance to Soldering Heat	260±5°C, 10±1 sec	No visible damage

Note: Operation and storage temperature: -40 ~ +125°C

### ■ Packaging

#### ● Taping Specification



(Unit: mm)

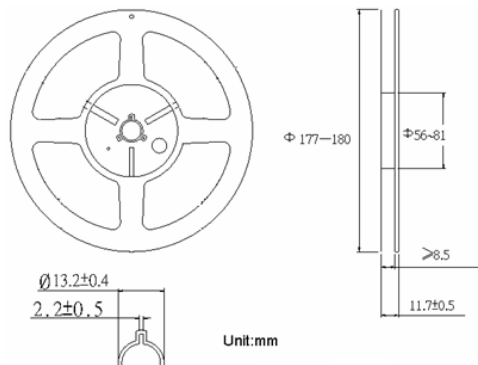
Index Type	A <sub>0</sub>	B <sub>0</sub>	K <sub>0</sub>	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	T	E	F	D <sub>0</sub>	D <sub>1</sub>	W	10P <sub>0</sub>
KMH1S	1.1 ±0.1	1.85 ±0.15	0.75 ±0.05	4 ±0.1	4 ±0.1	2 ±0.05	0.23 +0.05/- 0.08	1.75 ±0.1	3.5 ±0.05	1.55 ±0.05	0.4 (Min)	8 ±0.2	40 ±0.2
KMH2S	1.6 ±0.1	2.3 ±0.1	0.9 ±0.05	4 ±0.08	4 ±0.1	2 ±0.05	0.25 ±0.1	1.75 ±0.1	3.5 ±0.05	1.55 ±0.05	1 (Min)	8 ±0.1	40 ±0.2
KMH3S	1.95 +0.1/-0	3.55 +0.1/-0	1.4 ±0.05	4 ±0.1	4 ±0.1	2 ±0.1	0.23 ±0.05	1.75 ±0.1	3.5 ±0.1	1.55 ±0.05	1 (Min)	8 ±0.3	40 ±0.2
KMH4S	2.82 ±0.1	3.63 ±0.1	1.47 ±0.05	4 ±0.1	4 ±0.1	2 ±0.1	0.23 ±0.05	1.75 ±0.1	3.5 ±0.1	1.55 ±0.05	1 (Min)	8 ±0.3	40 ±0.2
KMH5S	3.56 ±0.1	4.94 ±0.1	1.7 ±0.05	4 ±0.1	8 ±0.1	2 ±0.1	0.25 ±0.05	1.75 ±0.1	3.5 ±0.1	1.55 ±0.05	1.5 (Min)	12 ±0.3	40 ±0.2

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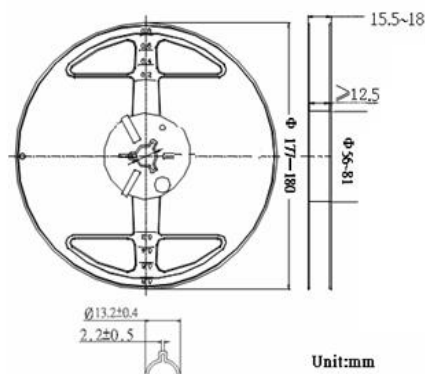
## 125°C SMD Type for Automotive Applications



### ● Quantity



Size	Part no	Quantity (pcs/reel)
0603	KMH1S005, KMH1S010, KMH1S025	5,000
0805	KMH2S005, KMH2S010, KMH2S016, KMH2S020, KMH2S035, KMH2S050,	4,000
1206	KMH3S010, KMH3S010-60, KMH3S016, KMH3S020, KMH3S035, KMH3S035-30, KMH3S050-16, KMH3S050-24, KMH3S075	2,500
1210	KMH4S010, KMH4S016, KMH4S020, KMH4S035, KMH4S050, KMH4S075, KMH4S110, KMH4S125, KMH4S150	3,000



Size	Part no	Quantity (pcs/reel)
1812	KMH5S020, KMH5S035, KMH5S050, KMH5S075, KMH5S110, KMH5S125, KMH5S150, KMH5S175	1,000

### ■ Warehouse Storage Conditions of Products

- Storage Conditions:
  1. Storage Temperature:  $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
  2. Relative humidity:  $\leq 75\%RH$
  3. Thermistors must be kept away from sunlight and stored in a non-corrosive atmosphere.
- Period of Storage: 1 year