Polymer PTC Resettable Fuse：KSH Series

Strap Type

■ Features

1. RoHS compliant
2. Broadest range of resettable devices available in the industry
3. Current ratings from 1.7 to 14.1A
4. Maximum voltage : 15V , 20V
5. Operating temperature range : -40 ~ +85℃
6. Agency Recognition :UL /cUL/TUV

■ Recommended Applications

1. Rechargeable battery packs

■ Part No. Code

K	S	H	0	1	5	0	1	7	0	N	B	Y			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Product code	
K	THINKING PPTC Thermistor

Form factor	
S	Strap

Usage	
M	Metal hydride device
L	Lithium ion device
V	Very low temp. device
H	High power device

Vmax. operation	
015	15V
020	20V

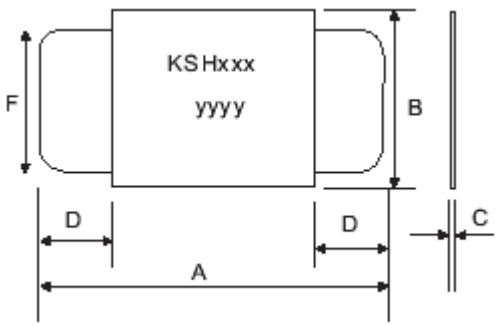
I hold	
0008	0.08A
0090	0.9A
0014	0.14A
0135	1.35A
0170	1.7A
0600	6A
1000	10A
1200	12A

Shape of lead	
S	Slitted lead on single side
D	Slitted lead on duel side
N	Noslitted lead

Packaging	
B	Bulk
R	Taping & Reel

Internal Control Code	
Y	ROHS Control

■ Dimensions



Marking: xxx=Vmax. operation, yyyy=I hold

Polymer PTC Resettable Fuse：KSH Series

Strap Type

(Unit:mm)

Part no.	A		B		C		D		F	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
KSH0150170	19.0	21.0	3.8	4.0	0.5	0.9	5.3	6.5	2.9	3.1
KSH0150190	19.9	22.1	4.9	5.5	0.6	1.0	5.5	7.5	3.9	4.1
KSH0150260	20.9	23.1	4.9	5.5	0.6	1.0	4.1	5.5	3.9	4.1
KSH0150310	26.8	28.2	6.9	7.1	0.6	1.0	2.5	12.0	4.9	5.1
KSH0150380	24.0	26.0	6.9	7.5	0.6	1.0	4.1	5.5	4.9	5.1
KSH0200450	24.0	26.0	9.9	10.5	0.6	1.0	5.3	6.7	5.9	6. 6
KSH0200550	35.0	37.0	6.9	7.5	0.6	1.0	5.3	6.7	4.9	5.1
KSH0200600	24.0	26.0	13.9	14.5	0.6	1.0	4.1	5.5	5.9	6.6
KSH0200730	27.1	29.1	13.9	14.5	0.6	1.0	4.1	5.5	5.9	6.6
KSH0200880	62.8	65.2	7.9	8.5	0.6	1.0	10.0	12.0	5.9	6.1
KSH0200900	45.4	47.6	7.9	8.5	0.9	1.3	4.6	6.2	5.9	6.1
KSH0201300	61.5	66.5	9.4	10.0	0.9	1.3	5.0	7.5	5.9	6.1
KSH0201410	58.0	60.0	13.4	14.0	0.9	1.3	4.2	5.8	5.9	6.1

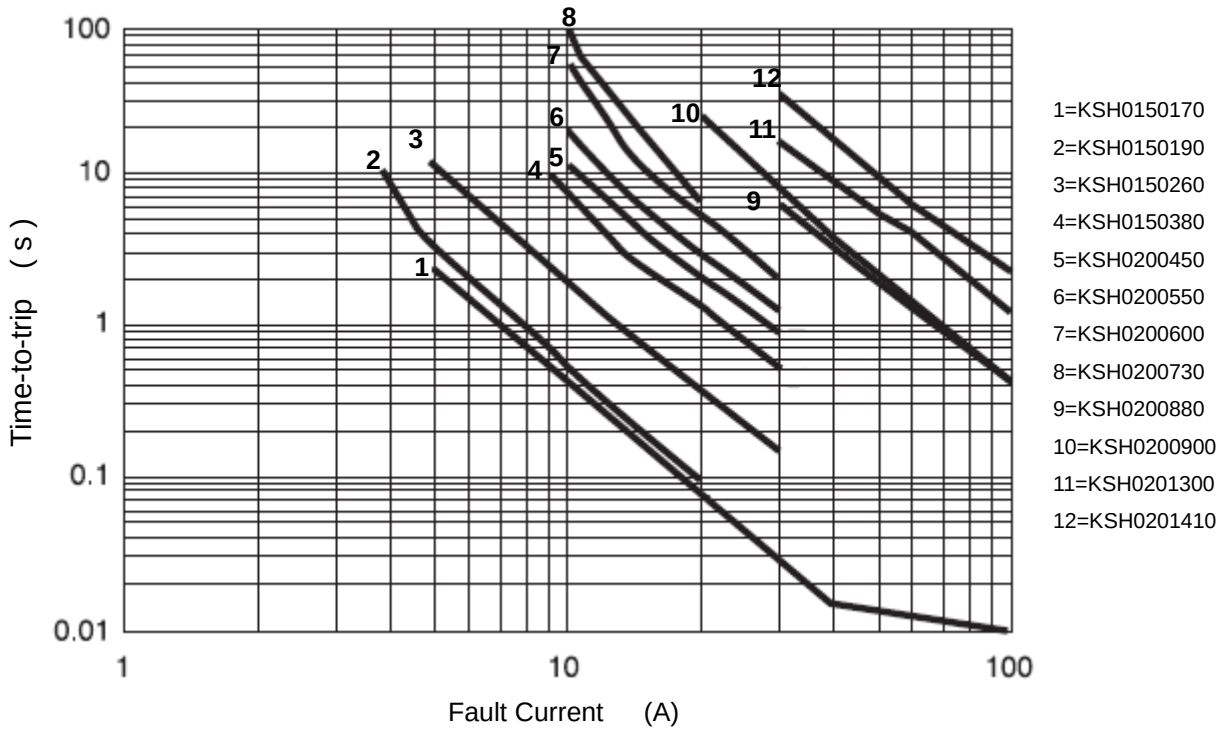
■ Characteristics(23℃)

Part no	Vmax.	Imax.	Ihold @ 23℃	Itrip @ 23℃	Pd (Typ.)	Maximum time to trip		Resistance (Ω)			Safety approvals	
								Initial (Ri)		Post trip (R1)		
	(V_{dc})	(A)	(A)	(A)	(W)	(A)	(Sec.)	Max.	Max.	Max.	UL/cUL	TUV
KSH0150170	15	100	1.70	3.40	0.8	8.5	5.0	0.044	0.078	0.114		
KSH0150190	15	100	1.90	3.90	0.8	9.50	5.0	0.039	0.072	0.102	√	√
KSH0150260	15	100	2.60	5.80	1.0	13.00	5.0	0.020	0.042	0.063	√	√
KSH0150310	15	100	3.10	6.50	1.2	15.5	4.5	0.017	0.031	0.056	√	√
KSH0150380	15	100	3.80	8.30	1.2	19.00	5.0	0.013	0.026	0.037	√	√
KSH0200450	20	100	4.50	8.90	1.4	22.50	5.0	0.011	0.020	0.028	√	√
KSH0200550	20	100	5.50	10.5	2.0	27.50	5.0	0.009	0.016	0.022	√	√
KSH0200600	20	100	6.00	11.7	1.7	30.00	5.0	0.007	0.014	0.019	√	√
KSH0200730	20	100	7.30	14.1	1.9	30.00	5.0	0.006	0.012	0.015	√	√
KSH0200880	20	100	8.80	16.0	2.0	44.0	5.0	0.007	0.0105	0.015		
KSH0200900	20	100	9.00	16.7	3.0	45.0	5.0	0.006	0.010	0.014		
KSH0201300	20	100	13.0	21.2	2.2	50.0	10.0	0.004	0.007	0.009		
KSH0201410	20	100	14.1	26.2	2.2	70.0	5.0	0.003	0.005	0.007		

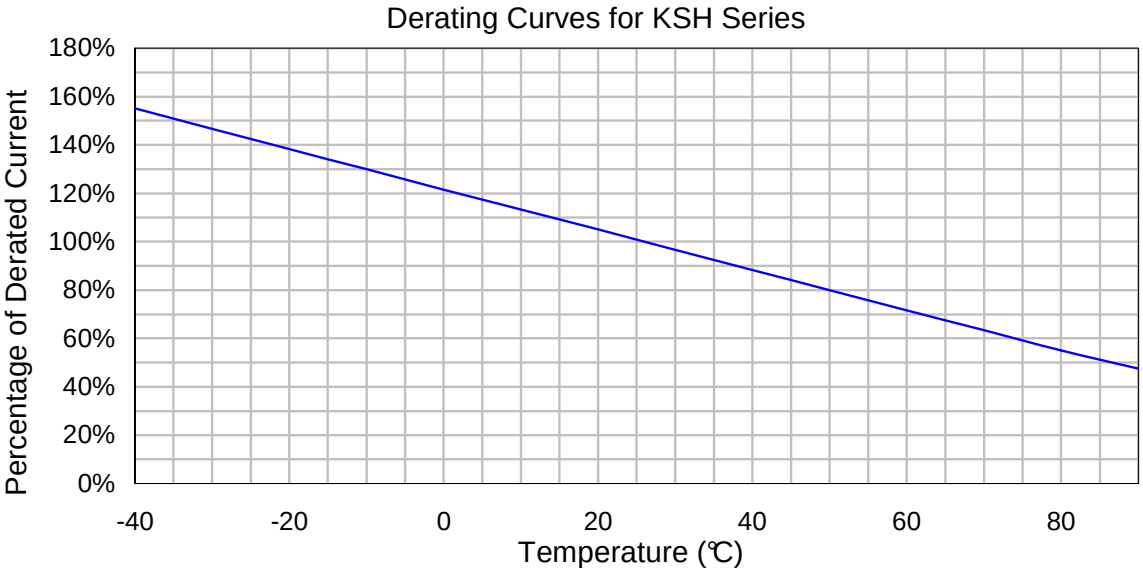
Note : UL&cUL File No. E138827

TUV File No. R50066599

■ **Typical time to trip curve at 23℃**



■ **Thermal derating curve**



■ Reliability test

Item	Test condition/methods	Criteria
Passive aging	70℃, 1000hrs	±10% typical resistance change
Humidity storage	40℃, 95%RH, 1344hrs Mil-Std 202, method 103 condition D	±5% typical resistance change
Cycle life	50 cycles at a 120% maximum current (Imax) and maximum voltage (Vmax). UL 1434	Normal Appearance
Trip endurance	Vmax, Imax, 48Hrs	Normal Appearance
Steady-state operating life	Vmax, Iss, 1000hrs Mil-Std 750, method 1026	Normal Appearance

■ Packaging

- **Bulk packing**

Series	Quantity (PCS/Bag)
KSH (0170~0260)	1000
KSH (0310~1410)	500

- **Ammo packing**

Series	Quantity (PCS/Box)
KSH (0170~0260)	10000
KSH (0310~1410)	5000

- **Carton packing**

Series	Quantity (PCS/Box)
KSH (0170~0260)	60000
KSH (0310~1410)	30000

■ Storage condition of products

(I) Storage Conditions :

1. Storage Temperature : -10℃~+40℃
2. Relative humidity : ≦75%RH
3. Thermistors must be kept away from sunlight and stored in a non-corrosive atmosphere.

(II) Period of Storage : 1 year

Polymer PTC Resettable Fuse：KSL Series

Strap Type

■ Features

1. RoHS compliant
2. Broadest range of resettable devices available in the industry
3. Current ratings from 0.7 to 3.4A
4. Maximum voltage : 15V and 24V
5. Operating temperature range : -40 ~ +85℃
6. Agency Recognition :UL /cUL/TUV

■ Recommended Applications

1. Rechargeable battery packs

■ Part No. Code

K	S	L	0	1	5	0	0	7	0	N	B	Y			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Product code	
K	THINKING PPTC Thermistor

Form factor	
S	Strap

Usage	
M	Metal hydride device
L	Lithium ion device
V	Very low temp. device
H	High power device

Vmax. operation	
015	15V
024	24V

I hold	
0008	0.08A
0090	0.9A
0014	0.14A
0135	1.35A
0170	1.7A
0600	6A
1000	10A
1200	12A

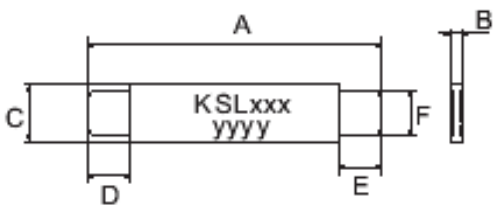
Shape of lead	
S	Slitted lead on single side
D	Slitted lead on duel side
N	Noslitted lead

Packaging	
B	Bulk
R	Taping & Reel

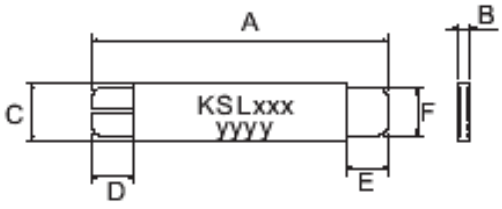
Internal Control Code	
Y	ROHS Control

■ Dimensions

Non slitted lead



Slitted lead on single side



Slit:0.5mmx
4.0mm nom
(.02in x .16 in)

Marking: xxx=Vmax. operation, yyyy=I hold

Polymer PTC Resettable Fuse：KSL Series

Strap Type

(Unit: mm)

Part no.	A		B		C		D		E		F	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
KSL0150070	19.9	22.1	0.7	1.2	4.9	5.2	5.5	7.5	5.5	7.5	3.9	4.1
KSL0150070S	19.9	22.1	0.7	1.2	4.9	5.2	5.5	7.5	5.5	7.5	3.9	4.1
KSL0240100	20.9	23.1	0.6	1.0	4.9	5.2	4.1	5.5	4.1	5.5	3.9	4.1
KSL0240100S	20.9	23.1	0.6	1.0	4.9	5.2	4.1	5.5	4.1	5.5	3.9	4.1
KSL0240180	24.0	26.0	0.6	1.0	4.9	5.2	4.1	5.5	4.1	5.5	3.9	4.1
KSL0240180S	24.0	26.0	0.6	1.0	4.9	5.2	4.1	5.5	4.1	5.5	3.9	4.1
KSL0240190	21.3	23.4	0.5	1.1	10.2	11.0	5.0	7.6	5.0	7.6	4.8	5.4
KSL0240260	24.0	26.0	0.6	1.0	10.8	11.9	5.0	7.0	5.0	7.0	5.9	6.1
KSL0240300	28.4	31.8	0.5	1.1	13.0	13.5	6.3	8.9	6.3	8.9	6.0	6.6
KSL0240310	24.0	26.0	0.6	1.0	14.8	15.9	5.0	7.0	5.0	7.0	5.9	6.1
KSL0240340	24.0	26.0	0.6	1.0	14.8	15.9	4.0	5.0	4.0	5.0	5.9	6.1

■ Characteristics(23℃)

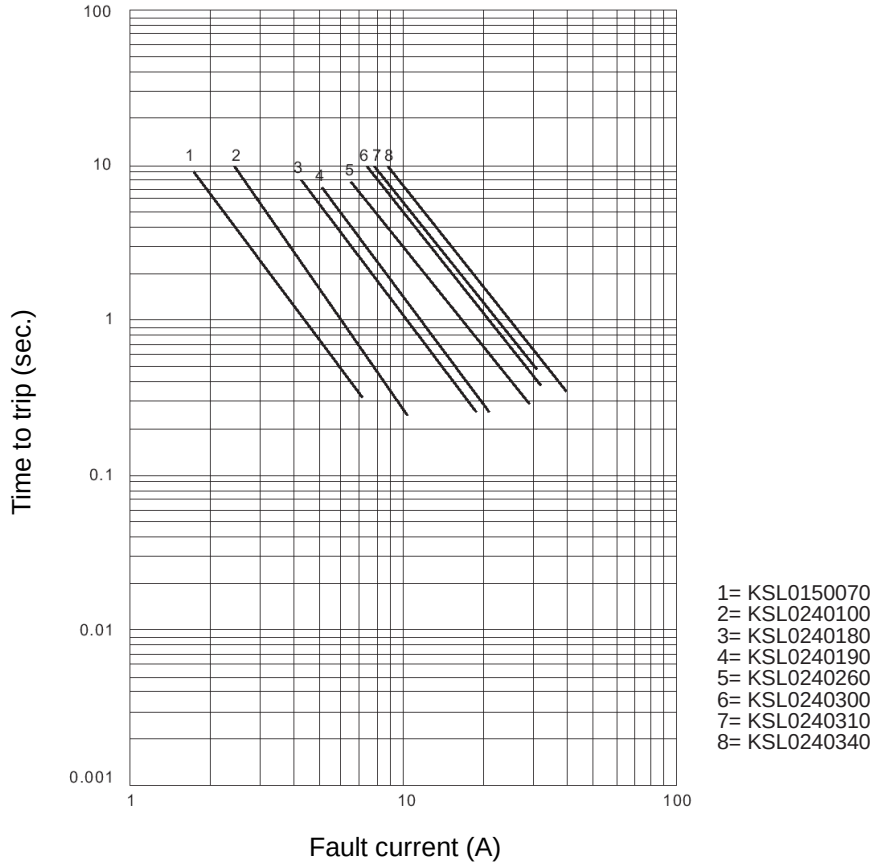
Part no.	Vmax.	Imax.	Ihold @ 23℃	Itrip @ 23℃	Pd (Max.)	Maximum time to trip		Resistance (Ω)			Safety approvals	
								Initial (Ri)		Post trip (R1)	UL/cUL	TUV
	(V_{dc})	(A)	(A)	(A)	(W)	(A)	(Sec.)	Min.	Max.	Max.		
KSL0150070	15	100	0.7	1.5	1.1	3.5	5.0	0.100	0.200	0.340	√	√
KSL0150070S	15	100	0.7	1.5	1.1	3.5	5.0	0.100	0.200	0.340	√	√
KSL0240100	24	100	1.0	2.5	1.5	5.0	7.0	0.070	0.130	0.260	√	√
KSL0240100S	24	100	1.0	2.5	1.5	5.0	7.0	0.070	0.130	0.260	√	√
KSL0240180	24	100	1.8	3.8	2.0	9.0	2.9	0.040	0.068	0.120	√	√
KSL0240180S	24	100	1.8	3.8	2.0	9.0	2.9	0.040	0.068	0.120	√	√
KSL0240190	24	100	1.9	4.2	1.9	10.0	3.0	0.030	0.057	0.100	√	√
KSL0240260	24	100	2.6	5.2	2.3	13.0	5.0	0.025	0.042	0.076	√	√
KSL0240300	24	100	3.0	6.3	2.0	15.0	4.0	0.015	0.031	0.055	√	√
KSL0240310	24	100	3.1	6.0	2.5	15.5	5.0	0.018	0.030	0.055	√	√
KSL0240340	24	100	3.4	6.8	2.7	17.0	5.0	0.016	0.027	0.050	√	√

Note 1: S= Slitted lead on single side

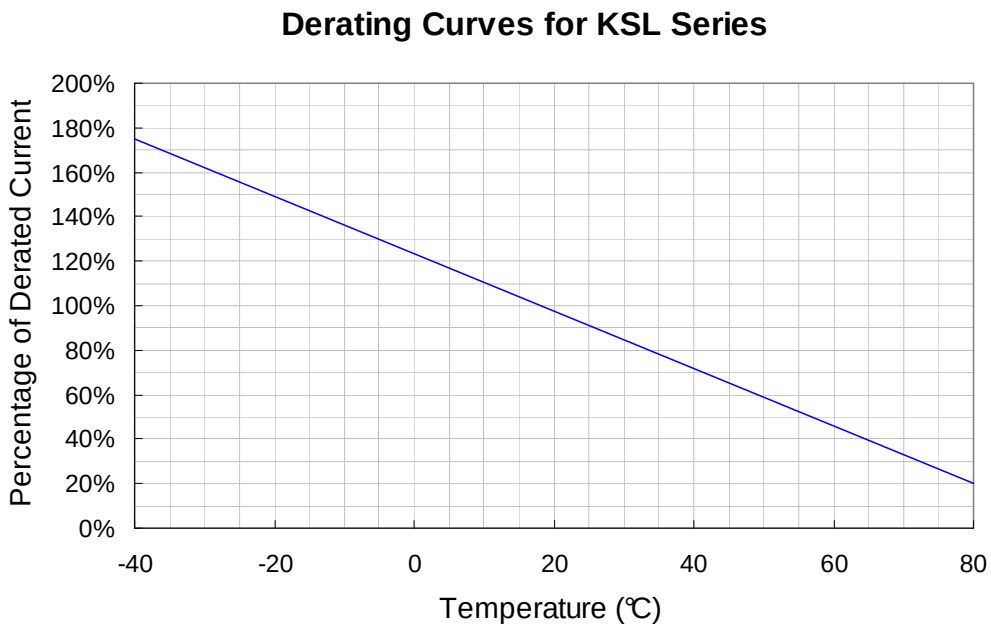
Note2 : UL&cUL File No. E138827

TUV File No. R50066599

■ **Typical time to trip curve at 23℃**



■ **Thermal derating curve**



■ Reliability test

Item	Test condition/methods	Criteria
Passive aging	70℃, 1000hrs	±10% typical resistance change
Humidity storage	40℃, 95%RH, 1344hrs Mil-Std 202, method 103 condition D	±5% typical resistance change
Cycle life	50 cycles at a 120% maximum current (Imax) and maximum voltage (Vmax). UL 1434	Normal Appearance
Trip endurance	Vmax, Imax, 48Hrs	Normal Appearance
Steady-state operating life	Vmax, Iss, 1000hrs Mil-Std 750, method 1026	Normal Appearance

■ Packaging

- **Bulk packing**

Series	Quantity (PCS/Bag)
KSL	1000

- **Ammo packing**

Series	Quantity (PCS/Box)
KSL	10000

- **Carton packing**

Series	Quantity (PCS/Box)
KSL	60000

■ Storage condition of products

(I) Storage Conditions :

1. Storage Temperature: -10℃~+40℃
2. Relative Humidity: ≦75%RH
3. Thermistors must be kept away from sunlight and stored in a non-corrosive atmosphere.

(II) Period of Storage: 1 year

Polymer PTC Resettable Fuse：KSM Series

Strap Type

■ Features

1. RoHS compliant
2. Broadest range of resettable devices available in the industry
3. Current ratings from 1.2 to 4.2A
4. Maximum voltage: 15V, 24V
5. Operating temperature range: -40 ~ +85℃
6. Agency Recognition: UL /cUL/TUV

■ Recommended Applications

1. Rechargeable battery packs

■ Part No. Code

K	S	M	0	1	5	0	1	2	0	N	B	Y			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Product code

K	THINKING PPTC Thermistor

Form factor

S	Strap

Usage

M	Metal hydride device
L	Lithium ion device
V	Very low temp. device
H	High power device

Vmax. operation

015	15V
024	24V

I hold

0008	0.08A
0090	0.9A
0014	0.14A
0135	1.35A
0170	1.7A
0600	6A
1000	10A
1200	12A

Shape of lead

S	Slitted lead on single side
D	Slitted lead on duel side
N	Noslitted lead

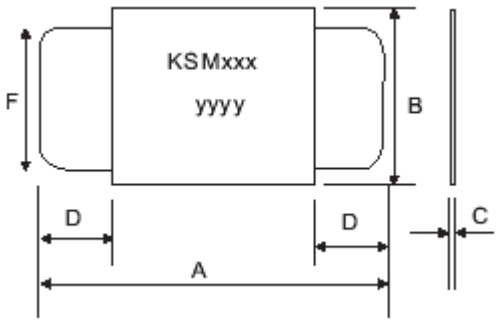
Packaging

B	Bulk
R	Taping & Reel

Internal Control Code

Y	ROHS Control

■ Dimensions



Marking: xxx=Vmax. operation, yyyy=I hold

Polymer PTC Resettable Fuse：KSM Series

Strap Type

(Unit: mm)

Part no.	A		B		C		D		F	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
KSM0150120	19.9	22.1	4.9	5.2	0.6	1.0	5.5	7.5	3.9	4.1
KSM0150175	20.9	23.1	4.9	5.2	0.6	1.0	4.1	5.5	3.9	4.1
KSM0240200	21.3	23.4	10.2	11.0	0.6	1.0	5.0	7.6	4.8	5.4
KSM0240350	28.4	31.8	13.0	13.5	0.6	1.0	6.3	8.9	6.0	6.6
KSM0240420	30.6	32.4	12.9	13.6	0.6	1.0	5.0	7.5	6.0	6.7

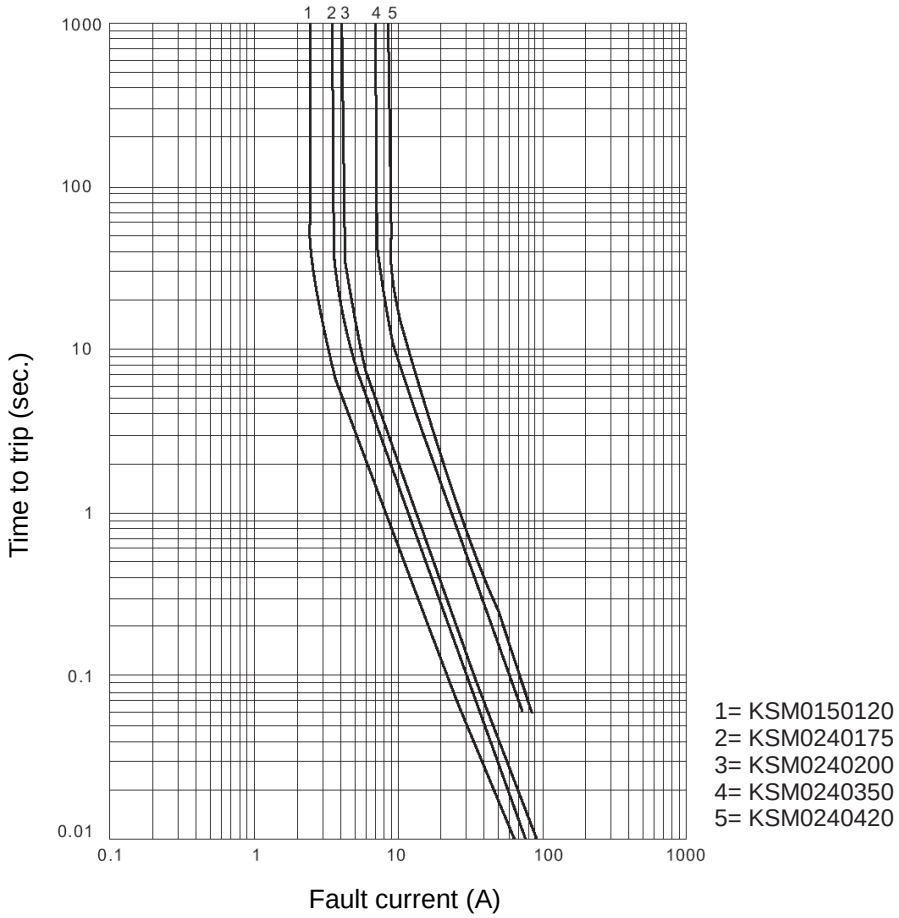
■ Characteristics(23℃)

Part no.	Vmax.	Imax.	Ihold @ 23℃	Itrip @ 23℃	Pd (Max.)	Maximum time to trip		Resistance (Ω)			Safety approvals	
	(V_{dc})	(A)	(A)	(A)	(W)	(A)	(Sec.)	Initial (Ri)		Post trip (R1)	UL/cUL	TUV
								Min.	Max.	Max.		
KSM0150120	15	100	1.20	2.70	1.20	6.00	5.0	0.085	0.160	0.220	√	√
KSM0150175	15	100	1.75	3.80	1.50	9.00	4.0	0.050	0.090	0.120	√	√
KSM0240200	24	100	2.00	4.40	1.90	10.00	4.0	0.030	0.060	0.100	√	√
KSM0240350	24	100	3.50	6.30	2.50	20.00	3.0	0.017	0.031	0.050	√	√
KSM0240420	24	100	4.20	7.60	2.90	20.00	6.0	0.012	0.024	0.040	√	√

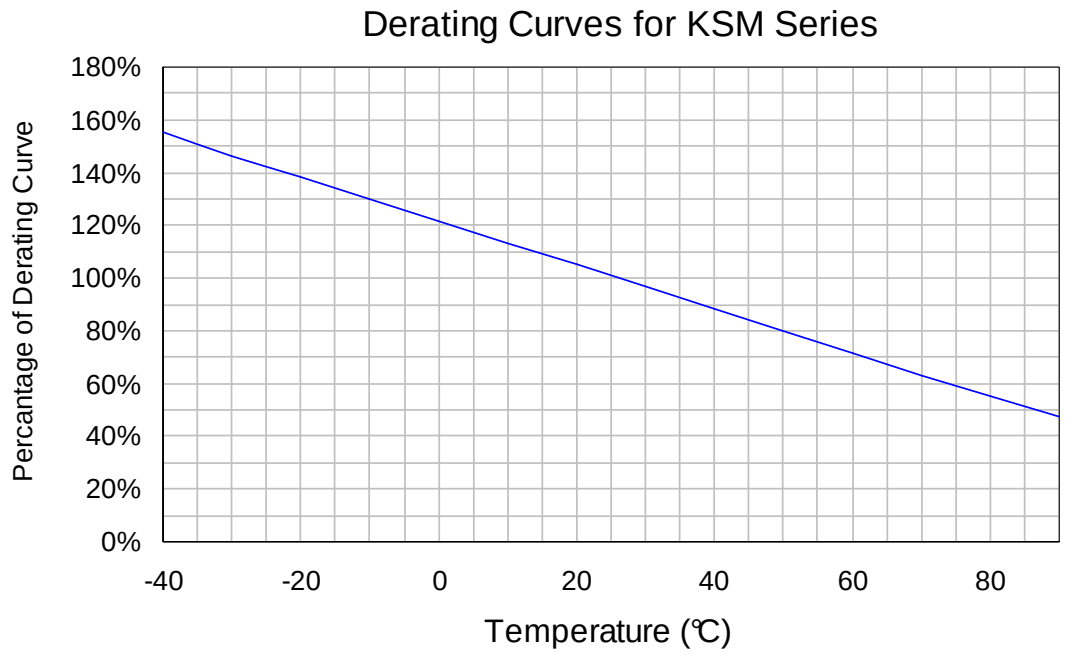
Note : UL&cUL File No. E138827

TUV File No. R50066599

■ Typical time to trip curve at 23℃



■ Thermal derating curve



■ Reliability test

Item	Test condition/methods	Criteria
Passive aging	70℃, 1000hrs	±10% typical resistance change
Humidity storage	40℃, 95%RH, 1344hrs Mil-Std 202, method 103 condition D	±5% typical resistance change
Cycle life	50 cycles at a 120% maximum current (Imax) and maximum voltage (Vmax). UL 1434	Normal Appearance
Trip endurance	Vmax, Imax, 48Hrs	Normal Appearance
Steady-state operating life	Vmax, Iss, 1000hrs Mil-Std 750, method 1026	Normal Appearance

■ Packaging

Bulk packing

Series	Quantity (PCS/Bag)
KSM (0120~0175)	1000
KSM (0200~0420)	500

Ammo packing

Series	Quantity (PCS/Box)
KSM (0120~0175)	10000
KSM (0200~0420)	5000

Carton packing

Series	Quantity (PCS/Box)
KSM (0120~0175)	60000
KSM (0200~0420)	30000

■ Storage condition of products

(I) Storage Conditions :

1.Storage Temperature : -10℃~+40℃

2.Relative humidity : ≦75%RH

3.Thermistors must be kept away from sunlight and stored in a non-corrosive atmosphere.

(II) Period of Storage : 1 year

Polymer PTC Resettable Fuse：KSV Series

Strap Type

■ Features

1. RoHS compliant
2. Low resistance, low trip temperature
3. Current ratings from 1.7 to 2.4A
4. Maximum voltage :12V and 16V
5. Operating temperature range :
   KSV012：-40 ~ +75℃
   KSV016：-40 ~ +85℃
6. Agency Recognition :UL /cUL/TUV

■ Recommended Applications

1. Rechargeable battery packs

■ Part No. Code

K	S	V	0	1	6	0	1	7	0	N	B	Y			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Product code	
K	THINKING PPTC Thermistor

Form factor	
S	Strap

Usage	
M	Metal hydride device
L	Lithium ion device
V	Very low temp. device
H	High power device

Vmax. operation	
012	12V
016	16V

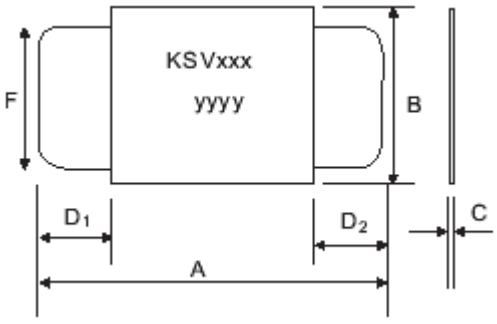
I hold	
0008	0.08A
0090	0.9A
0014	0.14A
0135	1.35A
0170	1.7A
0600	6A
1000	10A
1200	12A

Shape of lead	
S	Slitted lead on single side
D	Slitted lead on duel side
N	Noslitted lead

Packaging	
B	Bulk
R	Taping & Reel

Internal Control Code	
Y	ROHS Control

■ Dimensions



Marking: xxx=Vmax. operation, yyyy=I hold

Polymer PTC Resettable Fuse：KSV Series

Strap Type

(Unit: mm)

Part no.	A		B		C		D		F	
	Min.	Max.	Min.	Max.	Min.	Max.	D1	C2	Min.	Max.
KSV0120170	20.8	23.2	3.5	3.9	0.6	1.0	4.5~6.5		2.4	2.6
KSV0120175	23.0	24.5	2.9	3.3	0.6	1.0	3.8~5.4	4.7~7.2	2.4	2.6
KSV0120230	20.9	23.1	4.9	5.3	0.6	1.0	4.1~5.8		3.9	4.1
KSV0160170	15.4	17.5	7.0	7.4	0.5	0.8	4.0~6.2		3.9	4.1
KSV0160170X	20.8	22.9	4.9	5.3	0.5	0.8	6.0~8.6		3.9	4.1
KSV0160175	25.8	28.0	3.5	3.9	0.6	0.8	5.0~7.0	9.0~11.0	2.4	2.6
KSV0160175X	31.2	33.4	3.5	3.9	0.6	0.8	7.0~10.0	11.0~14.0	2.4	2.6
KSV0160200	20.9	23.1	4.1	4.5	0.6	0.8	3.0~4.8		2.9	3.1
KSV0160210	20.9	23.1	4.9	5.3	0.6	0.8	4.1~5.8		3.9	4.1
KSV0160240	23.8	26.2	4.9	5.3	0.6	0.8	3.5~5.7		3.9	4.1

Note: X=Special spec. for dimension controlling number

■ Characteristics(23℃)

Part no.	Vmax.	Imax.	Ihold @ 23℃	Itrip @ 23℃	Pd (Typ.)	Maximum time to trip		Resistance (Ω)			Safety approvals	
	(V_{dc})	(A)	(A)	(A)	(W)	(A)	(Sec.)	Initial (Ri)		Post trip (R1)	UL/cUL	TUV
								Min.	Max.	Max.		
KSV0120170	12	100	1.70	4.10	1.40	8.50	5.0	0.018	0.032	0.04	√	√
KSV0120175	12	100	1.75	4.20	1.40	8.75	5.0	0.017	0.035	0.062	√	√
KSV0120230	12	100	2.30	5.00	1.40	10.0	5.0	0.012	0.018	0.036	√	√
KSV0160170	16	100	1.70	3.40	1.40	8.50	3.0	0.030	0.052	0.105	√	√
KSV0160170X	16	100	1.70	3.40	1.40	8.50	5.0	0.030	0.052	0.105	√	√
KSV0160175	16	100	1.75	3.60	1.40	8.75	5.0	0.029	0.051	0.102	√	√
KSV0160175X	16	100	1.75	3.60	1.40	8.75	5.0	0.029	0.051	0.102	√	√
KSV0160200	16	100	2.00	4.70	1.50	10.00	5.0	0.022	0.039	0.078	√	√
KSV0160210	16	100	2.10	4.70	1.50	10.00	5.0	0.018	0.030	0.060	√	√
KSV0160240	16	100	2.40	5.90	1.60	12.00	5.0	0.014	0.026	0.052	√	√

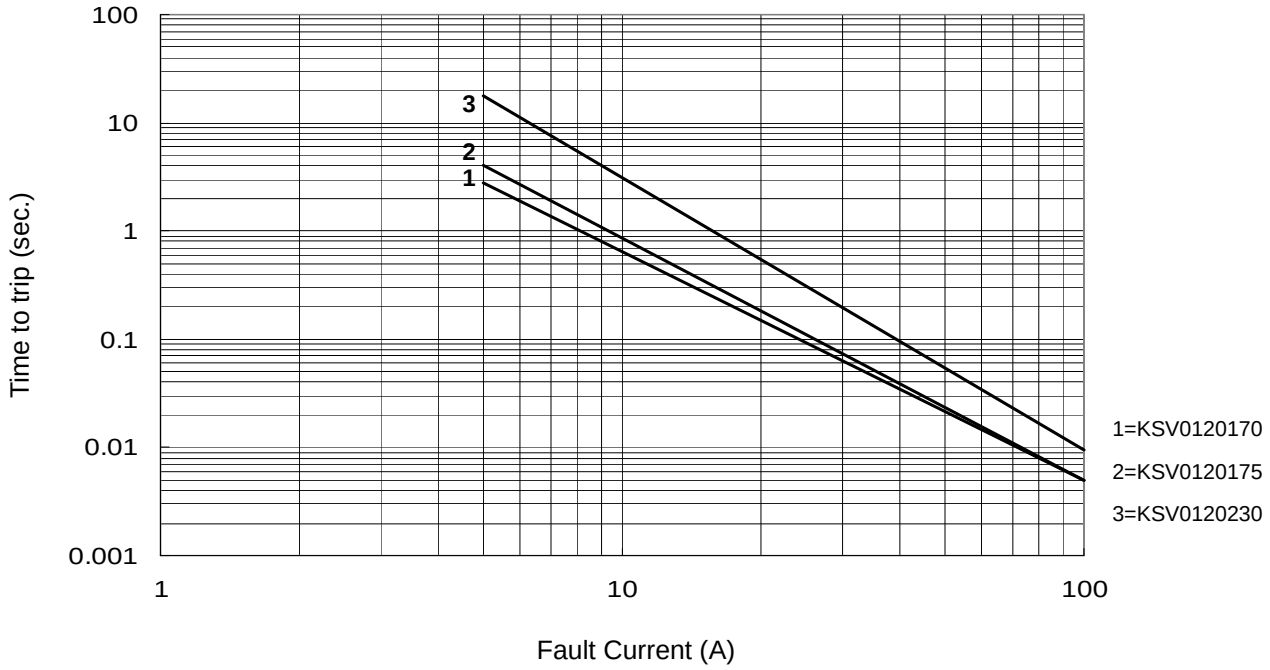
Note 1: X=Special spec. for dimension controlling number

Note 2: UL&cUL File No. E138827

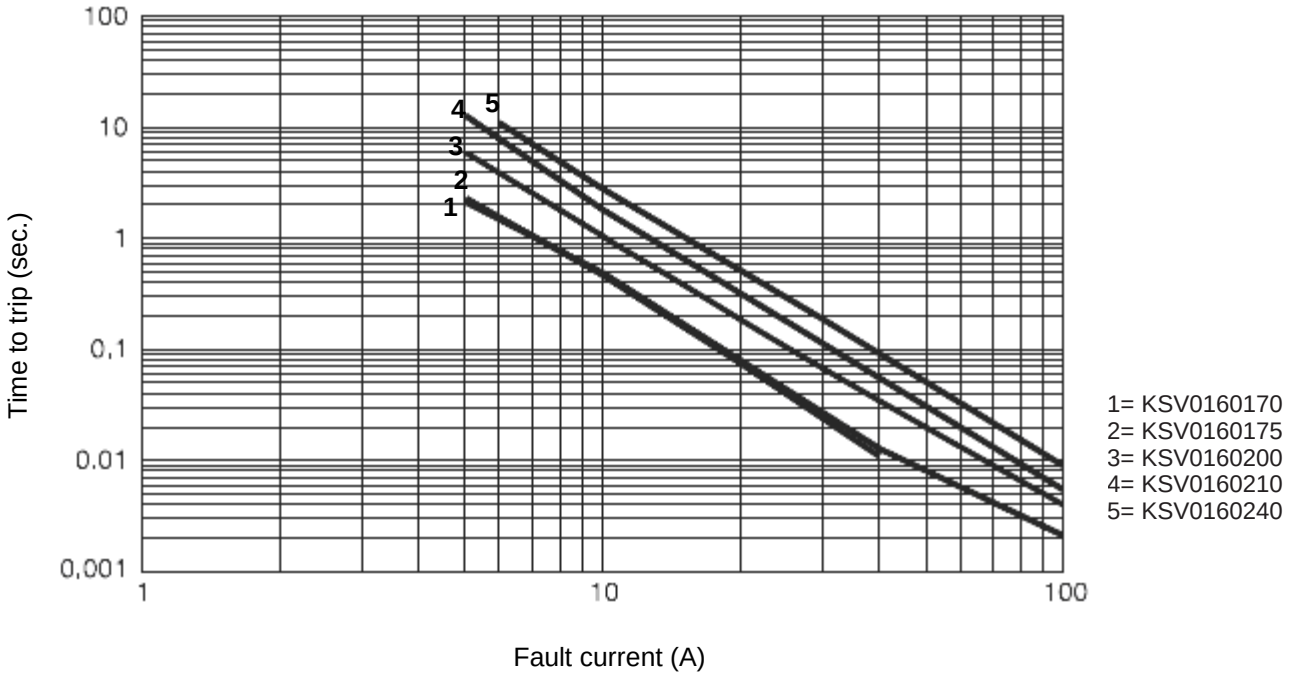
TUV File No. R50066599

■ **Typical time to trip curve at 23℃**

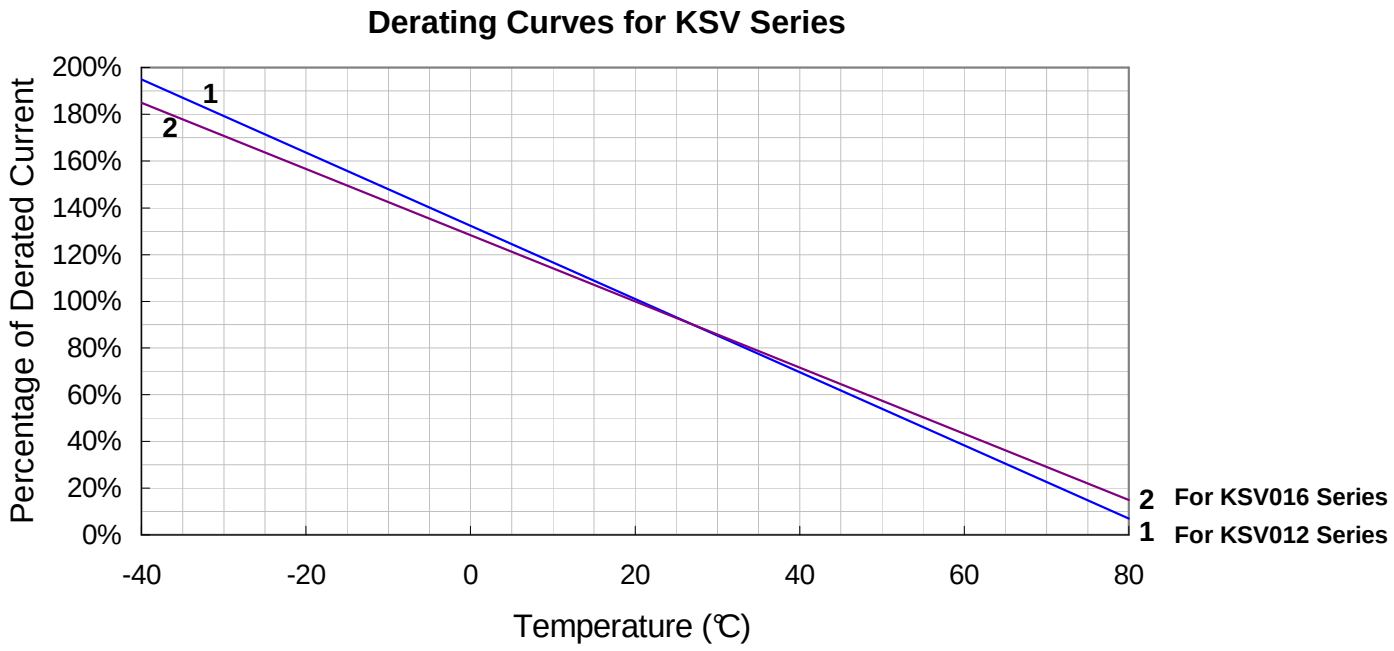
● **KSV012 Series**



● **KSV016 Series**



■ Thermal derating curve



■ Reliability test

Item	Test condition/methods	Criteria
Passive aging	60℃, 1000hrs	±20% typical resistance change for KSV012 ±10% typical resistance change for KSV016
Humidity storage	60℃, 95%RH, 1000hrs for KSV012 40℃, 95%RH, 1344hrs for KSV016	±30% typical resistance change for KSV012 ±5% typical resistance change for KSV016
Thermal shock	85/-40℃, 10 cycles	±10% typical resistance change
Cycle life	50 cycles at a 120% maximum current (Imax) and maximum voltage (Vmax). UL 1434	Normal Appearance
Trip endurance	Vmax, Imax, 48Hrs	Normal Appearance
Steady-state operating life	Vmax, Iss, 1000hrs Mil-Std 750, method 1026	Normal Appearance

■ Packaging

● Bulk packing

Series	Quantity (PCS/Bag)
KSV	1000

● Ammo packing

Series	Quantity (PCS/Box)
KSV	10000

● Carton packing

Series	Quantity (PCS/Box)
KSV	60000

■ Storage condition of products

(I) Storage Conditions :

1. Storage Temperature : -10℃~+40℃
2. Relative humidity : ≦75%RH
3. Thermistors must be kept away from sunlight and stored in a non-corrosive atmosphere.

(II) Period of Storage : 1 year