

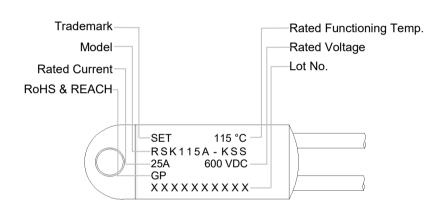
# SET safe | SET fuse



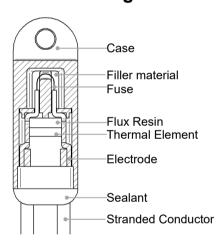
#### **Description**

The Direct Current Thermal-Link Alloy Type (DC-ATCO) is defined as a non-resettable protective device functioning only once. It is widely used for over-temperature protection of electrical equipment and electric vehicles. The DC-ATCO primarily consists of Case, Filler material, Fuse, Flux Resin, a low melting point Thermal Element, Electrode, Sealant and Stranded Conductor. Normally, the Thermal Element is joined to the two lead wires. When the temperature reaches the fusing temperature of the Direct Current Thermal-Link (Alloy Type), the Thermal Element melts and quickly retracts to the two lead wire ends with the aid of the flux resin, disconnecting the circuit completely. The SETsafe | SETfuse Direct Current Thermal-Link (Alloy Type) is classified into Axial and Radial shapes, with a Rated Functioning Temperature ranging from 102 °C to 187 °C, Rated Current 25 A, Rated Voltage 600 VDC. It is also RoHS and REACH compliant.

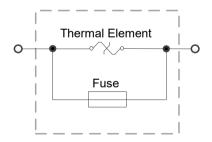
#### Marking



### **Structure Diagram**



#### **Product Schematic**



#### **Features**

- 0 to 600 VDC Operating Voltage
- High Accuracy of Functioning Temp.
- Ceramic Case
- Non-Resettable
- RoHS & REACH Compliant

### **Applications**

- Battery Cooling Heaters
- Air-Conditioners Heaters
- Pre-charged Resistors
- High Power LED

#### Customization

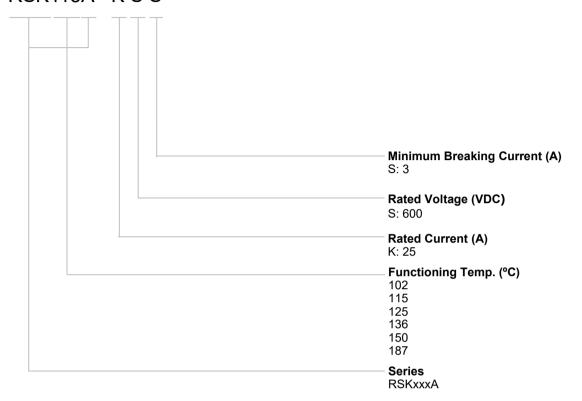
- Rated Functioning Temp.
- Stranded Conductor Size



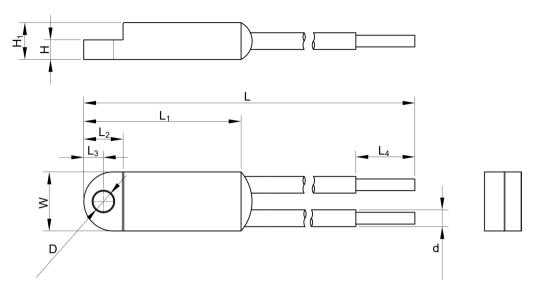
**RSKxxxA Series** 

### **Part Number System**

RSK115A - KSS



# **Dimensions (Unit: mm)**



L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	W	Н	H <sub>1</sub>	D	d
132.0 ± 5.0	32.0 ± 1.0	8.00 ± 0.5	4.0 ± 0.5	10.0 ± 1.0	12.0 ± 1.0	4.0 ± 0.5	7.5 ± 1.0	3.5 ± 0.3	AWG12

# **Specifications**

( <i>T</i> <sup>f</sup> ) °C		Model	I <sub>r</sub>	U <sub>r</sub>	Rated Functioning Temp.	T <sub>h</sub>	T <sub>m</sub>	I <sub>min</sub>	RoHS REACH
			(A)	DC (V)	(°C)	(°C)	(°C)	(A)	
Temp.	187	RSK187A-KSS	25	600	182 *5	140	250	3	•
ng Te	150	RSK150A-KSS	25	600	146 ± 3	100	250	3	•
ioni	136	RSK136A-KSS	25	600	131 ± 3	80	250	3	•
Functioning	125	RSK125A-KSS	25	600	122 ± 3	70	250	3	•
Rated F	115	RSK115A-KSS	25	600	112 ± 3	65	250	3	•
Ra	102	RSK102A-KSS	25	600	99 : 5	55	250	3	•

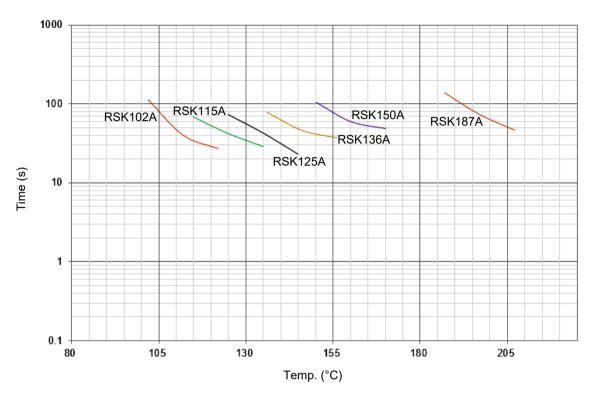
1. RoHS & REACH Comply.



# RSKxxxA Series

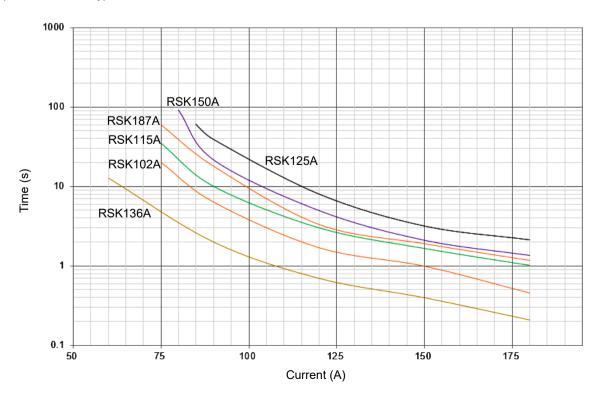
#### **Temp.-Time Curve**

The functioning temperature time curve of Alloy Thermal-Link in different Temp. oil bath (For reference only).



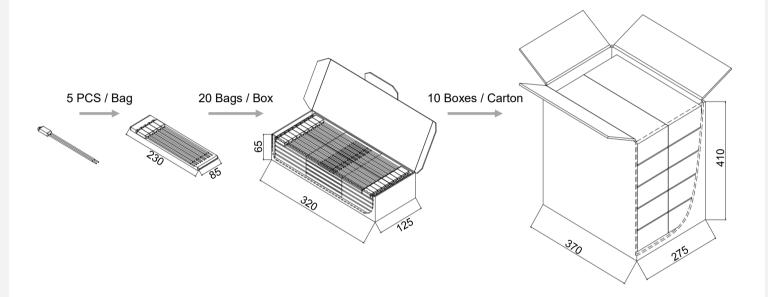
#### **Current-Time Curve**

This is an illustrated curve, describing the opening time at Multi-times rated current in the condition of the room Temp. 25 °C (For reference only).



# **Packaging Information**

Item	PE Bag	Вох	Carton
Dimensions (mm)	230 x 85	320 x 125 x 65	370 x 275 x 410
Quantity (PCS)	5	100	1000
Gross Weight (kg)			16 ± 10%





# SET safe | SET fuse

**RSKxxxA Series** 

# Glossary

Olossa	
Item	Description
DC-ATCO	DC-Alloy Thermal-Link DC-Alloy type Thermal-Link, Alloy is thermal element.
$T_{\mathrm{f}}$	Rated Functioning Temp. The temperature of the Thermal-Link which causes it to change the state of conductivity with a detection current up to 10 mA as the only load. Tolerance: $T_f$ (0 / -10) °C (GB 9816, EN 60691, K60691). Tolerance: $T_f \pm 7$ °C (J60691).
Fusing Temp.	Fusing Temp.  The temperature of the Alloy Thermal-Link which causes it to change its state of conductivity is measured with silicone oil bath in which the temperature is increased at the rate of 0.5 °C to 1 °C / minute, with a detection current up to 10 mA as the only load.
T <sub>h</sub>	Holding Temp.  The Maximum temperature at which a Thermal-Link will not change its state of conductivity when conducting rated current for 168 hours.
T <sub>m</sub>	Maximum Temp. Limit  The temperature of the Thermal-Link stated by the manufacturer, up to which the mechanical and electrical properties of the Thermal-Link having changed its state of conductivity, will not be impaired for a given time.
<b>I</b> <sub>min</sub>	Minimum Breaking Current  The minimum current that Fuse requires after the Alloy of Thermal-Link opens in the circuit.
I <sub>r</sub>	Rated Current The current used to classify a Thermal-Link, which is the maximum current that Thermal-Link allows to carry and is able to cut off the circuit safely.
U <sub>r</sub>	Rated Voltage  The voltage used to classify a Thermal-Link, which is the maximum voltage that Thermal-link allows to carry and is able to cut off the circuit safely.



# **ATTENTION**

#### **Usage**

- 1. When atmosphere pressure is from 80 kPa to 106 kPa, the related altitude shall be from -500 m to 2000 m.
- 2. Operating voltage less than rated voltage of DC-ATCO, operating current less than rated current of DC-ATCO.
- 3. Do not touch the DC-ATCO body or lead wires directly when power is on, to avoid burn or electric shock.

### Replacement

DC-ATCO is a non-repairable product. For safety sake, it shall be replaced by an equivalent DC-ATCO from the same manufacturer, and mounted in the same way.

### **Storage**

Do not store the DC-ATCO at the high temp., high humidity or corrosive gas environment. The product shall be stored at  $25 \pm 5$  °C and  $\leq 70$ % RH, avoid direct sunlight and shall use them up within 1 year after receiving the goods.

#### Installation

Make Sure the Temp. of Installation Position

- 1. It is recommended that a dummy DC-ATCO with inbuilt thermo-couple shall be used to determine the proper temp.
- 2. he terminal product should be tested to ensure that potential abnormal conditions do not cause ambient temp. to exceed the  $T_{\rm m}$  of the DC-ATCO.
- 3. Mount the DC-ATCO at the location where temp. rises evenly.

Installation position of mechanical performance requirements

- 1. Ensure that the lead wire is long enough, and avoid actions such as press, tensile or twist.
- 2. The seal or body of DC-ATCO must not be damaged, burned or over heated.

**RSKxxxA Series** 

#### **Mechanical Connection**

#### Riveting

- 1. Choose small resistivity riveting material and be riveted.
- 2. A flexible lead or lead with low resistance should be used to rivet the DC-ATCO.
- 3. Contact resistance should be minimal, Large contact resistance will lead to higher temp., DC-ATCO Functioning in advance.

#### **Soldering**

#### Hand-Soldering

- 1. Soldering should be carried out according to Table T-1.
- 2. The thermal element of DC-ATCO is thermal element with low melting point, which is jointed with DC-ATCO lead wires. Improper soldering operation (too high soldering temp., too long soldering time, too short lead wire etc.) may transfer more heat to the thermal element and DC-ATCO may open in advance.
- 3. When soldering conditions are more severe than those listed in Table T-1, a heat sink fixture should be used between soldering point and DC-ATCO body.
- 4. When soldering, please do not pull / push or twist DC-ATCO body or lead wires.
- 5. After soldering, let it naturally cool for longer than 20 seconds. During cooling, never move the DC-ATCO body or lead wires.

TABLE T-1 Hand-Soldering Time

Rated		Max. Allowable		Time for Different Le (Fig.H-1)	ad Wire Ler	ngth	
Functioning Temp.		Time		Time		Time	Max. Soldering
$(T_{\rm f})$	Length	Tinned Copper Wire	Length	Tinned Copper Wire	Length	Tinned Copper Wire	Temp.
(°C)	(mm)	(s)	(mm)	(s)	(mm)	(s)	(°C)
76 ~ 101	10	1 <sup>a</sup>	20	2	30	3	
102 ~ 115	10	1ª	20	2	30	3	
116 ~ 135	10	1 <sup>a</sup>	20	3	30	5	400
136 ~ 150	10	3	20	5	30	5	
151 ~ 230	10	4	20	6	30	7	

a: Auxiliary heat sink fixture is required to avoid DC-ATCO cutting off unexpectedly.

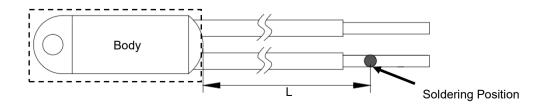


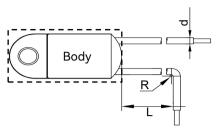
FIGURE T-1

# RSKxxxA Series

#### **Lead Wire Forming**

- 1. If lead wire has to be bent, please pay attention to the distance between body and bending point. Refer to Table T-3.
- When bending leads, please use pincher or similar tools to fix the product as shown in Figure T-2 to avoid damaging the product.
- 3. During forming and mounting, lead wire should not be cut, nicked, bent sharply, to avoid breaking the product.
- Tangential forces on the leads must be avoided (i.e. pushing or pulling on the leads at angle to DC-ATCO body) as such forces may damage the seal of DC-ATCO.

Bending radius R: ≥ 15 d, as shown in Figure T-2.



**FIGURE T-2** 

#### TABLE T-3 Distance between Body and Bending Point

	d	(mm)	< 1.0	1.0 to 1.2	> 1.2
Lead Wire	L	(mm)	≥ 3	≥ 5	≥ 10

10

DC-ATCO

Direct Current Thermal-Link (Alloy Type)

				, ,						,	<b>^</b>
	230	0	0	0	0	0	0	0	0	0	
	221	0									
	205	0									
	200	0									
O	187	TGH187-HVS^	ASL187A-LSF^	RSK187A-KSS <sup>^</sup>	RVH187-HSF^	ARL187-LRA^			RQF187-FQS^		
°	160	0									
F	150	TGH150-HVS^	ASL150A-LSF^	RSK150A-KSS <sup>^</sup>	RVH150-HSF <sup>^</sup>	ARL150-LRA^	RPK150-HRZ <sup>^</sup>	TG150C-HQZ <sup>^</sup>	RQF150-FQS^	TG150C-JPZ^	
	145	0									
n G	139	0								0	
e,	136	TGH136-HVS^	ASL136A-LSF^	RSK136A-KSS <sup>^</sup>	RVH136-HSF <sup>^</sup>	ARL136-LRA^	RPK136-HRZ <sup>^</sup>	TG136C-HQZ <sup>^</sup>	RQF136-FQS^	TG136C-JPZ^	
Rated Functioning Temp. (7, ) °C	135	0	0							0	3
Ξ΄	133	0	0							0	Model
on	130	TGH130-HVS^			RVH130-HSF <sup>^</sup>				RQF130-FQS^	0	0
蓑	125	TGH125-HVS^	ASL125A-LSF^	RSK125A-KSS <sup>^</sup>	RVH125-HSF <sup>^</sup>	ARL125-LRA^	RPK125-HRZ^	TG125C-HQZ <sup>^</sup>	RQF125-FQS^	TG125C-JPZ^	
Ĕ	123	0	0							0	
屲	120	0	0							0	
þ	115	TGH115-HVS^	ASL115A-LSF^	RSK115A-KSS <sup>^</sup>	RVH115-HSF <sup>^</sup>	ARL115-LRA^	RPK115-HRZ <sup>^</sup>	TG115C-HQZ <sup>^</sup>	RQF115-FQS^	TG115C-JPZ^	
ate	105	0	0							0	
œ	102	TGH102-HVS^	ASL102A-LSF^	RSK102A-KSS <sup>^</sup>	RVH102-HSF <sup>^</sup>	ARL102-LRA^	RPK102-HRZ <sup>^</sup>	TG102C-HQZ <sup>^</sup>	RQF102-FQS^	TG102C-JPZ^	
	97	0	0							0	
	93	0	0							0	
	86	0	0			ARL86-LRA^		TG86C-HQZ^	RQF86-FQS^	0	
	76	) 0	0	0	0	0	0	0	0	0	
r (A Rated C	A) Surrent	15	30	25	15	30	15	15	10	20	
<b>U</b> <sub>r</sub> (VI Rated V		850		600		5	00	4	50	400	
U <sub>r</sub> (V. Rated V		0		0			0		o T	0	
Proc Struc								0	0		
			Shape	Radial	U U U U	Axial Shape	Radial Shape	Axial Shape	Radial Shape	O Axial Shape	

	4												,	1
	230	0	0	0	0	0	0	0	0	0	0	0	0	Г
	221	0												1
	205	0												1
	200	0												
S	187	0												
_	160	0												1
_	150	TG150C-JSZ*				HN150^*	HP150^*	HS150^*		QD150^	PD150^	TD150^	SD150^	1
	145	0												1
ב	139	0												
ō	136	TG136C-JSZ*				HN136^*	HP136^*	HS136^*		QD136^	PD136^	TD136^	SD136^	1
<b>5</b>	135	0												1
=	133	0												
0	130	0								QD130^	PD130^	TD130^	SD130^	
S	125	TG125C-JSZ*				HN125^*	HP125^*	HS125^*	ALP125-PLZ^	QD125^	PD125^	TD125^	SD125^	ı
בַ	123	0												
I	120	0												1
D O	115	TG115C-JSZ*			ALP115-HLZ^					QD115^	PD115^	TD115^	SD115^	
115 105 102 97 93 86 76	105	0												
	102	TG102C-JSZ*							ALP102-PLZ^	QD102^	PD102^	TD102^	SD102^	
	97	0												
	93	0												
	86	0	TG86C-HSZ*	RPF86-FPF^										
	76	) 0	0	0	0	0	0	0	0	0	0	0	0	
r (A ated Cu	76  I <sub>r</sub> (A)  Ited Current  J <sub>r</sub> (VDC)^  Ited Voltage	20	15	10	15	15	10	5	60	20	15 16	10	25	
J. (VD	(C)^	С		400		200			180		12	25		
U <sub>r</sub> (VA	(C)* oltage	60	00	0	0	690	50	00	0					
Ur(VAC)* lated Voltage  Product structure							500			2	) ~ ~			
		_	_		_				_		_	_		

Product Structure			~				Radial Shap	0 0		•			Axial Shape		
U <sub>r</sub> (VA	AC)*	400	300	250	400	300	250	0	125	0	125			0	
U <sub>r</sub> (VE	OC)^			12	20			100	0	100	0	10	00	60	
r (A	A)	ĺ	25			20		20	00	10	0	10	15 16	50	Г
	76	) 0													
	93 86	0													
	97	0													ı
IF.	102	Q102^*			P102^*	P102*	P102*	TB102-UHZ^	TB102-UJZ*	TS102-RHZ <sup>^</sup>	TS102-RJZ*	S102 <sup>^</sup>	T102^		l
Rated Functioning Temp. ( $T_{ ho}$ ) $^{\circ}$ C	105	0													
eq	115	Q115^*	Q115*	Q115*	P115^*	P115*	P115*	TB115-UHZ^	TB115-UJZ*	TS115-RHZ <sup>^</sup>	TS115-RJZ*	S115^	T115^		
Ī	120	0													ı
<u>u</u>	123	0			0			0	0	0	0				١
엹	125	Q125^*			P125^*			TB130-0112	TB130-032*	TS125-RHZ <sup>^</sup>	TS125-RJZ*				ı
Ξ.	133 130							TB130-UHZ^	TB130-UJZ*						ı
DG	135	0													ı
<u>e</u>	136	Q136^*	Q136*	Q136*	P136^*	P136*	P136*	TB136-UHZ <sup>^</sup>	TB136-UJZ*	TS136-RHZ <sup>^</sup>	TS136-RJZ*	S136 <sup>^</sup>	T136^		ı
E	139	0													L
<u>.</u>	145	0													ı
-	150	0										S150 <sup>^</sup>	T150^		
<u> </u>	160	0													L
O	187	0													l
	200	0													ı
	205	0													١
	221	0													L

roduct ructure									<b>—</b> (		<b></b>													
(VA	(C)*	250	0	250			0			250		· · · ·		2	50	0	2	50	125		0		250	
ed Cu (VD ed Vo	C)^			<u> </u>		1							60	L						L	1			
<b>/</b> r (A	١)	1	5	1		9	8.5	8	6		5		4		3	2.5	2	,		4		3	2	1
	86 76	R18^*		U18^*					C18^							V18^					F18^	X18^* X0*	K18^*	F18*
r (A)	93	0		0					0							0					0	0	0	0
	97	0																						
	102	R1^*		U1^*																	F1^	X1^*	K1^*	F1*
	105	0																						
	115	R2^*		U2^*				C2^				V2^		SF2^							F2^	X2^*	K2^*	F2*
	120	0																						
	123	0																						
	125	R3^*		U3^*								0		0			H3^*				0	X3^*	K3^*	F3*
	130	R4^*		U4^*								V4^		SF4^							F4^	X4*	K4*	F4*
)	133	0		0								V8^		SF8^							F8^	X8*	K8*	F8*
	135	R5^*		U5^*									79"							0		X5*	K5*	
	139 136	0	CR13^			M13^	C13^				SF13^	V13^	О Х9^							О К9^	F13^	X9*	K9*	F13'
	145	R6^*	0	U6^*	C6^	0	0				0	0	X6^							K6^	F6^	X6*	K6*	F6*
	150	R7^*		U7^*	0								0							0	0	X7*	K7*	F7*
	160	R16^*		U16^*						C16^*							H16^*	V16^*				X16^*	K16^*	F16
	187	0																				X17^*	K17^*	
	200	0																						
	205	R32^*		U32^*						C32^*					B32^*		H32^*	V32^*	V32*			X32*	K32*	
	221	R31^*		U31^*						C31^*					B31^*		H31^*	V31^*	V31*			X31*	K31*	
	230	0																						

Product Structure					C	→—()		D	<b>-</b>								
U <sub>r</sub> (VA		2	50	0	250	125	250	125	250	125	250	125			0		
U <sub>r</sub> (VD	C)^	6	0					50					49	4	18	24	1
r (A	() Irrent	3	2	7	,	5	3			2		1	50	55	50	80	T
	76	XG0*	KG0*		C0*	0	B0^*	B0*	H0^*	H0*	V0^*	V0*	0			0	1
<b>/</b> r (A)	86	XG18^*	C KG18^*		C18^*	C18*	B18^*	B18*	H18^*	H18*	V18^*	V18*				0	1
	97 93	0				C21^*		B21^*		H21^*		V21^*	0			0	1
_	102	XG1^*	KG1^*		C1^*	C1*	B1^*	B1*	H1^*	H1*	V1^*	V1*	0			0	ł
	105	0	0		0	0	0	0	0	0	0	0	0			0	4
ea	115	XG2^*	KG2^*	C2^	C2*		B2^*		H2^*		V2^*		0			0	
I	120	0											0			0	1
ב <u>ַ</u>	123	0											0			0	
Ĕ	125	XG3^*	KG3^*	C3^	C3*		B3^*				V3^*		0			0	۱
	130	XG4*	KG4*	C4^	C4*		B4^*		H4^*		V4^*		0			0	1
<u> </u>	133	XG8*	KG8*	C8^	C8*		B8^*		H8^*		V8^*		0			0	ı
_	135	XG5*	KG5*	C5^	C5*		B5^*		H5^*		V5^*		0			0	۱
Ę	139 136	XG9*	KG9*	C13^ C9^	C13*		B13^* B9^*		H13^*		V13^* V9^*		0			0	ı
o.	145	XG6*	KG6*	C6^	C6*		B6^*		H6^*		V6^*		0			0	1
ح	150	XG7*	KG7*	C7^	C7*		B7^*		H7^*		V7^*		0			0	ı
	160	XG16*	KG16*				B16*						0			0	۱
3	187	0											0			0	ı
	200	0											0			0	١
	205	XG32*	KG32*			C33*		B32*		H32*			0			0	1
	221	XG31*	KG31*			C31*		B31*		H31*			0	0	ADN205B-NDZ^	0	ı
	230	0											ADN230B-NDZ^	ADN230B-PDZ^		ADN230B-QBZ^	П