

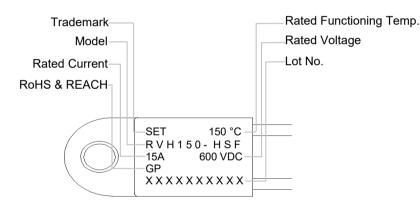
# SET safe | SET fuse



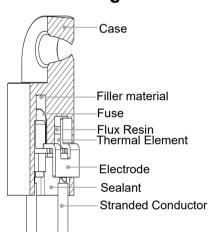
#### **Description**

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 15 A, Rated Voltage 600 VDC. It is also RoHS and REACH compliant.

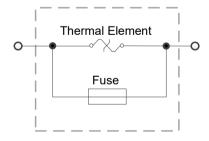
#### Marking



### **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

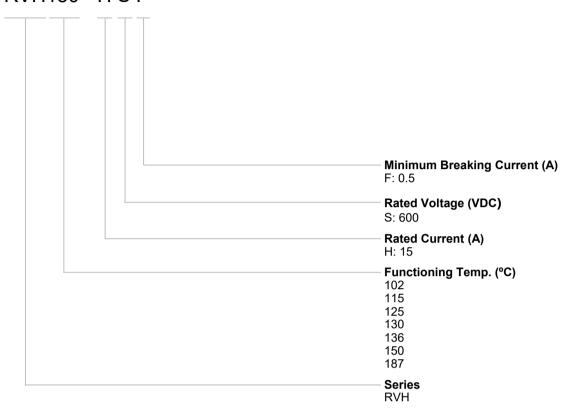
- Rated Functioning Temp.
- Stranded Conductor Size



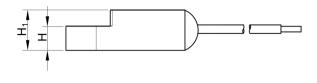
**RVH Series** 

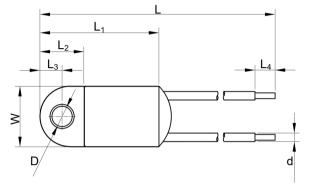
# **Part Number System**

**RVH150 - H S F** 



# **Dimensions (Unit: mm)**





| L           | L <sub>1</sub> L <sub>2</sub> |            | L <sub>3</sub> | L <sub>4</sub> | W          | Н         | H₁         | D         | d     |
|-------------|-------------------------------|------------|----------------|----------------|------------|-----------|------------|-----------|-------|
| 129.5 ± 5.0 | 29.5 ± 1.0                    | 11.0 ± 0.5 | 5.5 ± 0.5      | 10.0 ± 1.0     | 15.0 ± 1.0 | 6.0 ± 0.5 | 10.0 ± 1.0 | 5.0 ± 0.5 | AWG17 |

# **Specifications**

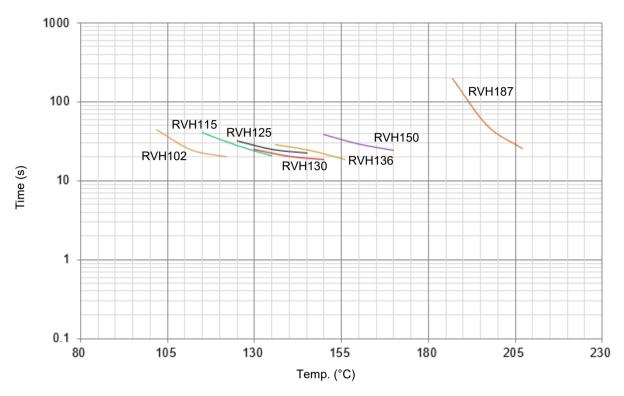
| ( <i>T</i> <sup>f</sup> ) °C |     | Model      | l <sub>r</sub> | U <sub>r</sub> | Rated Functioning Temp. | T <sub>h</sub> | T <sub>m</sub> | <b>I</b> <sub>min</sub> | RoHS<br>REACH |
|------------------------------|-----|------------|----------------|----------------|-------------------------|----------------|----------------|-------------------------|---------------|
| ( <b>7</b> <sub>f</sub> )    |     |            | (A)            | DC (V)         | (°C)                    | (°C)           | (°C)           | (A)                     |               |
| Temp.                        | 187 | RVH187-HSF | 15             | 600            | 182 *5                  | 160            | 250            | 0.5                     | •             |
|                              | 150 | RVH150-HSF | 15             | 600            | 146 ± 3                 | 100            | 250            | 0.5                     | •             |
| nin                          | 136 | RVH136-HSF | 15             | 600            | 131 ± 3                 | 75             | 250            | 0.5                     | •             |
| Functioning                  | 130 | RVH130-HSF | 15             | 600            | 126 ± 3                 | 60             | 250            | 0.5                     | •             |
|                              | 125 | RVH125-HSF | 15             | 600            | 122 ± 3                 | 65             | 250            | 0.5                     | •             |
| Rated                        | 115 | RVH115-HSF | 15             | 600            | 112 ± 3                 | 72             | 250            | 0.5                     | •             |
|                              | 102 | RVH102-HSF | 15             | 600            | 99 -3                   | 65             | 250            | 0.5                     | •             |

Note:

1. RoHS & REACH Comply.

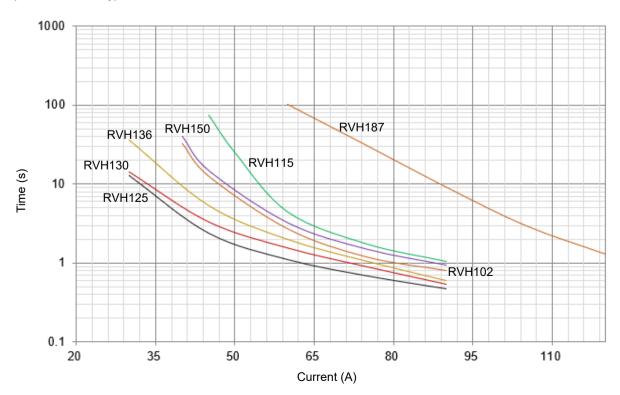
# **Temp.-Time Curve**

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).



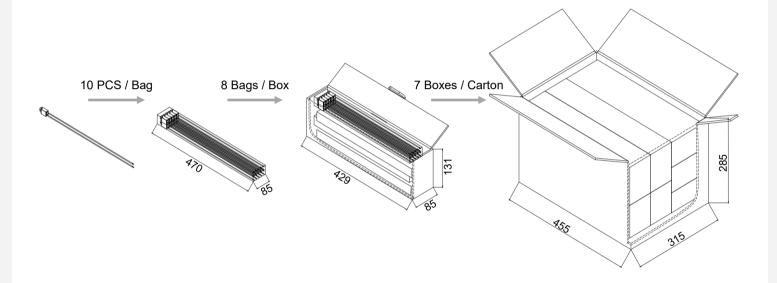


# SET safe | SET fuse

**RVH Series** 

# **Packaging Information**

| Item              | PE Bag   | Вох            | Carton          |
|-------------------|----------|----------------|-----------------|
| Dimensions (mm)   | 470 x 85 | 429 x 85 x 131 | 455 x 315 x 285 |
| Quantity (PCS)    | 10       | 80             | 560             |
| Gross Weight (kg) |          |                | 9 ± 10%         |



RVH Series

# **DC-ATCO** Direct Current Thermal-Link (Alloy Type)

# Glossary

| Item                    | Description   |
|-------------------------|---|
| DC-ATCO                 | DC-Alloy Thermal-Link DC-Alloy type Thermal-Link, Alloy is thermal element.   |
| $T_{ m f}$              | 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<br>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 ± 5 °C and ≤ 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.

#### **RVH 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 Soldering Time for Different Lead Wire Length (Fig.H-1) |        |                       |        |                       |                   |  |  |  |  |  |  |  |  |
|-------------------|--------|--|--------|-----------------------|--------|-----------------------|-------------------|--|--|--|--|--|--|--|--|
| Functioning Temp. |        | Time   |        | Time                  |        | Time                  | Max.<br>Soldering |  |  |  |  |  |  |  |  |
| $(T_{\rm f})$     | Length | Tinned Copper<br>Wire  | Length | Tinned Copper<br>Wire | Length | Tinned Copper<br>Wire | Temp.             |  |  |  |  |  |  |  |  |
| (°C)              | (mm)   | (s)  | (mm)   | (s)                   | (mm)   | (s)                   | (°C)              |  |  |  |  |  |  |  |  |
| 76 ~ 101          | 10     | 1 <sup>a</sup>   | 20     | 2                     | 30     | 3                     |                   |  |  |  |  |  |  |  |  |
| 102 ~ 115         | 10     | 1 <sup>a</sup>   | 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.

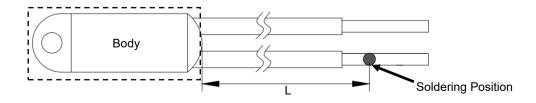


FIGURE T-1



**RVH Series** 

## **DC-ATCO Direct Current Thermal-Link (Alloy Type)**

#### **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.
- 2. 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.
- 4. 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.

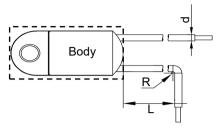


FIGURE T-2

#### 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)

|   | 4               |                         |                          |                          |                         |                         |                         |                         |                         |                         | <b>^</b> |
|---|-----------------|-------------------------|--------------------------|--------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|----------|
|   | 230             | 0                       | 0                        | 0                        | 0                       | 0                       | 0                       | 0                       | 0                       | 0                       | $\vdash$ |
|   | 221             | 0                       |                          |                          |                         |                         |                         |                         |                         |                         |          |
|   | 205             | 0                       |                          |                          |                         |                         |                         |                         |                         |                         |          |
|   | 200             | 0                       |                          |                          |                         |                         |                         |                         |                         |                         |          |
| O   | 187             | TGH187-HVS^             | ASL187A-LSF^             | RSK187A-KSS^             | RVH187-HSF <sup>^</sup> | ARL187-LRA^             |                         |                         | RQF187-FQS^             |                         |          |
| •   | 160             | 0                       |                          |                          |                         |                         |                         |                         |                         |                         |          |
| L'  | 150             | TGH150-HVS^             | ASL150A-LSF^             | RSK150A-KSS <sup>^</sup> | RVH150-HSF <sup>^</sup> | ARL150-LRA <sup>^</sup> | RPK150-HRZ <sup>^</sup> | TG150C-HQZ <sup>^</sup> | RQF150-FQS^             | TG150C-JPZ^             |          |
| Rated Functioning Temp. ( $T_{ m f}$ ) $^{\circ}$ C | 145             | 0                       |                          |                          |                         |                         |                         |                         |                         |                         |          |
| ď   | 139             | 0                       |                          |                          |                         |                         |                         |                         |                         |                         |          |
| <u>6</u>  | 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^             |          |
| _<br>_  | 135             | 0                       |                          |                          |                         |                         |                         |                         |                         |                         | Model    |
| <u>.</u>  | 133             | 0                       |                          |                          |                         |                         |                         |                         |                         |                         | 8        |
| ou  | 130             | TGH130-HVS <sup>^</sup> |                          |                          | RVH130-HSF <sup>^</sup> |                         |                         |                         | RQF130-FQS^             |                         | <u> </u> |
| ij  | 125             | TGH125-HVS <sup>^</sup> | ASL125A-LSF^             | RSK125A-KSS <sup>^</sup> | RVH125-HSF <sup>^</sup> | ARL125-LRA^             | RPK125-HRZ <sup>^</sup> | TG125C-HQZ <sup>^</sup> | RQF125-FQS^             | TG125C-JPZ^             |          |
| Š   | 123             | 0                       |                          |                          |                         |                         |                         |                         |                         |                         |          |
| 屲   | 120             | 0                       |                          |                          |                         |                         |                         |                         |                         |                         |          |
| eq  | 115             | TGH115-HVS <sup>^</sup> | ASL115A-LSF <sup>^</sup> | RSK115A-KSS <sup>^</sup> | RVH115-HSF <sup>^</sup> | ARL115-LRA <sup>^</sup> | RPK115-HRZ <sup>^</sup> | TG115C-HQZ <sup>^</sup> | RQF115-FQS <sup>^</sup> | TG115C-JPZ <sup>^</sup> |          |
| at  | 105             | 0                       |                          |                          |                         |                         |                         |                         |                         |                         |          |
| œ   | 102             | TGH102-HVS <sup>^</sup> | ASL102A-LSF <sup>^</sup> | RSK102A-KSS <sup>^</sup> | RVH102-HSF <sup>^</sup> | ARL102-LRA <sup>^</sup> | RPK102-HRZ <sup>^</sup> | TG102C-HQZ <sup>^</sup> | RQF102-FQS <sup>^</sup> | TG102C-JPZ <sup>^</sup> |          |
|   | 97              | 0                       |                          |                          |                         |                         |                         |                         |                         |                         |          |
|   | 93              | 0                       |                          |                          |                         |                         |                         |                         |                         |                         |          |
|   | 86              | 0                       |                          |                          |                         | ARL86-LRA^              |                         | TG86C-HQZ <sup>^</sup>  | RQF86-FQS^              |                         |          |
|   | 76              | )                       | 0                        | 0                        | 0                       | 0                       | 0                       | 0                       | 0                       | 0                       | <b></b>  |
| r (.<br>Rated C                                     | A)<br>Current   | 15                      | 30                       | 25                       | 15                      | 30                      | 15                      | 15                      | 10                      | 20                      |          |
| U <sub>r</sub> (VI                                  | DC)^<br>/oltage | 850                     |                          | 600                      |                         | 5                       | 00                      | 4:                      | 50                      | 400                     |          |
| U <sub>r</sub> (V.<br>Rated V                       | AC)*<br>/oltage | 0                       |                          | 0                        |                         |                         | 0                       |                         | )<br>                   | 0                       |          |
| Proc<br>Struc                                       | duct<br>cture   |                         |                          |                          |                         |                         |                         | 0                       | 0                       |                         |          |
|   |                 | Axial                   | Shape                    | Radial                   | Shape                   | Axial Shape             | Radial Shape            | Axial Shape             | Radial Shape            | Axial Shape             |          |

| Product<br>Structure  |             |             |            |             |         |         |         |             |          |          |        |        |  |
|---|-------------|-------------|------------|-------------|---------|---------|---------|-------------|----------|----------|--------|--------|--|
| J <sub>r</sub> (VAC)*<br>ated Voltage   | 60          | 00          | 0          | 0           | 690     | 50      | 00      | 0           |          | (        |        |        |  |
| J <sub>r</sub> (VDC) <sup>A</sup> ated Voltage  |             | )           | 400        |             | 200     |         |         | 180         |          | 12       | <br>25 |        |  |
| r (A)   | 20          | 15          | 10         | 15          | 15      | 10      | 5       | 60          | 20       | 15<br>16 | 10     | 25     |  |
| 76(   |             | I Good-HSZ" | RPF80-FPF" |             |         |         |         |             |          |          |        |        |  |
| 93<br>86  | 0           | TG86C-HSZ*  | RPF86-FPF^ |             |         |         |         |             |          |          |        |        |  |
| 97  | 0           |             |            |             |         |         |         |             |          |          |        |        |  |
| 102   | TG102C-JSZ* |             |            |             |         |         |         | ALP102-PLZ^ | QD102^   | PD102^   | TD102^ | SD102^ |  |
| 105   | 0           |             |            |             |         |         |         |             |          |          |        |        |  |
| 115   | TG115C-JSZ* |             |            | ALP115-HLZ^ |         |         |         |             | QD115^   | PD115^   | TD115^ | SD115^ |  |
| 120   | 0           |             |            |             |         |         |         |             |          |          |        |        |  |
| 123   | 0           |             |            |             |         |         |         |             |          |          |        |        |  |
| 125   | TG125C-JSZ* |             |            |             | HN125^* | HP125^* | HS125^* | ALP125-PLZ^ | QD125^   | PD125^   | TD125^ | SD125^ |  |
| 130   | 0           |             |            |             |         |         |         |             | QD130^   | PD130^   | TD130^ | SD130^ |  |
| 133   | 0           |             |            |             |         |         |         |             |          |          |        |        |  |
| 187<br>160<br>150<br>145<br>139<br>136<br>135<br>133<br>130<br>125<br>123<br>120<br>115 | 0           |             |            |             |         |         |         |             |          |          |        |        |  |
| 136   | TG136C-JSZ* |             |            |             | HN136^* | HP136^* | HS136^* |             | QD136^   | PD136^   | TD136^ | SD136^ |  |
| 139   | 0           |             |            |             |         |         |         |             |          |          |        |        |  |
| 145   | 0           |             |            |             | 0       | 0       | HS150^* |             | QD 150·· | 0        | 0      | SD 130 |  |
| 160<br>150  | TG150C-JSZ* |             |            |             | HN150^* | HP150^* |         |             | QD150^   | PD150^   | TD150^ | SD150^ |  |
| 187   | 0           |             |            |             |         |         |         |             |          |          |        |        |  |
| 200   | 0           |             |            |             |         |         |         |             |          |          |        |        |  |
| 205   | 0           |             |            |             |         |         |         |             |          |          |        |        |  |
| 221   | 0           |             |            |             |         |         |         |             |          |          |        |        |  |
| 230   | 0           |             |            |             |         |         |         |             |          |          |        |        |  |

| Product<br>Structure                               |            |        |       | ~     |        |       |       | Radial Shap            | 0 0        |                        | •          | 72                |          | 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<br>16 | 50          | Г |
|  | 76         | ) 0    |       |       |        |       |       |                        |            |                        |            |                   |          |             |   |
|  | 93<br>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<br>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 |

| Product<br>Structure   |        |       |       |       |     |      |      | ⊏⊱  | _(   |       | <u></u> |      |       |      |       |      |       |       |      |     |      |            |       |      |
|--|--------|-------|-------|-------|-----|------|------|-----|------|-------|---------|------|-------|------|-------|------|-------|-------|------|-----|------|------------|-------|------|
| r(VAC)*<br>ted Voltage   |        | 250   | 0     | 250   |     |      | 0    |     |      | 250   |         |      |       | 2    | 50    | 0    | 2     | 50    | 125  |     | 0    |            | 250   |      |
| r (VDC)^<br>ted Voltage  |        |       |       |       |     |      |      |     |      |       |         |      | 60    |      |       |      |       |       |      |     |      |            |       |      |
| r (A)  |        |       | 5     | 1     | 0   | 9    | 8.5  | 8   | 6    |       | 5       |      | 4     | ;    | 3     | 2.5  | 2     |       | 1    | 4   | ,    | 3          | 2     | 1    |
|  | 6      | R0^*  |       | U0^*  |     |      |      |     | 0    |       |         |      |       |      |       | 0    |       |       |      |     | 0    | X0*        | K0*   | F0*  |
|  | 3<br>6 | R18^* |       | U18^* |     |      |      |     | C18^ |       |         |      |       |      |       | V18^ |       |       |      |     | F18^ | X18^*      | K18^* | F18* |
| 9  |        |       |       |       |     |      |      |     |      |       |         |      |       |      |       |      |       |       |      |     |      |            |       |      |
| 10   |        | R1^*  |       | U1^*  |     |      |      |     |      |       |         |      |       |      |       |      |       |       |      |     | F1^  | X1^*       | K1^*  | F1*  |
| 10   | _      |       |       |       |     |      |      |     |      |       |         |      |       |      |       |      |       |       |      |     |      |            |       |      |
| 18<br>16<br>15<br>14<br>13<br>13<br>13<br>13<br>13<br>12<br>12<br>12<br>11<br>10 |        | R2^*  |       | U2^*  |     |      |      | C2^ |      |       |         | V2^  |       | SF2^ |       |      |       |       |      |     | F2^  | X2^*       | K2^*  | F2*  |
| 12   | 20     |       |       |       |     |      |      |     |      |       |         |      |       |      |       |      |       |       |      |     |      |            |       |      |
| 12   | 23     |       |       |       |     |      |      |     |      |       |         |      |       |      |       |      |       |       |      |     |      |            |       |      |
| 12   |        | R3^*  |       | U3^*  |     |      |      |     |      |       |         |      |       |      |       |      | H3^*  |       |      |     |      | X3^*       | K3^*  | F3*  |
| 13   |        | R4^*  |       | U4^*  |     |      |      |     |      |       |         | V4^  |       | SF4^ |       |      |       |       |      |     | F4^  | X4*        | K4*   | F4*  |
| 13   |        | 0     |       | 00    |     |      |      |     |      |       |         | V8^  |       | SF8^ |       |      |       |       |      |     | F8^  | X8*        | K8*   | F8*  |
| 13   |        | R5^*  |       | U5^*  |     |      |      |     |      |       |         |      | X9^   |      |       |      |       |       |      | K9^ |      | X9*<br>X5* | K9*   |      |
| 13<br>13   |        |       | CR13^ |       |     | M13^ | C13^ |     |      |       | SF13^   | V13^ | O YOA |      |       |      |       |       |      | 0   | F13^ | O YOX      | 0     | F13* |
| 14   |        | R6^*  | 0     | U6^*  | C6^ | 0    | 0    |     |      |       | 0       | 0    | X6^   |      |       |      |       |       |      | K6^ | F6^  | X6*        | K6*   | F6*  |
| 15   |        | R7^*  |       | U7^*  |     |      |      |     |      |       |         |      |       |      |       |      |       |       |      |     |      | X7*        | K7*   | F7*  |
| 16   | 0      | R16^* |       | U16^* |     |      |      |     |      | C16^* |         |      |       |      |       |      | H16^* | V16^* |      |     |      | X16^*      | K16^* | F16* |
| 18   | 7      |       |       |       |     |      |      |     |      |       |         |      |       |      |       |      |       |       |      |     |      | X17^*      | K17^* |      |
| 20   |        | 0     |       | 0     |     |      |      |     |      | 0     |         |      |       |      | 0     |      | 0     | 0     | 0    |     |      | 0          | 0     |      |
| 20   |        | R32^* |       | U32^* |     |      |      |     |      | C32^* |         |      |       |      | B32^* |      | H32^* | V32^* | V31* |     |      | X32*       | K32*  |      |
| 22   | и 📗    | R31^* |       | U31^* |     |      |      |     |      | C31^* |         |      |       |      | B31^* |      | H31^* | V31^* | V31* |     |      | X31*       | K31*  |      |

|                                      | 4                    |        |        |      |       |       |              |       |            |       |       |           |              |              |              | /            | <b>\</b>      |
|--------------------------------------|----------------------|--------|--------|------|-------|-------|--------------|-------|------------|-------|-------|-----------|--------------|--------------|--------------|--------------|---------------|
|                                      | 230                  | 0      | 0      | 0    | 0     | 0     | 0            | 0     | 0          | 0     | 0     | 0         | ADN230B-NDZ^ | ADN230B-PDZ^ | 0            | ADN230B-QBZ^ | $\vdash$      |
|                                      | 221                  | XG31*  | KG31*  |      |       | C31*  |              | B31*  |            | H31*  |       |           |              |              | ADN205B-NDZ^ |              |               |
|                                      | 205                  | XG32*  | KG32*  |      |       | C33*  |              | B32*  |            | H32*  |       |           |              |              |              |              |               |
|                                      | 200                  | 0      |        |      |       |       |              |       |            |       |       |           |              |              |              | 0            |               |
| O                                    | 187                  | 0      |        |      |       |       |              |       |            |       |       |           |              |              |              |              |               |
| •                                    | 160                  | XG16*  | KG16*  |      |       |       | B16*         |       |            |       |       |           |              |              |              |              |               |
| F                                    | 150                  | XG7*   | KG7*   | C7^  | C7*   |       | B7^*         |       | H7^*       |       | V7^*  |           |              |              |              |              |               |
| <u>.</u>                             | 145                  | XG6*   | KG6*   | C6^  | C6*   |       | B6^*         |       | H6^*       |       | V6^*  |           |              |              |              |              |               |
| ď                                    | 139                  | 0      |        | C13^ | C13*  |       | B13^*        |       | H13^*      |       | V13^* |           |              |              |              |              |               |
| <u>ē</u>                             | 136                  | XG9*   | KG9*   | C9^  | C9*   |       | B9^*         |       | H9^*       |       | V9^*  |           |              |              |              |              |               |
| 6                                    | 135                  | XG5*   | KG5*   | C5^  | C5*   |       | B5^*         |       | H5^*       |       | V5^*  |           |              |              |              |              | 3             |
| <b>.</b> <u>.</u>                    | 133                  | XG8*   | KG8*   | C8^  | C8*   |       | B8^*         |       | H8^*       |       | V8^*  |           |              |              |              |              | Model         |
| ou                                   | 130                  | XG4*   | KG4*   | C4^  | C4*   |       | B4^*         |       | H4^*       |       | V4^*  |           |              |              |              |              | <u> </u>      |
| Rated Functioning Temp. (7, ) °C     | 125                  | XG3^*  | KG3^*  | C3^  | C3*   |       | B3^*         |       |            |       | V3^*  |           |              |              |              |              |               |
| Š                                    | 123                  | 0      |        |      |       |       |              |       |            |       |       |           |              |              |              |              |               |
| 重                                    | 120                  | 0      |        |      |       |       |              |       |            |       |       |           |              |              |              |              |               |
| eq                                   | 115                  | XG2^*  | KG2^*  | C2^  | C2*   |       | B2^*         |       | H2^*       |       | V2^*  |           |              |              |              |              |               |
| at                                   | 105                  | 0      |        |      |       |       |              |       |            |       |       |           |              |              |              |              |               |
| œ                                    | 102                  | XG1^*  | KG1^*  |      | C1^*  | C1*   | B1^*         | B1*   | H1^*       | H1*   | V1^*  | V1*       |              |              |              |              |               |
|                                      | 97                   | 0      |        |      |       | C21^* |              | B21^* |            | H21^* |       | V21^*     |              |              |              |              |               |
|                                      | 93                   | 0      |        |      |       |       |              |       |            |       |       |           |              |              |              |              |               |
|                                      | 86                   | XG18^* | KG18^* |      | C18^* | C18*  | B18^*        | B18*  | H18^*      | H18*  | V18^* | V18*      |              |              |              |              |               |
|                                      | 76(                  | XG0*   | KG0*   | 0    | C0*   | 0     | B0^*         | B0*   | H0^*       | H0*   | V0^*  | V0*       | 0            | 0            | 0            | 0            | $\rightarrow$ |
| r ( /<br>Rated C                     | A)<br>urrent         | 3      | 2      | 7    |       | 5     | 3            |       |            | 2     |       | 1         | 50           | 55           | 50           | 80           |               |
| <b>U</b> <sub>r</sub> (VI<br>Rated V | DC)^<br>/oltage      | 6      | 0      |      |       |       |              | 50    |            |       |       |           | 49           | 4            | 18           | 24           |               |
| <b>U</b> <sub>r</sub> (v)            | AC)*                 | 2      | <br>50 | 0    | 250   | 125   | 250          | 125   | 250        | 125   | 250   | 125       |              |              | 0            | /            |               |
| Proc                                 | Product<br>Structure |        | Shape  |      |       | С     | <b>⇒</b> —() |       | ) <u> </u> |       |       | Axial Sha | ppe          |              |              |              |               |