

# Auxiliary Switch Diode for RCD

## RCD10

### Description

RCD10 is designed to store a large amount of charge during forward conduction. When change to the reverse direction, it will set up an electric current in a short time. After the current, the stored charge disappeared and the electric current immediately stopped. This characteristic is suitable for various types of power supply RCD absorption circuit particularly, it can recover leakage inductance energy to improve the efficiency of light load, and can also avoid the loss, due to overlap of the voltage and the current.

### Features

- Reverse conduction capability
- Integrated series resistance
- Switching loss is small
- Smoothly soft reverse recovery time
- RoHS compliant with Halogen-free




### Mechanical Data

- Case: SMA molded plastic
- Molding compound, UL flammability classification rating 94V-0
- Terminals: Solder Plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end

### Maximum Ratings (@T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	RCD10	Unit
Peak repetitive reverse voltage	V <sub>RRM</sub>	800	V
RMS reverse voltage	V <sub>RMS</sub>	560	V
DC blocking voltage	V <sub>DC</sub>	800	V
Maximum average forward output current	I <sub>F(AV)</sub>	1.0	A
Peak forward surge current, 8.3ms single half-sine-wave	@T <sub>J</sub> = 25°C I <sub>FSM</sub>	10	A

### Thermal Characteristics

Parameter	Symbol	RCD10	Unit
Typical Thermal Resistance *1	R <sub>θJA</sub>	65	°C /W
	R <sub>θJC</sub>	24	
	R <sub>θJL</sub>	15	
Operating junction temperature range	T <sub>J</sub>	-55 ~ +150	°C
Storage temperature range	T <sub>STG</sub>	-55 ~ +150	°C

Note \*1: Device mounted on p.c.b. with 10 mm x 20 mm x 0.1mm copper pad area

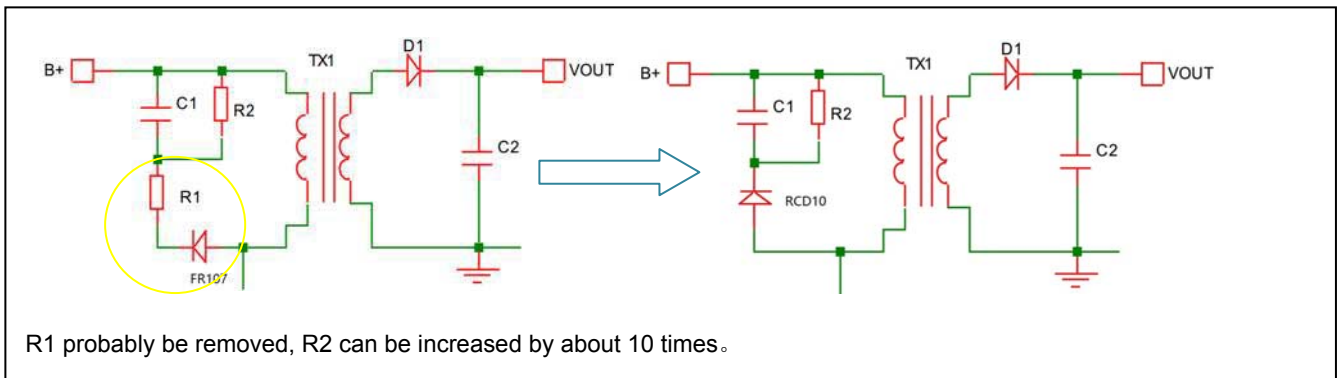
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### Electrical Characteristics (@T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Typ.	Max.	Unit
Maximum Instantaneous Forward Voltage	V <sub>F</sub>	I <sub>F</sub> = 0.1A	-	1.4	V
		I <sub>F</sub> = 1.0A	-	1.7	V
Maximum Reverse Current	I <sub>R</sub>	Rated V <sub>R</sub>	@T <sub>A</sub> = 25°C	5	μA
			@T <sub>A</sub> = 125°C	50	
Maximum Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>r</sub> =0.25A	-	3000	ns

### RCD snubber circuit



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## Rating sand Characteristic Curves (@ $T_A=25^\circ\text{C}$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

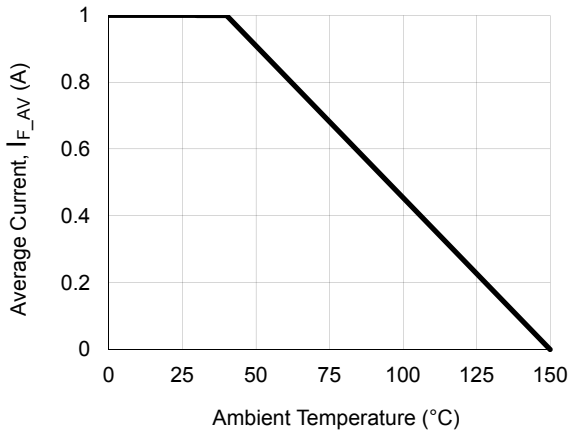


Fig.2 Surge Current Derating Curve

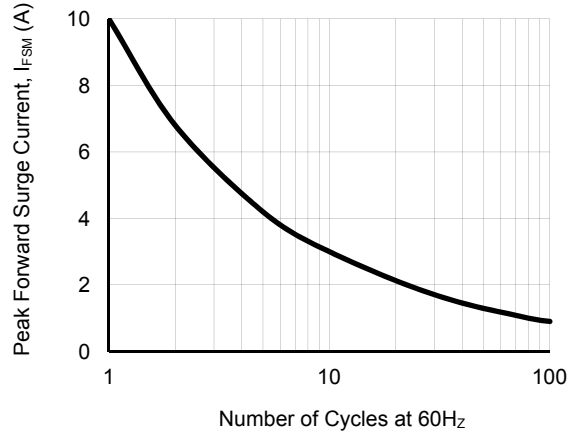


Fig.3-Typical Forward Voltage Characteristic

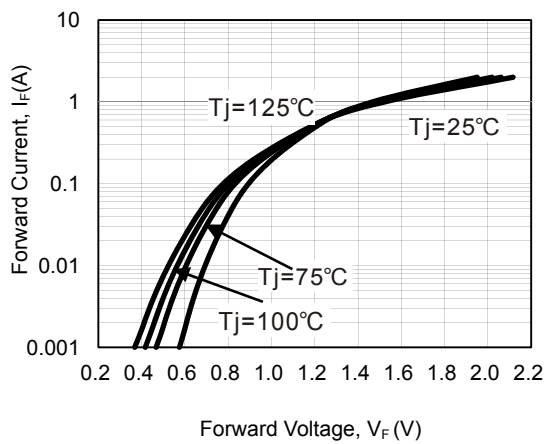
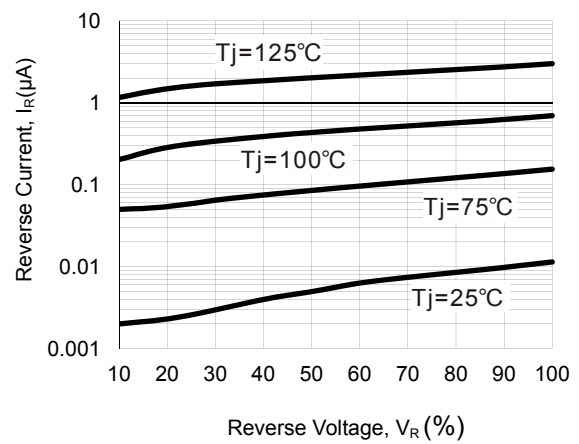


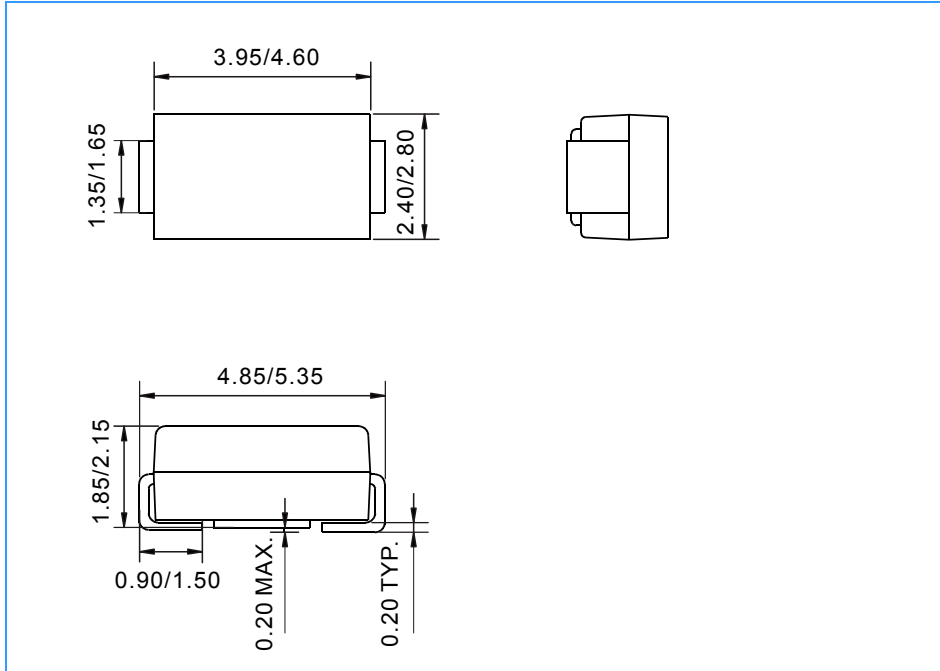
Fig.4-Typical Reverse Characteristic



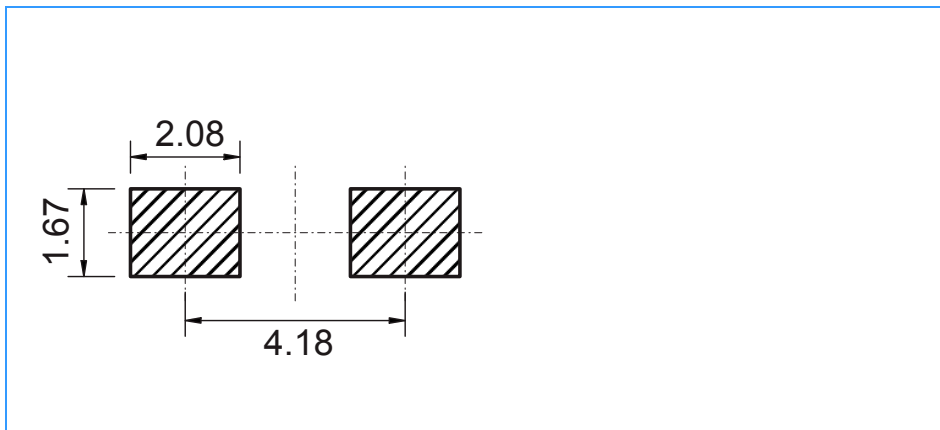
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### Package Outline Dimensions (Unit: mm)



### Mounting Pad Layout (Unit: mm)



### Ordering Information

Part Number	Marking	Package	Shipping Quantity
RCD10	D10	SMA	5000 / Tape & Reel