



Continental Device India Pvt. Limited

An IATF 16949, ISO9001 and ISO 14001 Certified Company



## SCHOTTKY BARRIER RECTIFIERS

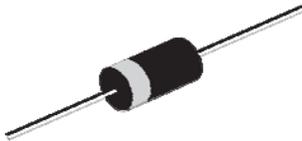
Reverse Voltage - 45 Volts

Forward Current - 10.0 Amperes

**10SQ045**

**R-6**

**Leaded plastic package  
RoHS compliant**



**R-6**

### FEATURES

1. The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
2. Low power loss,high efficiency
3. Ultra low forward voltage,high current capability
4. High forward surge current capability
5. For use in low voltage,high frequency inverters free wheeling,and polarity protection applications
6. This device is available in AEC-Q101 compliant also.

Note: For AEC-Q101 compliant products, please suffix-AQ in the part Number while ordering

### APPLICATIONS:

Switching power supplies, converters freewheeling diodes, and reverse battery protection applications

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**ABSOLUTE MAXIMUM RATINGS** (Ta = 25 °C Unless otherwise specified)

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	45	V
Maximum RMS voltage	$V_{RMS}$	32	V
Maximum DC blocking voltage	$V_{DC}$	45	V
Maximum average forward rectified current	$I_{(AV)}$	10	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	250	A
Maximum instantaneous forward voltage at 10A	$V_F$	0.55	V
Maximum DC reverse current	$I_R$	$T_J=25^{\circ}C$	mA
at rated DC blocking voltage		$T_J=100^{\circ}C$	
Typical Thermal Resistance (Note1)	$R_{\theta JC}$	2.2	°C/W
	$R_{\theta JL}$	2.0	
	$R_{\theta JA}$	45.0	
Operating junction temperature range	$T_J$	-55 to +200	°C
Storage temperature range	$T_{STG}$	-55 to +200	°C

**NOTE :**

1. Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length, P.C.B. mounted



## CHARACTERISTIC CURVES

Fig 1: Forward Current Derating Curve

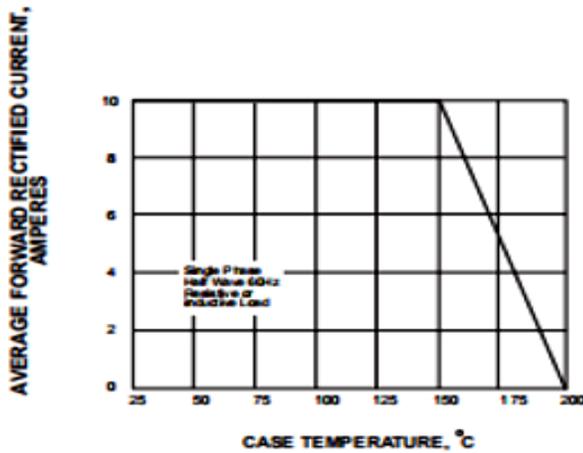


Fig 3: Typical Instantaneous Forward

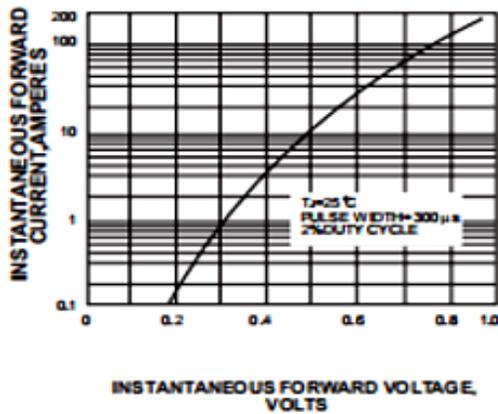


Fig 2: Maximum Non-Repetitive Peak Forward Surge Current

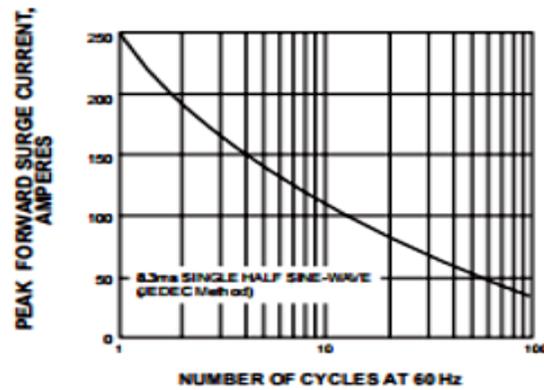
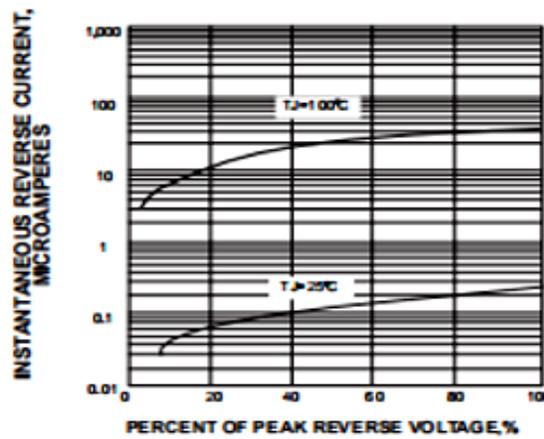


Fig 4: Typical Reverse Characteristics





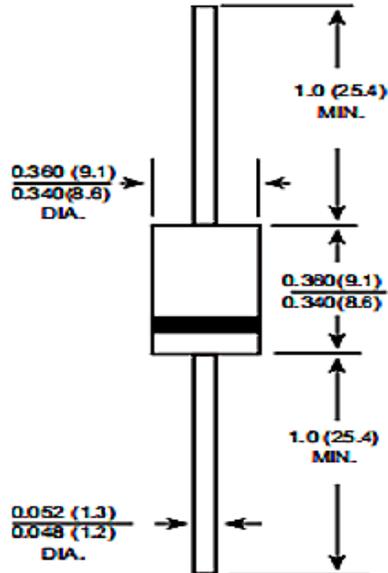
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## Package Details

R-6 Molded Plastic Package



Device Marking Code :10SQ045

### MECHANICAL DATA

**Case:** R-6 molded plastic body

**Terminals:** Plated axial leads, solder able per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

**Weight:** 0.072 ounce, 2.05 grams

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## **Recommended Product Storage Environment for Discrete Semiconductor Devices**

This storage environment assumes that the Diodes and transistors are packed properly inside the original packing supplied by CDIL.

- Temperature 5 °C to 30 °C
- Humidity between 40 to 70 %RH
- Air should be clean.
- Avoid harmful gas or dust.
- Avoid outdoor exposure or storage in areas subject to rain or water spraying .
- Avoid storage in areas subject to corrosive gas or dust. Product shall not be stored in areas exposed to direct sunlight.
- Avoid rapid change of temperature.
- Avoid condensation.
- Mechanical stress such as vibration and impact shall be avoided.
- The product shall not be placed directly on the floor.
- The product shall be stored on a plane area. They should not be turned upside down. They should not be placed against the wall.

### **Shelf Life of CDIL Products**

The shelf life of products is the period from product manufacture to shipment to customers.

### **Floor Life of CDIL Products and MSL Level**

When the products are opened from the original packing, the floor life will start.

For this, the following JEDEC table may be referred:

JEDEC MSL Level		
Level	Time	Condition
1	Unlimited	≤30 °C / 85% RH
2	1 Year	≤30 °C / 60% RH
2a	4 Weeks	≤30 °C / 60% RH
3	168 Hours	≤30 °C / 60% RH
4	72 Hours	≤30 °C / 60% RH
5	48 Hours	≤30 °C / 60% RH
5a	24 Hours	≤30 °C / 60% RH
6	Time on Label(TOL)	≤30 °C / 60% RH

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## Customer Notes

### Component Disposal Instructions

1. CDIL Semiconductor Devices are R Ohs compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

## Disclaimer

The product information and the selection guides facilitate selection of the Coil's Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s). CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



CDIL is a registered trademark of  
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