



**SCHOTTKY BARRIER SOLAR RECTIFIER**

**VOLTAGE 45 Volts CURRENT 16 Amperes**

**FEATURES**

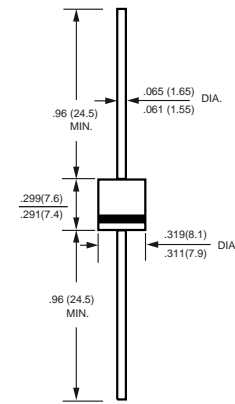
- \* Low switching noise
- \* Low forward voltage drop
- \* Low thermal resistance
- \* High current capability
- \* High surge capability
- \* High reliability
- \* Ideal for solar panel PV application such as By-Pass diode

**MECHANICAL DATA**

- \* Case: R-7 axial-leaded, molded plastic
- \* Epoxy: Device has UL flammability classification 94V-0
- \* Lead: MIL-STD-202E method 208C guaranteed
- \* Mounting position: Any
- \* Weight: 1.897 grams



**R-7**



Dimensions in inches and (millimeters)

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25 °C ambient temperature unless otherwise specified.

**MAXIMUM RATINGS (@ TA=25 °C unless otherwise noted)**

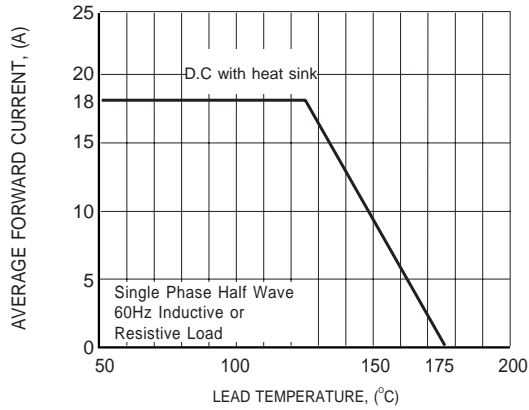
| RATINGS   | SYMBOL          | SPK1645   | UNITS            |
|---|-----------------|---|------------------|
| Maximum Recurrent Peak Reverse Voltage  | $V_{RRM}$       | 45  | Volts            |
| Maximum RMS Voltage   | $V_{RMS}$       | 31.5  | Volts            |
| Maximum DC Blocking Voltage   | $V_{DC}$        | 45  | Volts            |
| Maximum DC Forward Current @TL=125°C(Note 1)  | $I_o$           | 16  | Amps             |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | $I_{FSM}$       | 300   | Amps             |
| Typical Current Square Time   | $I^2T$          | 373.3   | A <sup>2</sup> S |
| Typical Thermal Resistance  | $R_{\theta JA}$ | 12.5  | °C/W             |
|   | $R_{\theta JC}$ | 9.3   |                  |
|   | $R_{\theta JL}$ | 6.2   |                  |
| Operating Temperature Range   | $T_J$           | 175( $T_J \leq 200^\circ\text{C}$ in Bypass Mode) | °C               |
| Storage Temperature Range   | $T_{STG}$       | -55 to + 175                                      | °C               |

**ELECTRICAL CHARACTERISTICS(@TA=25 °C unless otherwise noted)**

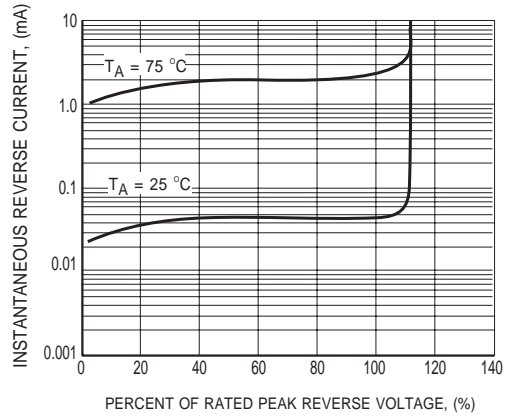
| CHARACTERISTICS  | SYMBOL                     | SPK1645 | UNITS |
|--|----------------------------|---------|-------|
| Maximum Instantaneous Forward Voltage at 16 A DC             | @ $T_A = 25^\circ\text{C}$ | .52     | Volts |
|  | @ $T_A = 75^\circ\text{C}$ | .47     |       |
| Maximum Average Reverse Current at Rated DC Blocking Voltage | @ $T_A = 25^\circ\text{C}$ | 100     | uA    |
|  | @ $T_A = 75^\circ\text{C}$ | 2.5     | mA    |

- NOTES : 1. Heat-sink mounted 10mm max from body  
 2. "Fully ROHS compliant", "100% Sn plating (Pb-free)".  
 3. Available in Halogen-free epoxy by adding suffix -HF after the part nbr.

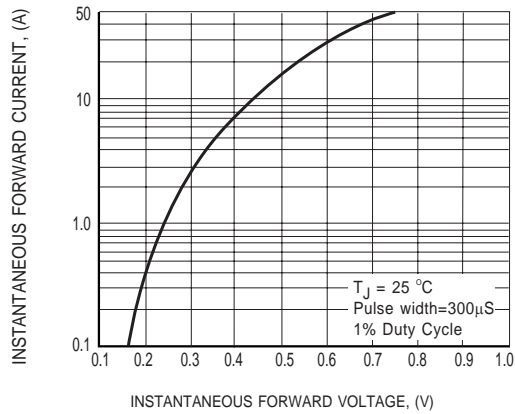
## RATING AND CHARACTERISTICS CURVES ( SPK1845 )



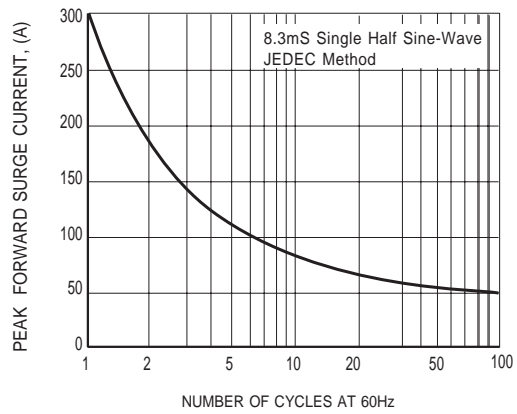
**FIG.1 TYPICAL FORWARD CURRENT DERATING CURVE**



**FIG.2 TYPICAL REVERSE CHARACTERISTICS**



**FIG.3 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**



**FIG.4 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**

## DISCLAIMER NOTICE

Rectron Inc reserves the right to make changes without notice to any product specification herein, to make corrections, modifications, enhancements or other changes. Rectron Inc or anyone on its behalf assumes no responsibility or liability for any errors or inaccuracies. Data sheet specifications and its information contained are intended to provide a product description only. "Typical" parameters which may be included on RECTRON data sheets and/ or specifications can and do vary in different applications and actual performance may vary over time. Rectron Inc does not assume any liability arising out of the application or use of any product or circuit.

Rectron products are not designed, intended or authorized for use in medical, life-saving implant or other applications intended for life-sustaining or other related applications where a failure or malfunction of component or circuitry may directly or indirectly cause injury or threaten a life without expressed written approval of Rectron Inc. Customers using or selling Rectron components for use in such applications do so at their own risk and shall agree to fully indemnify Rectron Inc and its subsidiaries harmless against all claims, damages and expenditures.