



**SCHOTTKY BARRIER SOLAR RECTIFIER**

**VOLTAGE 45 Volts CURRENT 16 Amperes**

**FEATURES**

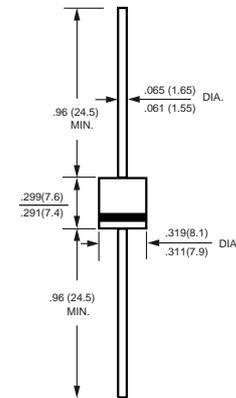
- \* Low switching noise
- \* Low forward voltage drop
- \* Low thermal resistance
- \* High current capability
- \* High surge capability
- \* High reliability
- \* Ideal for solar panel PV application such as By-Pass diode

**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)**

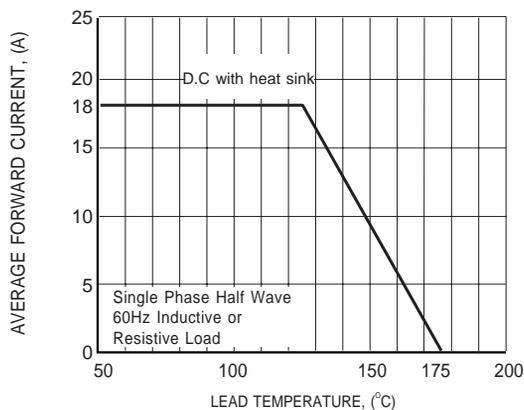
RATINGS	SYMBOL	SPK1645	UNITS
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	45	Volts
Maximum RMS Voltage	$V_{RMS}$	31.5	Volts
Maximum DC Blocking Voltage	$V_{DC}$	45	Volts
Maximum DC Forward Current @TL=125°C(Note 1)	$I_o$	16	Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed 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)**

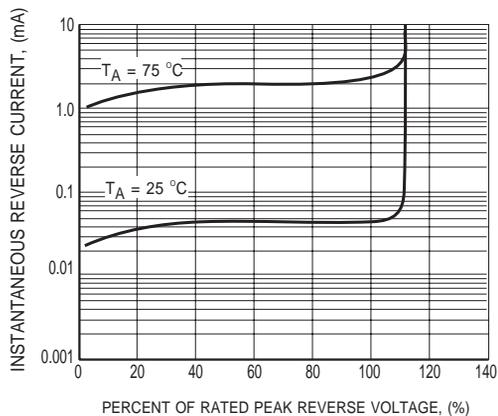
CHARACTERISTICS	SYMBOL	SPK1645	UNITS	
Maximum Instantaneous Forward Voltage at 16 A DC	$V_F$	@ $T_A = 25^\circ\text{C}$	.52	Volts
		@ $T_A = 75^\circ\text{C}$	.47	
Maximum Average Reverse Current at Rated DC Blocking Voltage	$I_R$	@ $T_A = 25^\circ\text{C}$	100	uA
		@ $T_A = 75^\circ\text{C}$	2.5	mA

- 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.

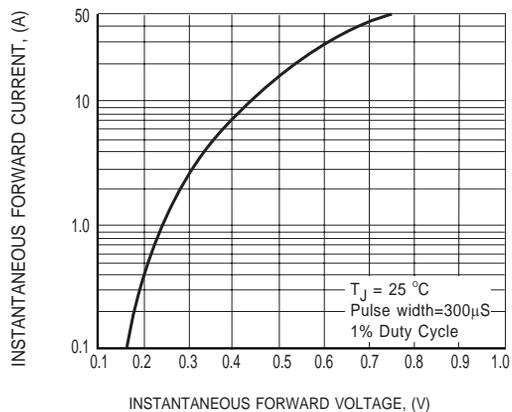
## RATING AND CHARACTERISTICS CURVES ( SPK1845 )



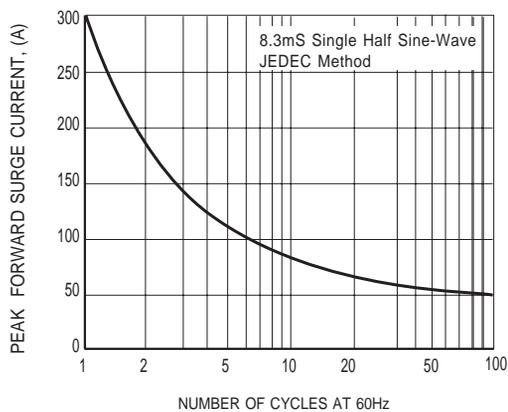
**FIG.1 TYPICAL FORWARD CURRENT DERATING CURVE**



**FIG.2 TYPICAL REVERSE CHARACTERISTICS**



**FIG.3 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**



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

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