PD - 93981A

International
IOR Rectifier

SCHOTTKY RECTIFIER
HIGH EFFICIENCY SERIES

16SYQ045C

16A, 45V

Major Ratings and Characteristics

Characteristics	16SYQ045C	Units
$I_{F(AV)}$	16	A
V_{RRM}	45	V
I_{FSM} @ tp = 8.3ms half-sine	250	A
V_F @ 16Apk, T_J =125°C	0.85	V
T_J, T_{stg} Operating and storage	-55 to 150	°C

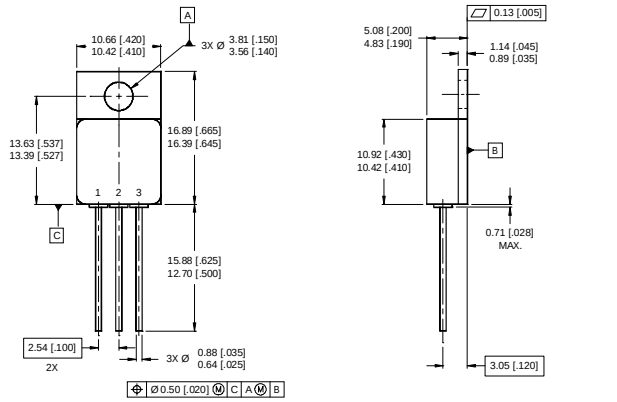
Description/Features

The 16SYQ045C Schottky rectifier has been expressly designed to meet the rigorous requirements of hi-rel environments. It is packaged in the hermetic isolated TO-257AA ceramic package. The device's forward voltage drop and reverse leakage current are optimized for the lowest power loss and the highest circuit efficiency for typical high frequency switching power supplies and resonent powerconverters.FullMIL-PRF-19500 quality conformance testing is available on source control drawings to TX, TXV and S levels.

- Hermetically Sealed
- Ceramic Eyelets
- Low Forward Voltage Drop
- High Frequency Operation
- Guard Ring for Enhanced Ruggedness and Long term Reliability
- Lightweight

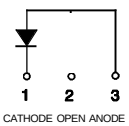
CASE STYLE





NOTES:

1. DIMENSIONING & TOLERANCING PER ANSI Y14.5M-1994.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSIONS ARE SHOWN IN MILLIMETERS [INCHES].
4. OUTLINE CONFORMS TO JEDEC OUTLINE TO-257AA.



Case Outline and Dimensions - TO-257AA

03/27/02

Voltage Ratings

	Part number	16SYQ045C
V_R	Max. DC Reverse Voltage (V)	45
V_{RWM}	Max. Working Peak Reverse Voltage (V)	

Absolute Maximum Ratings

	Parameters	Limits	Units	Conditions
$I_{F(AV)}$	Max. Average Forward Current See Fig. 5	16	A	50% duty cycle @ T_C = 117°C, square waveform
I_{FSM}	Max. Peak One Cycle Non - Repetitive Surge Current	250	A	@ t_p = 8.3 ms half-sine

Electrical Specifications

	Parameters	Limits	Units	Conditions	
V_{FM}	Max. Forward Voltage Drop See Fig. 1①	0.63	V	@ 16A	T_J = -55°C
		0.79	V	@ 32A	
		0.56	V	@ 16A	T_J = 25°C
		0.79	V	@ 32A	
		0.52	V	@ 16A	T_J = 125°C
		0.85	V	@ 32A	
I_{RM}	Max. Reverse Leakage Current See Fig. 2①	0.74	mA	T_J = 25°C	V_R = rated V_R
		75	mA	T_J = 100°C	
		210	mA	T_J = 125°C	
C_T	Max. Junction Capacitance	2800	pF	V_R = 5V_{DC} (1MHz, 25°C)	
L_S	Typical Series Inductance	9.8	nH	Measured from anode lead to cathode lead 6mm (0.025 in.) from package	

Thermal-Mechanical Specifications

	Parameters	Limits	Units	Conditions
T_J	Max.Junction Temperature Range	-55 to 150	°C	
T_{stg}	Max. Storage Temperature Range	-55 to 150	°C	
R_{thJC}	Max. Thermal Resistance, Junction to Case	1.15	°C/W	DC operation See Fig. 4
wt	Weight (Typical)	4.3	g	
	Die Size	200X200	mils	
	Case Style	TO-257AA		

① Pulse Width < 300µs, Duty Cycle < 2%

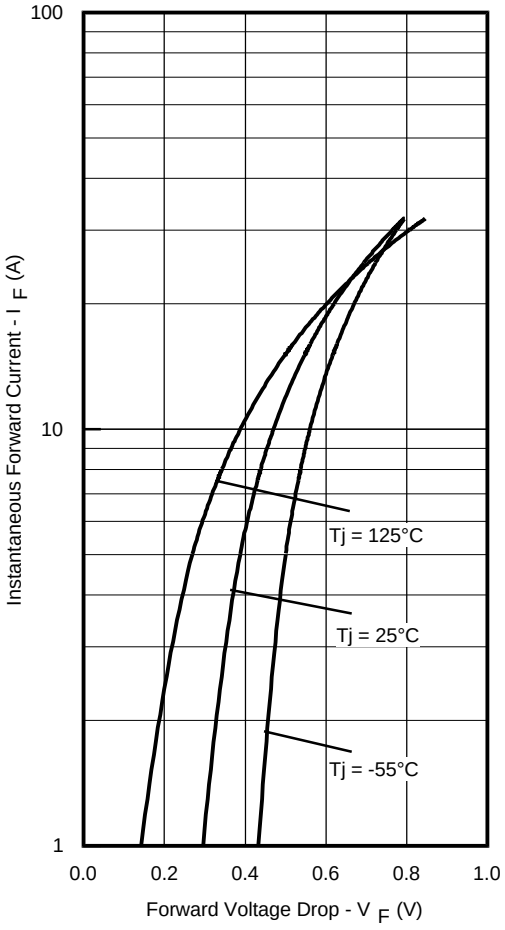


Fig. 1 - Max. Forward Voltage Drop Characteristics

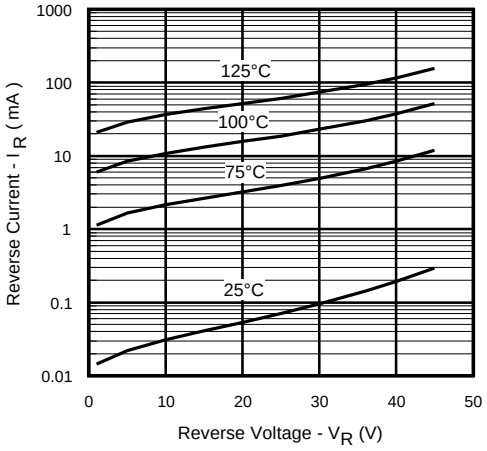


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

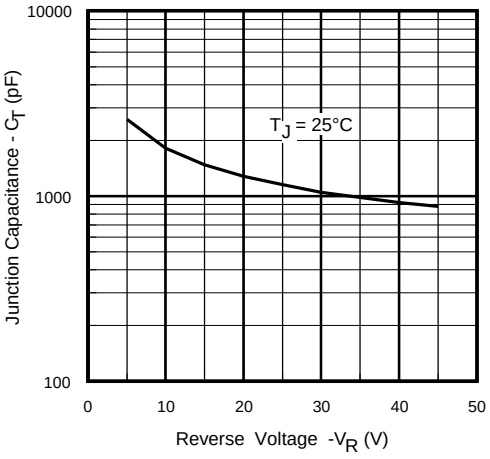


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

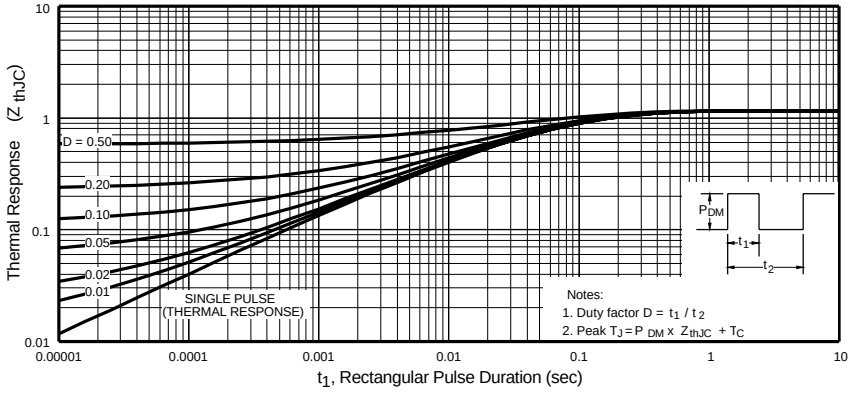


Fig. 4 - Max. Thermal Impedance Z_{thJC} Characteristics

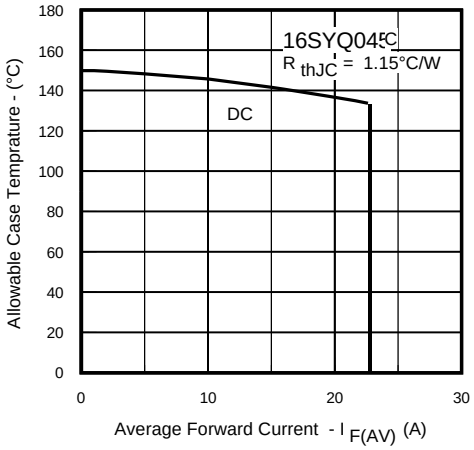


Fig. 5 - Max. Allowable Case Temperature Vs.
Average Forward Current

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Data and specifications subject to change without notice. 03/02