

SCHOTTKY RECTIFIER
HIGH EFFICIENCY SERIES

16SYQ045C

16A, 45V

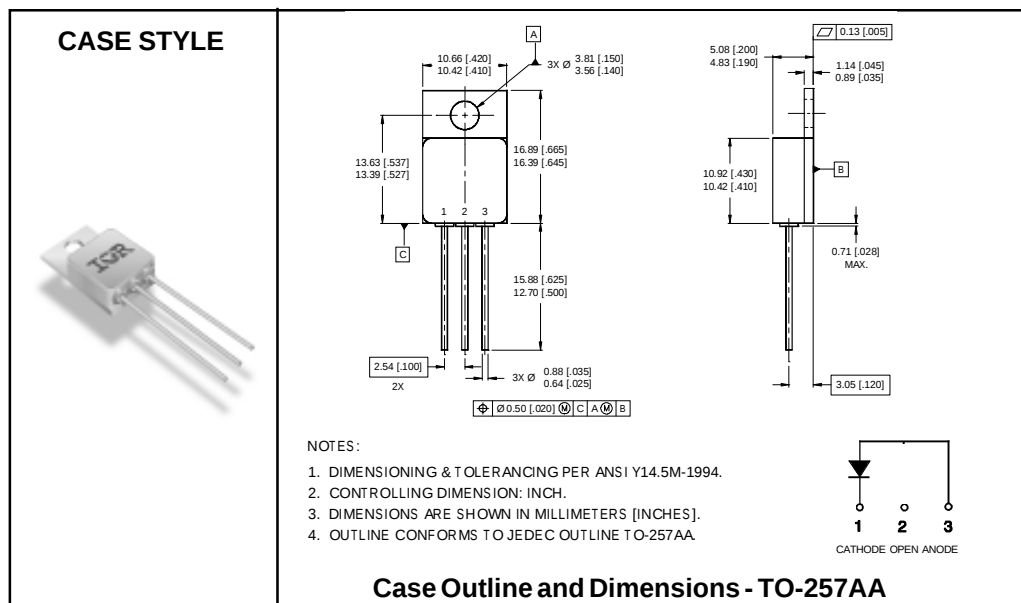
Major Ratings and Characteristics

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

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 resonant power converters. Full MIL-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



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. 1 ^①	0.63	V	@ 16A T _J = -55°C
	0.79	V	@ 32A T _J = -55°C
	0.56	V	@ 16A T _J = 25°C
	0.79	V	@ 32A T _J = 25°C
	0.52	V	@ 16A T _J = 125°C
	0.85	V	@ 32A T _J = 125°C
I _{RM} Max. Reverse Leakage Current See Fig. 2 ^①	0.74	mA	T _J = 25°C
	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%

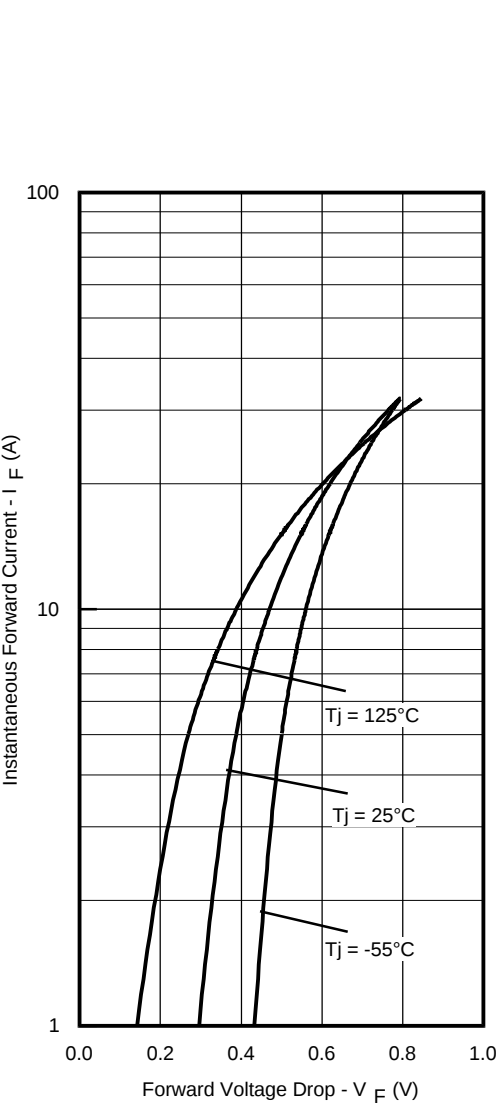


Fig. 1 - Max. Forward Voltage Drop Characteristics

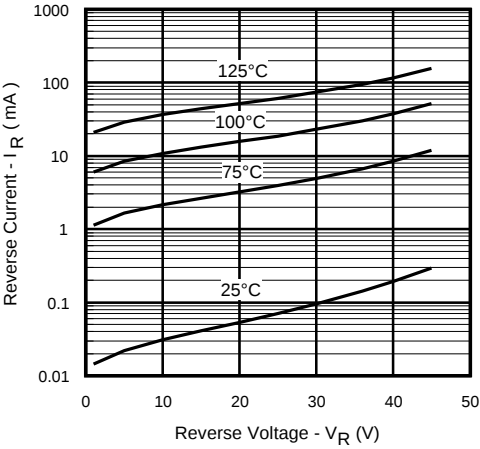


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

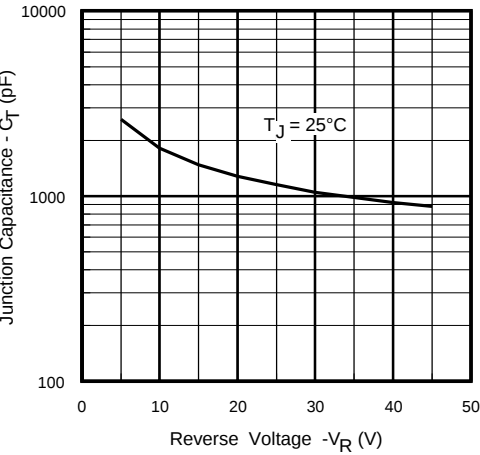


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

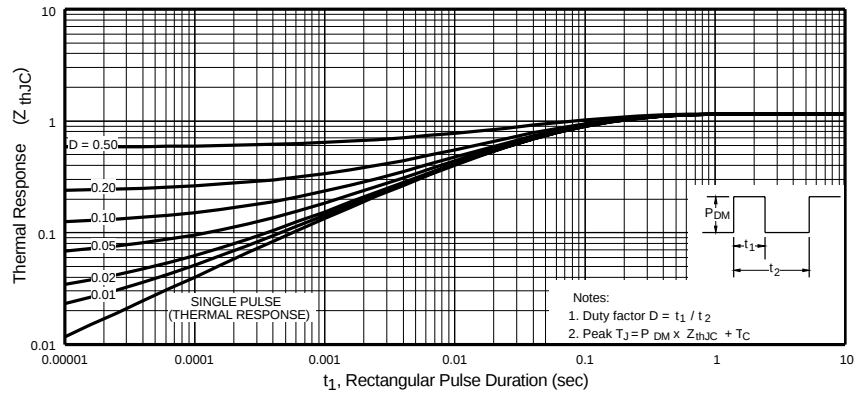
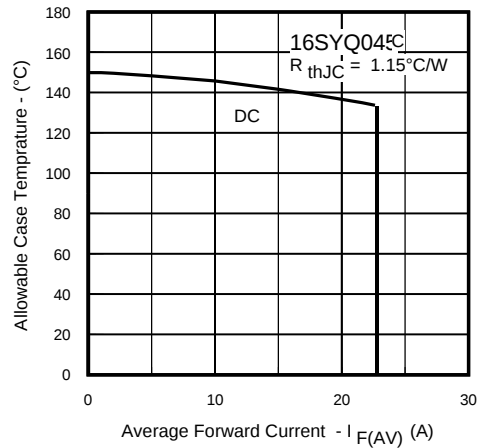
Fig. 4 - Max. Thermal Impedance Z_{thJC} Characteristics

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