

**SCHOTTKY RECTIFIER
HIGH EFFICIENCY SERIES**

16 Amp. 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	$^\circ C$

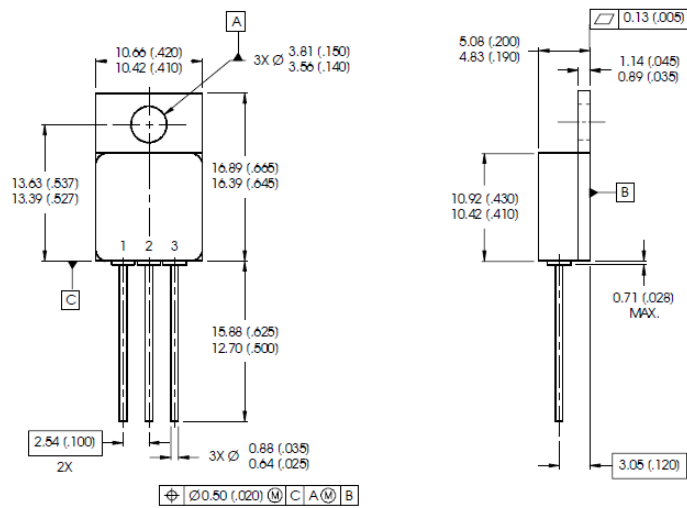
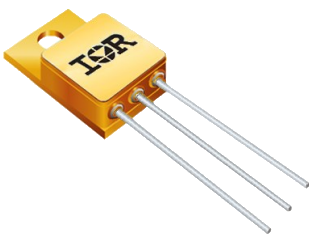
Description/Features

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 powerconverters. FullMIL-PRF-19500 quality conformance testing is available on source control drawings to TX, TXV and S levels.

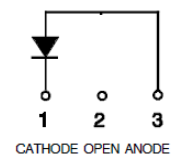
- Hermetically Sealed
- Ceramic Eyelets
- Low Forward Voltage Drop
- High Frequency Operation
- Guard Ring for Enhanced Ruggedness and Long term Reliability
- Lightweight

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

Voltage Ratings

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

Absolute Maximum Ratings

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

Electrical Specifications

Parameter	Limits	Units	Conditions	
V_{FM} Max. Forward Voltage Drop See Fig. 1 ①	0.63	V	@ $I_F = 16\text{A}$	$T_J = -55^\circ\text{C}$
	0.79	V	@ $I_F = 32\text{A}$	
	0.56	V	@ $I_F = 16\text{A}$	$T_J = 25^\circ\text{C}$
	0.79	V	@ $I_F = 32\text{A}$	
	0.52	V	@ $I_F = 16\text{A}$	$T_J = 125^\circ\text{C}$
	0.85	V	@ $I_F = 32\text{A}$	
I_{RM} Max. Reverse Leakage Current	0.74	mA	$T_J = 25^\circ\text{C}$	$V_R = \text{rated } V_R$
	75	mA	$T_J = 100^\circ\text{C}$	
	375	mA	$T_J = 125^\circ\text{C}$	
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

Parameter	Limits	Units	Conditions
T_J Max. Junction Temperature Range	-55 to 150	$^\circ\text{C}$	
T_{stg} Max. Storage Temperature Range	-55 to 150	$^\circ\text{C}$	
R_{thJC} Max. Thermal Resistance, Junction to Case	1.15	$^\circ\text{C/W}$	DC operation See Fig. 4
Wt Weight (Typical)	4.3	g	
Die Size (Typical)	200 x 200	mils	
Case Style	TO-257AA		

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

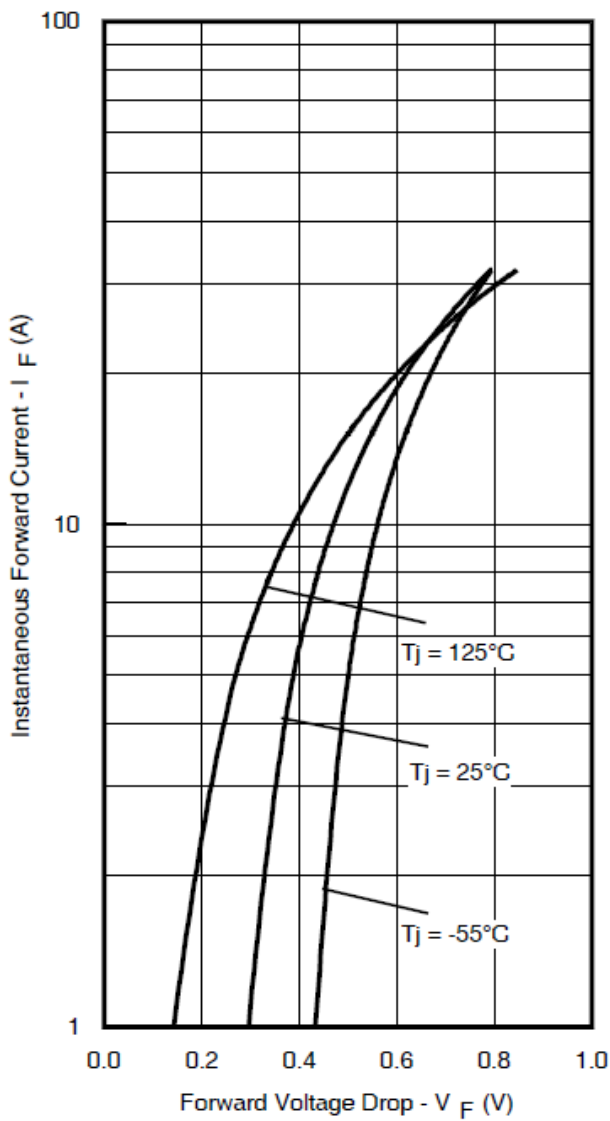


Fig 1. Max. Forward Voltage Drop Characteristics

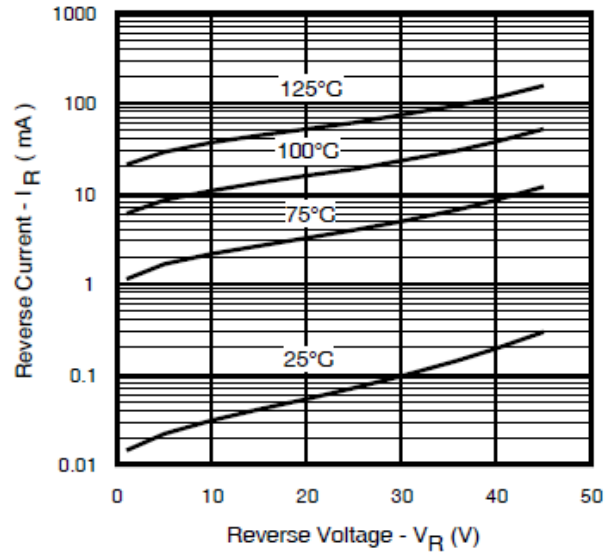


Fig 2. Typical Values of Reverse Current Vs. Reverse Voltage

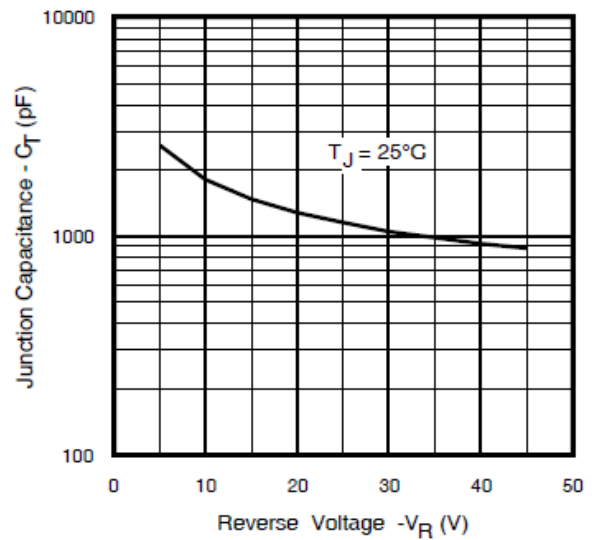


Fig 3. Typical Junction Capacitance Vs. Reverse Voltage

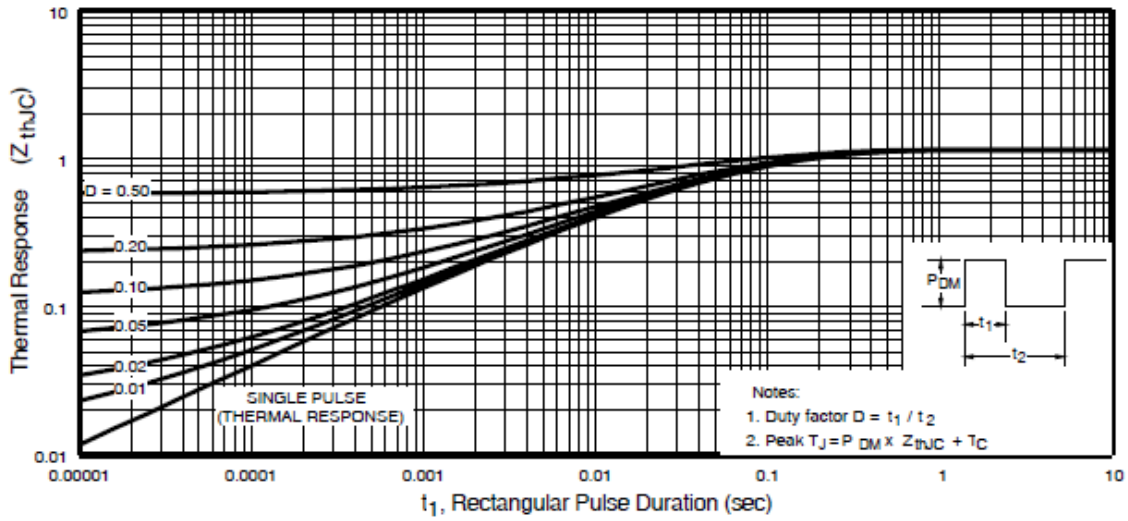


Fig 4. Max. Thermal Impedance Z_{thJC} Characteristics

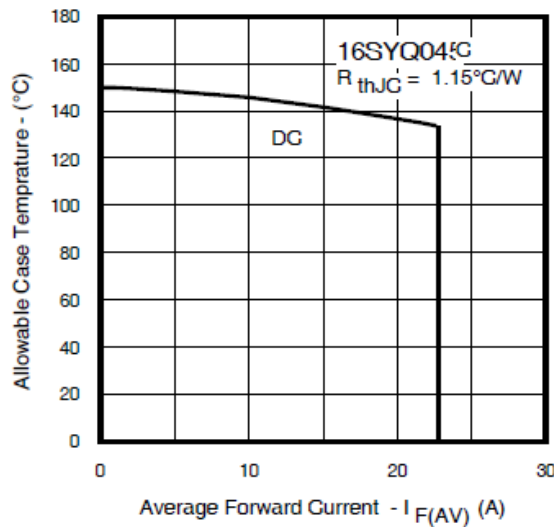


Fig 5. Max. Allowable Case Temperature Vs. Average Forward Current

IMPORTANT NOTICE

The information given in this document shall be in no event regarded as guarantee of conditions or characteristic. The data contained herein is a characterization of the component based on internal standards and is intended to demonstrate and provide guidance for typical part performance. It will require further evaluation, qualification and analysis to determine suitability in the application environment to confirm compliance to your system requirements.

With respect to any example hints or any typical values stated herein and/or any information regarding the application of the product, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind including without limitation warranties on non- infringement of intellectual property rights and any third party.

In addition, any information given in this document is subject to customer's compliance with its obligations stated in this document and any applicable legal requirements, norms and standards concerning customer's product and any use of the product of Infineon Technologies in customer's applications.

The data contained in this document is exclusively intended for technically trained staff. It is the responsibility of any customer's technical departments to evaluate the suitability of the product for the intended applications and the completeness of the product information given in this document with respect to applications.

For further information on the product, technology, delivery terms and conditions and prices, please contact your local sales representative or go to (www.infineon.com/hirel).

WARNING

Due to technical requirements products may contain dangerous substances. For information on the types in question, please contact your nearest Infineon Technologies office.