

**SCHOTTKY RECTIFIER
HIGH EFFICIENCY SERIES**

16 Amp. 45V

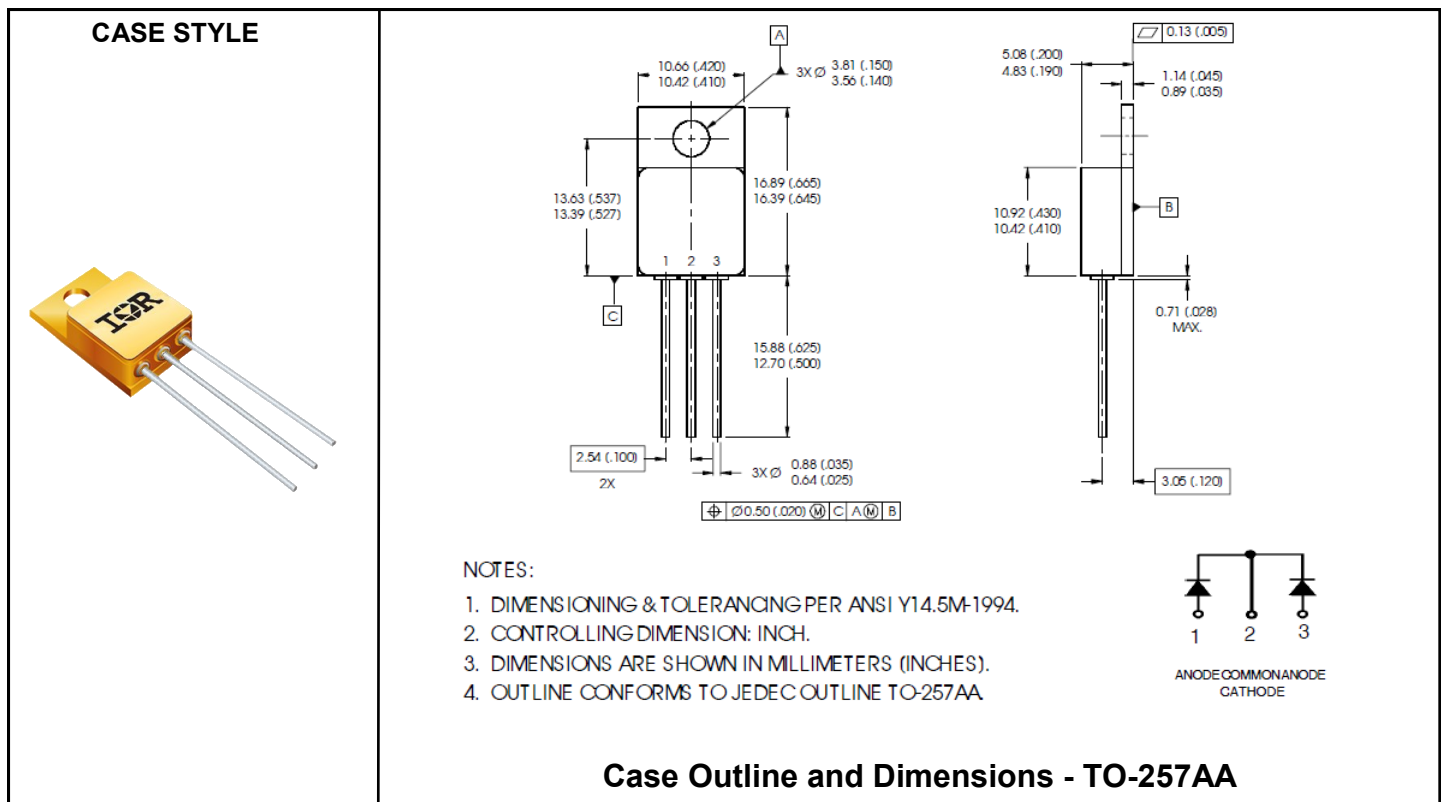
Major Ratings and Characteristics

Characteristics	16SCYQ045C	Units
$I_{F(AV)}$	16	A
V_{RRM} (Per Leg)	45	V
I_{FSM} @ $t_p = 8.3ms$ half-sine (Per Leg)	150	A
V_F @ $I_F = 16Apk, T_J = 125^\circ C$ (Per Leg)	0.62	V
T_J, T_{STG} Operating and storage	-55 to 150	$^\circ C$

Description/Features

The 16SCYQ045C center tap Schottky rectifier has been expressly designed to meet the rigorous requirements of hirel environments. It is packaged in the hermetic isolated TO-257AA 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 quality 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	16SCYQ045C
V_R DC Reverse Voltage (V), maximum (Per Leg)	45
V_{RRM} Working Peak Reverse Voltage (V), maximum (Per Leg)	

Absolute Maximum Ratings

Parameter	Limits	Units	Conditions
$I_{F(AV)}$ Maximum Average Forward Current See Fig. 5	16	A	50% duty cycle @ $T_C = 134^\circ\text{C}$, square waveform
I_{FSM} Maximum Peak One Cycle Non - Repetitive Surge Current (Per Leg)	150	A	$t_p = 8.3$ ms half-sine

Electrical Specifications

Parameter	Limits	Units	Conditions		
V_{FM} Maximum Forward Voltage Drop (Per Leg) See Fig. 1①	0.57	V	$I_F = 8.0\text{A}$	$T_J = -55^\circ\text{C}$	
	0.67	V	$I_F = 16\text{A}$		
	0.50	V	$I_F = 8.0\text{A}$	$T_J = 25^\circ\text{C}$	
	0.64	V	$I_F = 16\text{A}$		
	I_{RM} Maximum Reverse Leakage Current (Per Leg) See Fig. 2①	0.42	V	$I_F = 8.0\text{A}$	$T_J = 125^\circ\text{C}$
		0.62	V	$I_F = 16\text{A}$	
0.4		mA	$T_J = 25^\circ\text{C}$	$V_R = \text{rated } V_R$	
	70	mA	$T_J = 100^\circ\text{C}$		
	190	mA	$T_J = 125^\circ\text{C}$		
C_J Maximum Junction Capacitance (Per Leg)	1400	pF	$V_R = 5V_{DC}$ (1MHz, 25°C)		
L_S Typical Series Inductance (Per Leg)	6.9	nH	Measured from anode lead to cathode lead 6mm (0.025 in.) from package		

Thermal-Mechanical Specifications

Parameter	Limits	Units	Conditions
T_J Maximum Junction Temperature Range	-55 to 150	$^\circ\text{C}$	
T_{stg} Maximum Storage Temperature Range	-55 to 150	$^\circ\text{C}$	
R_{thJC} Maximum Thermal Resistance, Junction to Case (Per Leg)	1.6	$^\circ\text{C/W}$	DC operation See Fig. 4
R_{thJC} Maximum Thermal Resistance, Junction to Case (Per Package)	0.8	$^\circ\text{C/W}$	DC operation
Wt Weight, typical	4.3	g	
Die Size (Typical)	115X170	mils	
Case Style	T0-257AA		

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

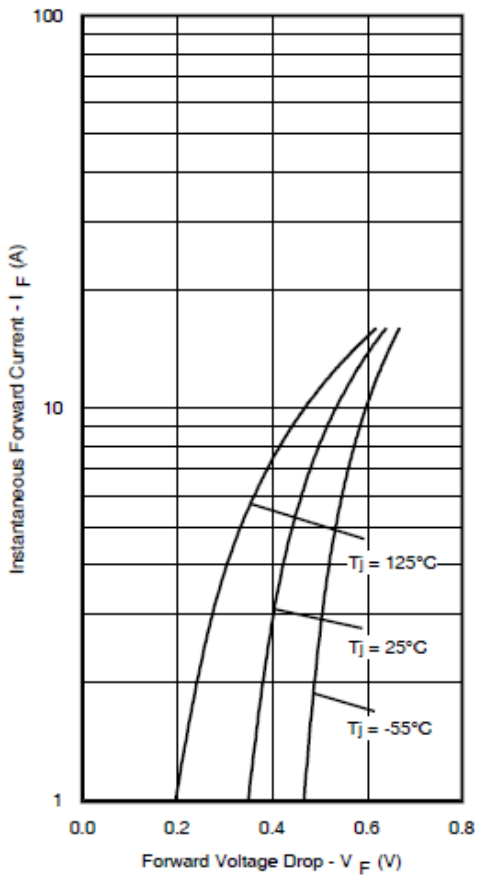


Fig 1. Max. Forward Voltage Drop Characteristics (Per Leg)

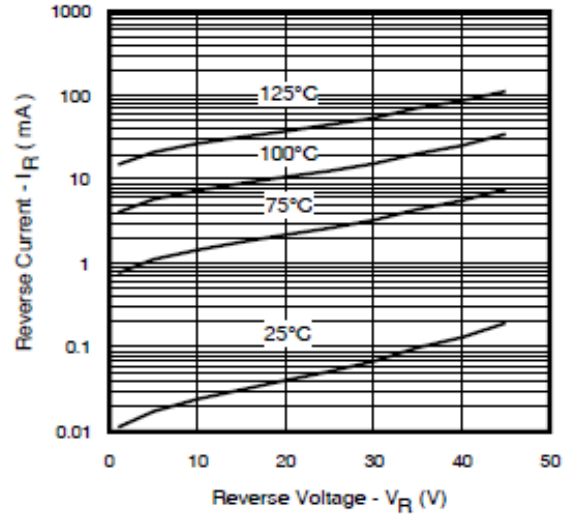


Fig 2. Typical Values of Reverse Current Vs. Reverse Voltage (Per Leg)

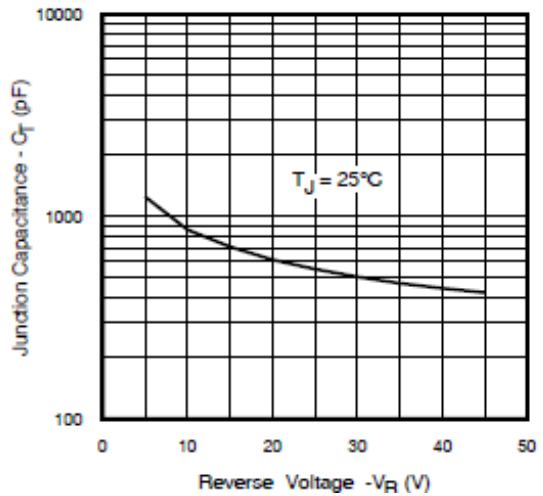


Fig 3. Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

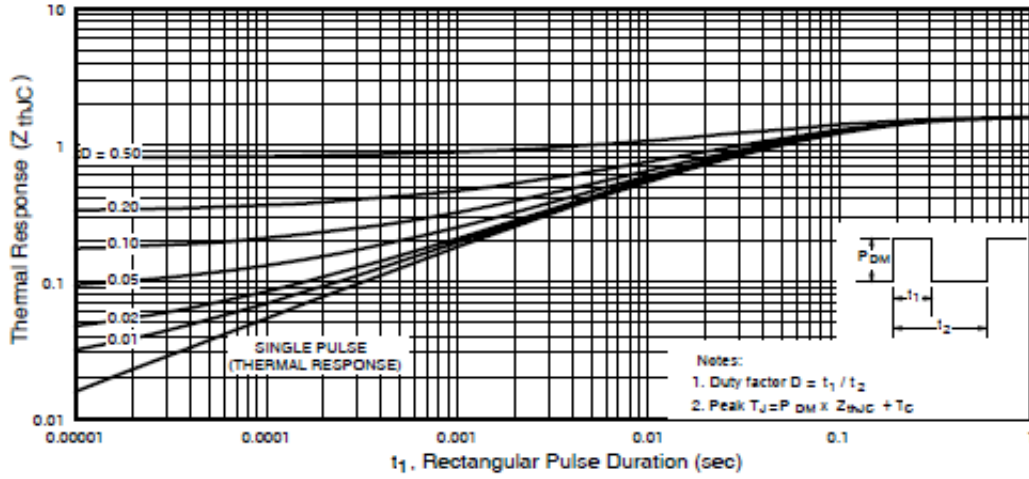


Fig 4. Max. Thermal Impedance Z_{thJC} Characteristics (Per Leg)

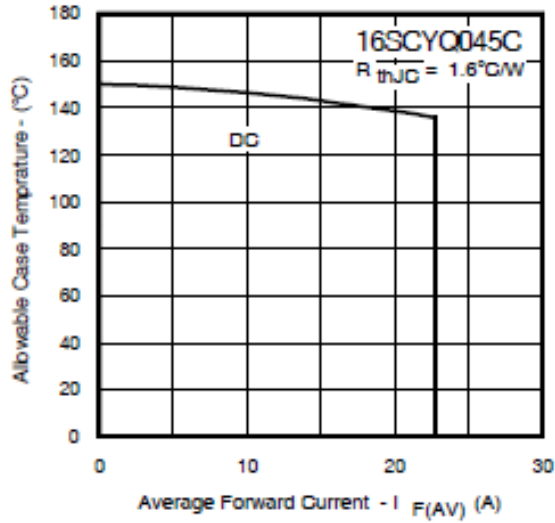


Fig 5. Max. Allowable Case Temperature Vs. Average Forward Current (Per Leg)

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