

SCHOTTKY RECTIFIER HIGH EFFICIENCY SERIES

16 Amp. 45V

Major Ratings and Characteristics

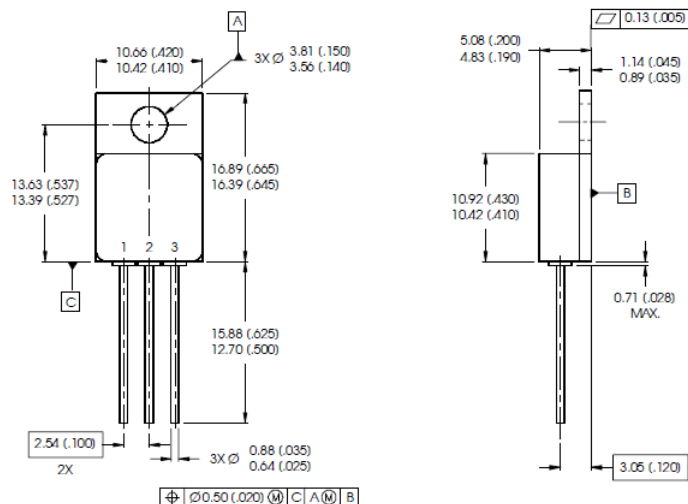
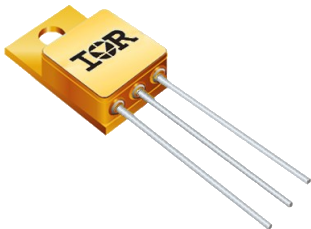
Characteristics	16SCYQ045C	Units
$I_{F(AV)}$	16	A
V_{RRM} (Per Leg)	45	V
I_{FSM} @ $t_p = 8.3ms$ half-sine (Per Leg)	150	A
V_F @ $I_F = 16A$, $T_J = 125^\circ C$ (Per Leg)	0.62	V
T_J, T_{STG} Operating and storage	-55 to 150	$^\circ C$

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.

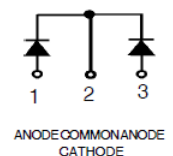
- Hermetically Sealed
- Ceramic Eyelets
- Low Forward Voltage Drop
- High Frequency Operation
- Guard Ring for Enhanced Ruggedness and Long term Reliability
- Lightweight

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	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°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 = 8.0A
	0.67	V	I _F = 16A
	0.50	V	I _F = 8.0A
	0.64	V	I _F = 16A
	0.42	V	I _F = 8.0A
	0.62	V	I _F = 16A
I _{RM} Maximum Reverse Leakage Current (Per Leg) See Fig. 2①	0.4	mA	T _J = 25°C
	70	mA	T _J = 100°C
	190	mA	T _J = 125°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	°C	
T _{stg} Maximum Storage Temperature Range	-55 to 150	°C	
R _{thJC} Maximum Thermal Resistance, Junction to Case (Per Leg)	1.6	°C/W	DC operation See Fig. 4
R _{thJC} Maximum Thermal Resistance, Junction to Case (Per Package)	0.8	°C/W	DC operation
Wt Weight, typical	4.3	g	
Die Size (Typical)	115X170	mils	
Case Style	T0-257AA		

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

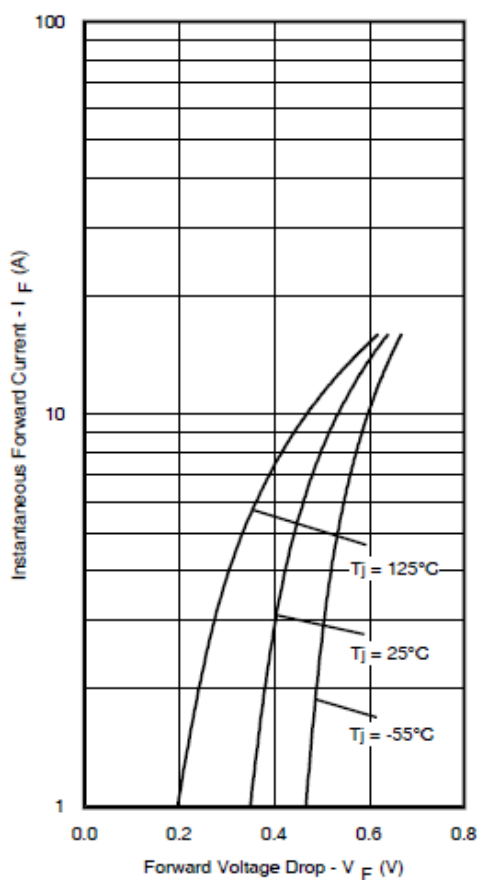


Fig 1. Max. Forward Voltage Drop Characteristics (Per Leg)

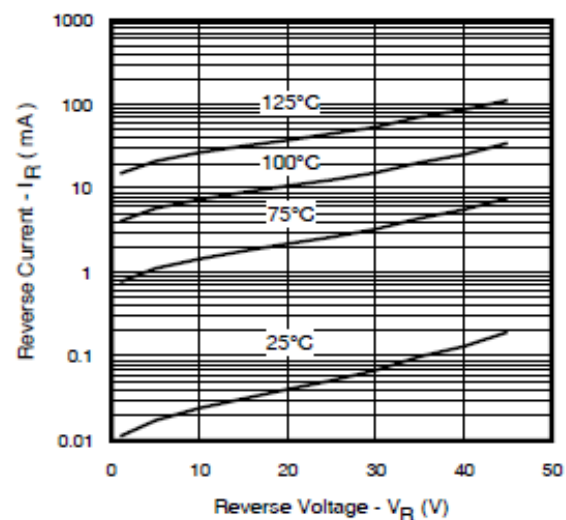


Fig 2. Typical Values of Reverse Current Vs. Reverse Voltage (Per Leg)

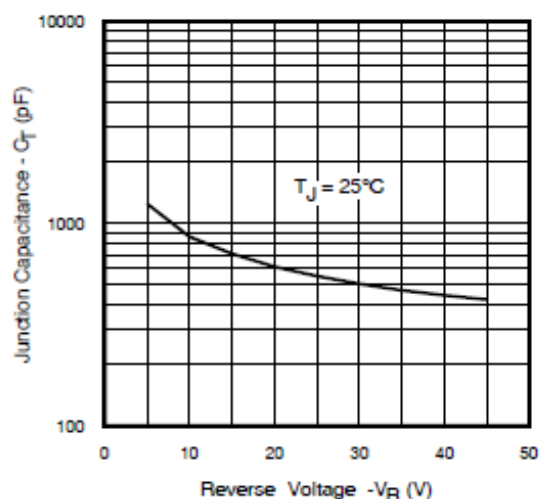


Fig 3. Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

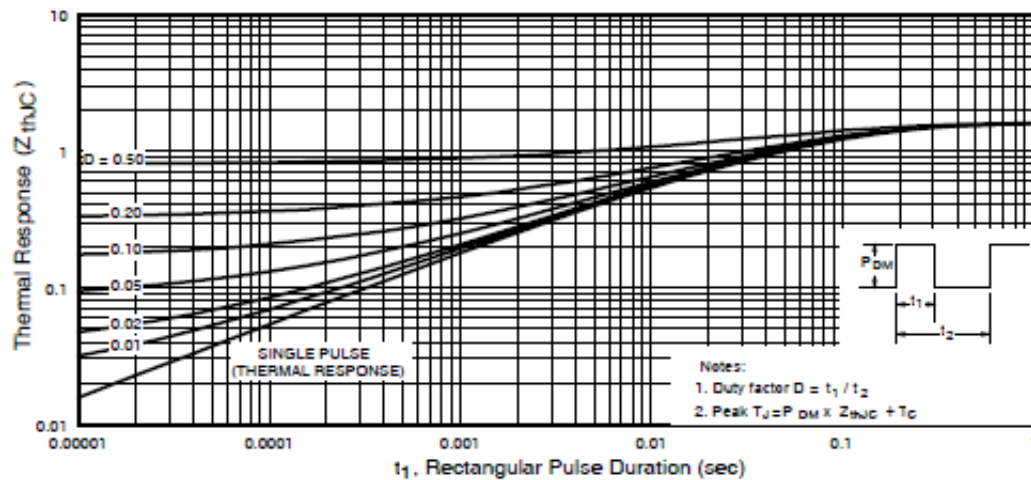


Fig 4. Max. Thermal Impedance Z_{thJC} Characteristics (Per Leg)

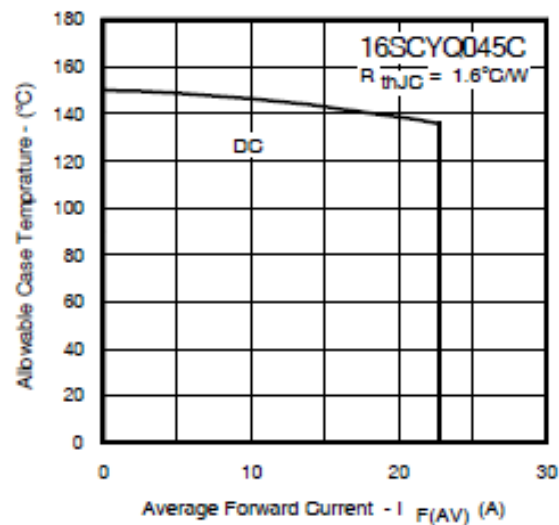


Fig 5. Max. Allowable Case Temperature Vs. Average Forward Current (Per Leg)

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