PD-93980A

International
IOR Rectifier

SCHOTTKY RECTIFIER
HIGH EFFICIENCY SERIES

16SCYQ045C

16 Amp, 45V

Major Ratings and Characteristics

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

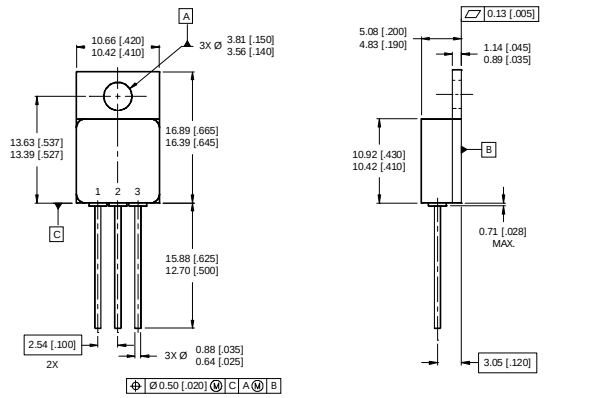
Description/Features

The 16SCYQ045C center tap Schottky rectifier has been expressly designed to meet the rigorous requirements of hi-rel 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 resonent power converters. Full MIL-PRF-19500 quality conformance testing is available on source control drawings to TX, TXV and S quality levels.

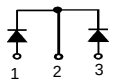
- Hermetically Sealed
- Ceramic Eyelets
- Low Forward Voltage Drop
- High Frequency Operation
- Guard Ring for Enhanced Ruggedness and Long term Reliability
- Lightweight

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.



IR Case Style TO-257AA

01/02/02

Voltage Ratings

	Part number	16SCYQ045C
V_R	Max. DC Reverse Voltage (V) (Per Leg)	45
V_{RWM}	Max. Working Peak Reverse Voltage (V) (Per Leg)	

Absolute Maximum Ratings

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

Electrical Specifications

	Parameters	Limits	Units	Conditions	
V_{FM}	Max. Forward Voltage Drop (Per Leg) See Fig. 1①	0.57	V	@ 8.0A	T_J = -55°C
		0.67	V	@ 16A	
		0.50	V	@ 8.0A	T_J = 25°C
		0.64	V	@ 16A	
		0.42	V	@ 8.0A	T_J = 125°C
		0.62	V	@ 16A	
I_{RM}	Max. Reverse Leakage Current (Per Leg) See Fig. 2①	0.4	mA	T_J = 25°C	V_R = rated V_R
		70	mA	T_J = 100°C	
		160	mA	T_J = 125°C	
C_T	Max. 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

	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 (Per Leg)	1.6	°C/W	DC operation See Fig. 4
R_{thJC}	Max. 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%

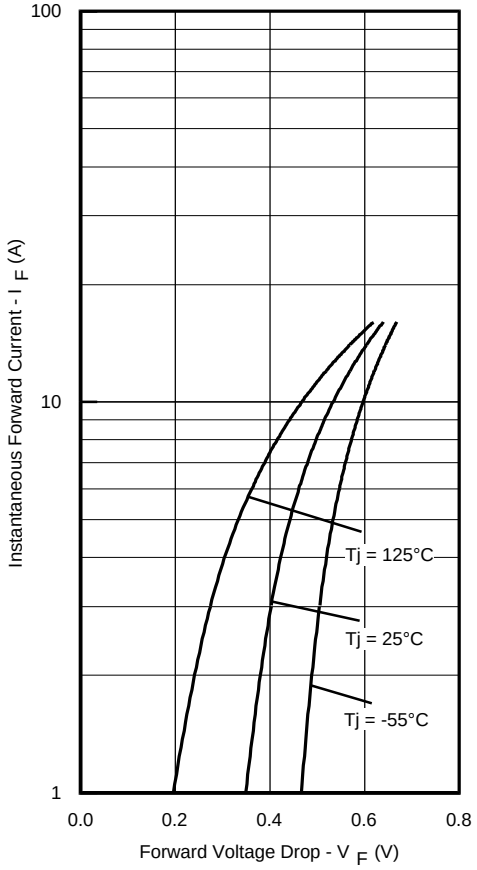


Fig. 1 - Max. Forward Voltage Drop Characteristics (Per Leg)

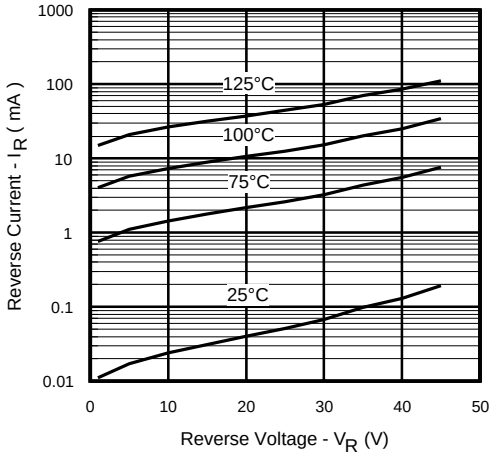


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage (Per Leg)

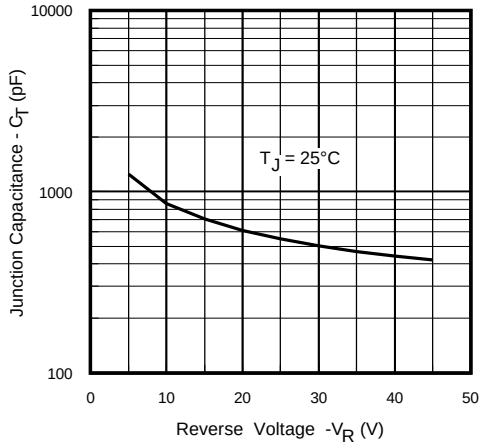


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

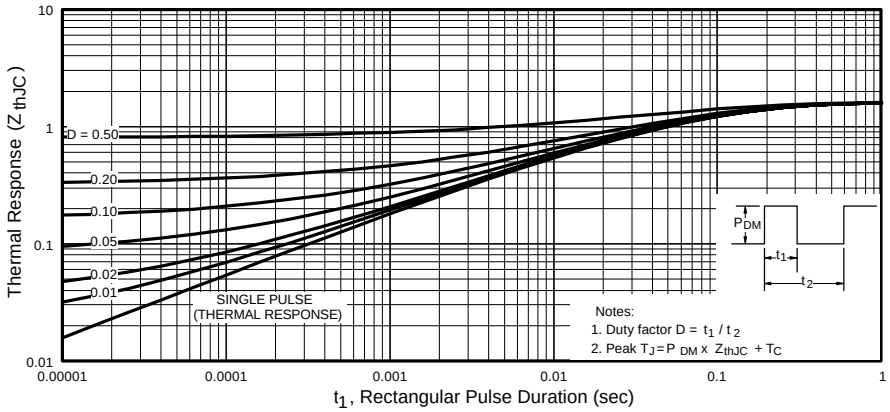


Fig. 4 - Max. Thermal Impedance Z_{thJC} Characteristics (Per Leg)

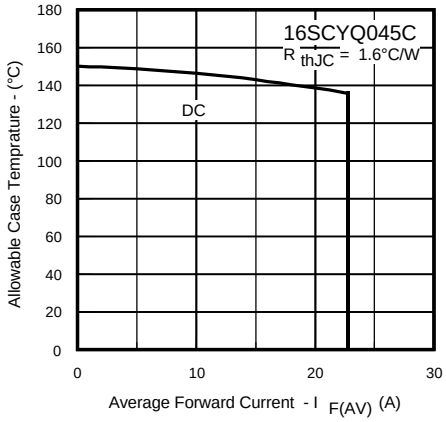


Fig. 5 - Max. Allowable Case Temperature Vs.
Average Forward Current (Per Leg)

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Data and specifications subject to change without notice. 01/02