

International
IR Rectifier

PD-93964A

SCHOTTKY RECTIFIER
HIGH EFFICIENCY SERIES

16SCYQ030C
16 Amp, 30V

Major Ratings and Characteristics

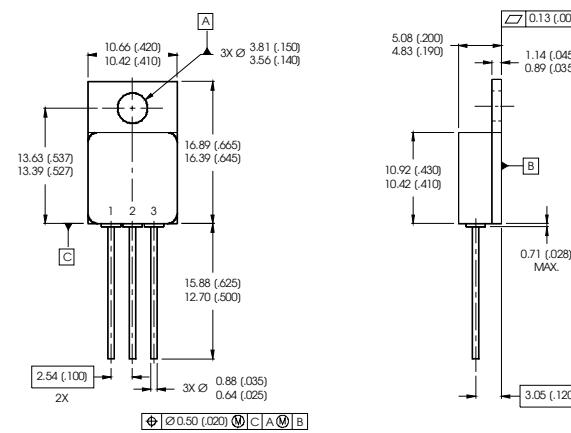
Characteristics	Limits	Units
I _{F(AV)}	16	A
V _{RRM} (Per Leg)	30	V
I _{FSM} @ t _p = 8.3ms half-sine (Per Leg)	150	A
V _F @ 16Apk, T _J = 125°C (Per Leg)	0.54	V
T _J , T _{stg} Operating and storage	-55 to 150	°C

Description / Features

The 16SCYQ030C center tap Schottky rectifier has been expressly designed to meet the rigorous requirements of high reliability 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.

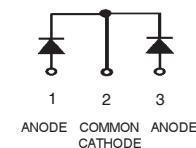
- Hermetically Sealed
- Center Tap
- Ceramic Eyelets
- Low Forward Voltage Drop
- High Frequency Operation
- Guard Ring for Enhanced Ruggedness and Long term Reliability
- Lightweight

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	16SCYQ030C		
V_R Max. DC Reverse Voltage (V) (Per Leg)	30		
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 @ $T_C = 138^\circ\text{C}$, square waveform
I_{FSM} Max. Peak One Cycle Non - Repetitive Surge Current (Per Leg)	150	A	@ $t_p = 8.3 \text{ ms}$ half-sine

Electrical Specifications

Parameters	Limits	Units	Conditions	
V_{FM} Max. Forward Voltage Drop (Per Leg) See Fig. 1①	0.57	V	@ 7.5A	$T_J = -55^\circ\text{C}$ ②
	0.65	V		
	0.66	V		
	0.48	V		
	0.58	V	@ 15A	$T_J = 25^\circ\text{C}$ ②
	0.60	V		
	0.365	V	@ 16A	$T_J = 125^\circ\text{C}$ ②
	0.52	V		
I_{RM} Max. Reverse Leakage Current (Per Leg) See Fig. 2①	0.54	V		
	1.0	mA	$T_J = 25^\circ\text{C}$	$V_R = \text{rated } V_R$ ②
	117	mA	$T_J = 100^\circ\text{C}$	
C_T Max. Junction Capacitance (Per Leg)	150	mA	$T_J = 125^\circ\text{C}$	$V_R = \text{rated } V_R$ ②
	1900	pF	$V_R = 5\text{V}_{\text{DC}}$ (1MHz, 25°C) ②	
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	DCoperation	See Fig. 4
R_{thPC} Max. Thermal Resistance, Junction to Case (Per Package)	0.8	°C/W	DCoperation	
wt Weight(Typical)	4.3	g		
Die Size (Typical)	115X170	mils		
Case Style	TO-257AA			

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

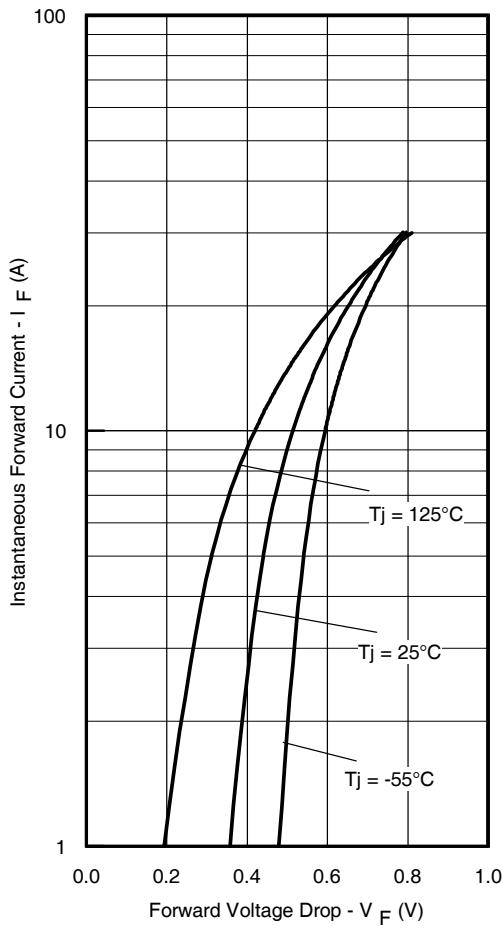


Fig. 1 - Max. Forward Voltage Drop Characteristics
 (Per Leg)

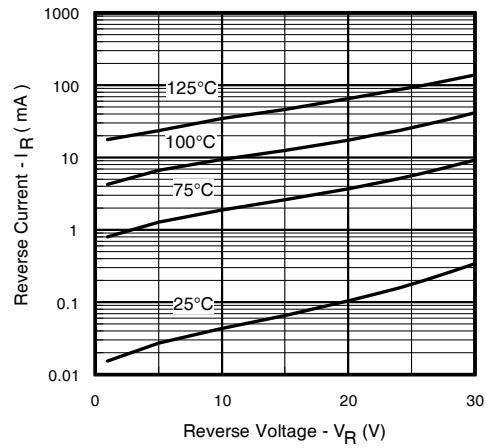


Fig. 2 - Typical Values of Reverse Current
 Vs. Reverse Voltage (Per Leg)

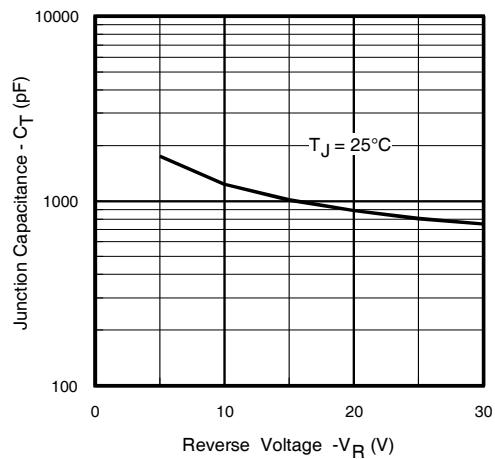
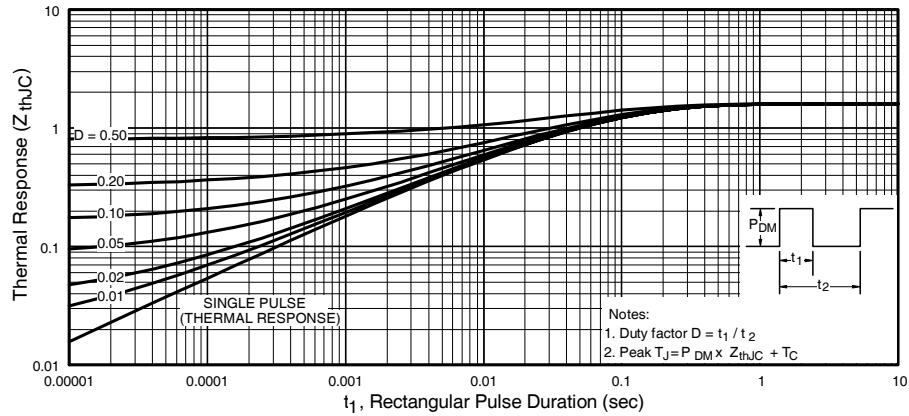
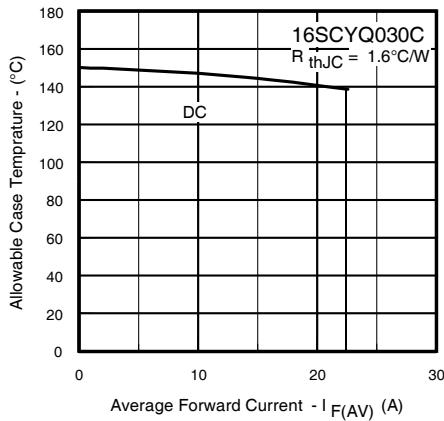


Fig. 3 - Typical Junction Capacitance Vs.
 Reverse Voltage (Per Leg)

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. 02/2008