

**SCHOTTKY RECTIFIER  
HIGH EFFICIENCY SERIES**

**16 Amp. 30V**

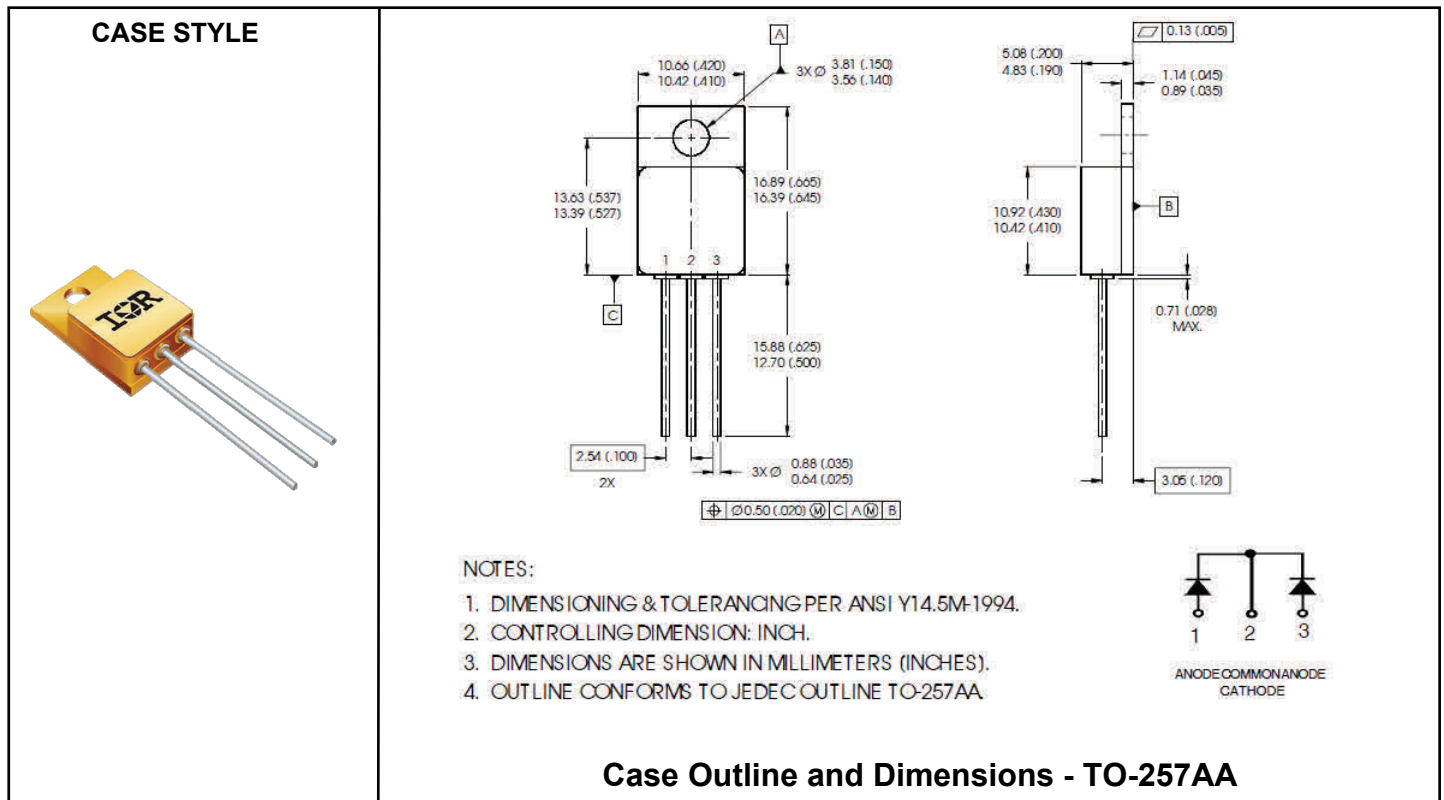
**Major Ratings and Characteristics**

Characteristics	16SCYQ045C	Units
$I_{F(AV)}$ (Per Leg)	16	A
$V_{RRM}$ (Per Leg)	30	V
$I_{FSM}$ @ $t_p = 8.3ms$ half-sine (Per Leg)	150	A
$V_F$ @ $I_F = 16A_{pk}$ , $T_J = 125^\circ C$ (Per Leg)	0.54	V
$T_J, T_{STG}$ Operating and storage	-55 to 150	$^\circ C$

**Description/Features**

The 16SCYQ030C 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
- Center Tap
- Ceramic Eyelets
- Low Forward Voltage Drop
- High Frequency Operation
- Guard Ring for Enhanced Ruggedness and Long term Reliability
- Lightweight



**Voltage Ratings**

Part Number	16SCYQ030C
$V_R$ DC Reverse Voltage (V), maximum (Per Leg)	30
$V_{RRM}$ 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 (Per Leg)	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

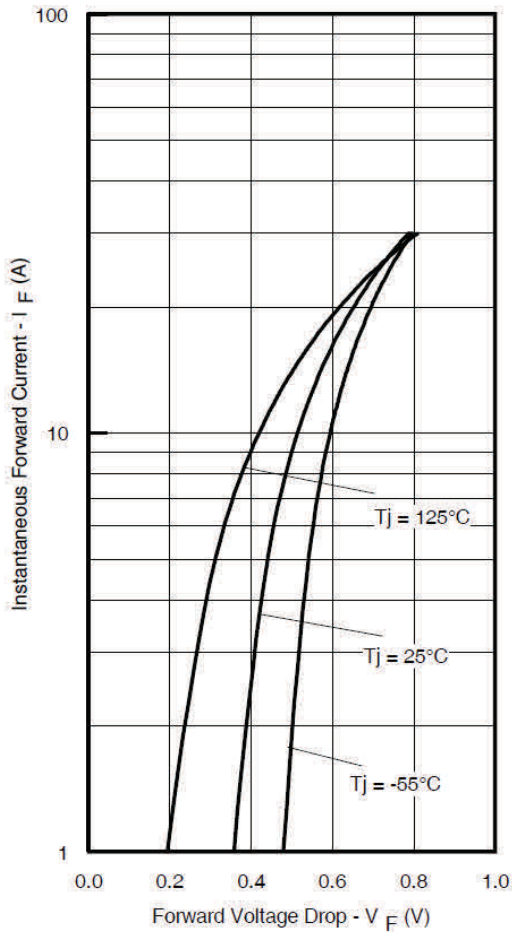
**Electrical Specifications**

Parameter	Limits	Units	Conditions		
$V_{FM}$ Maximum Forward Voltage Drop (Per Leg) See Fig. 1①	0.57	V	$I_F = 7.5\text{A}$	$T_J = -55^\circ\text{C}$	
	0.65	V	$I_F = 15\text{A}$		
	0.66	V	$I_F = 16\text{A}$		
		0.48	V	$I_F = 7.5\text{A}$	$T_J = 25^\circ\text{C}$
		0.58	V	$I_F = 15\text{A}$	
		0.60	V	$I_F = 16\text{A}$	
		0.365	V	$I_F = 7.5\text{A}$	
		0.52	V	$I_F = 15\text{A}$	$T_J = 125^\circ\text{C}$
		0.54	V	$I_F = 16\text{A}$	
$I_{RM}$ Maximum Reverse Leakage Current (Per Leg) See Fig. 2①		1.0	mA	$T_J = 25^\circ\text{C}$	
	117	mA	$T_J = 100^\circ\text{C}$		
	200	mA	$T_J = 125^\circ\text{C}$		
$C_J$ Maximum Junction Capacitance (Per Leg)	1900	pF	$V_R = 5V_{DC}$ (1MHz, $25^\circ\text{C}$ )		
$L_S$ Typical Series Inductance (Per Leg)	6.9	nH	Measured from anode lead to cathode lead 6mm ( 0.025 in.) from package		

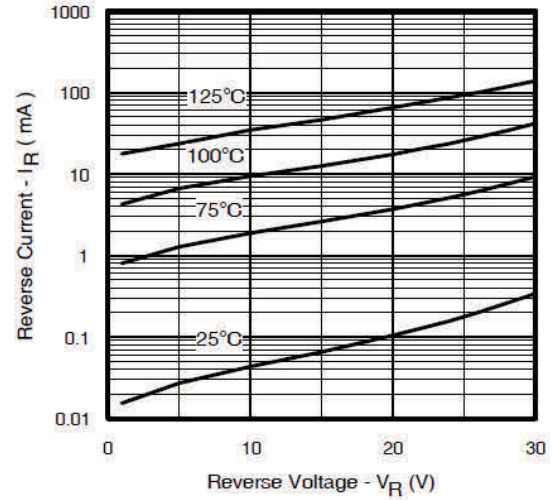
**Thermal-Mechanical Specifications**

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		

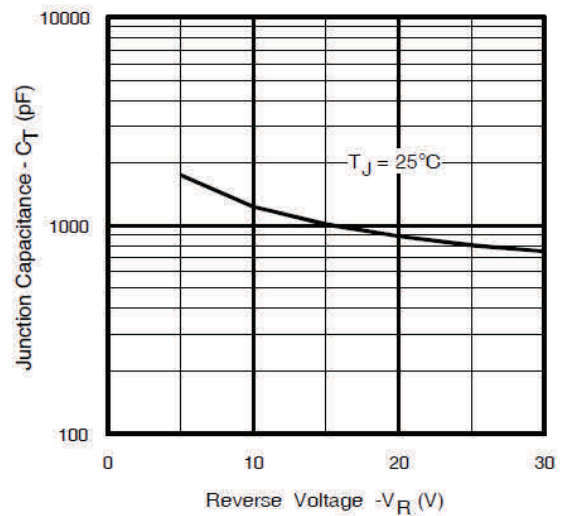
① Pulse Width < 300 $\mu\text{s}$ , Duty Cycle < 2%.



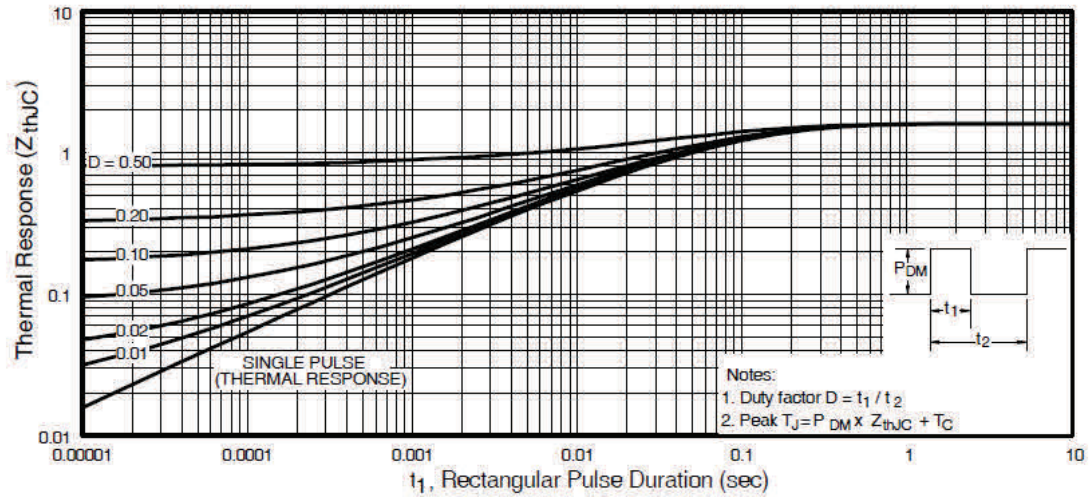
**Fig 1.** Max. Forward Voltage Drop Characteristics (Per Leg)



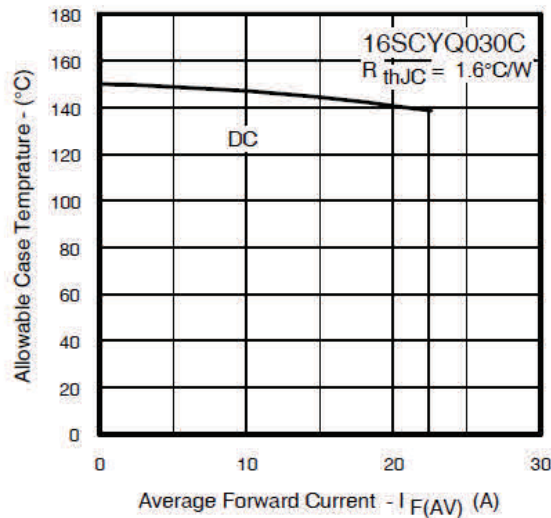
**Fig 2.** Typical Values of Reverse Current Vs. Reverse Voltage (Per Leg)



**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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