

**SCHOTTKY RECTIFIER**  
HIGH EFFICIENCY SERIES

**16SYQ030C**  
16A, 30V

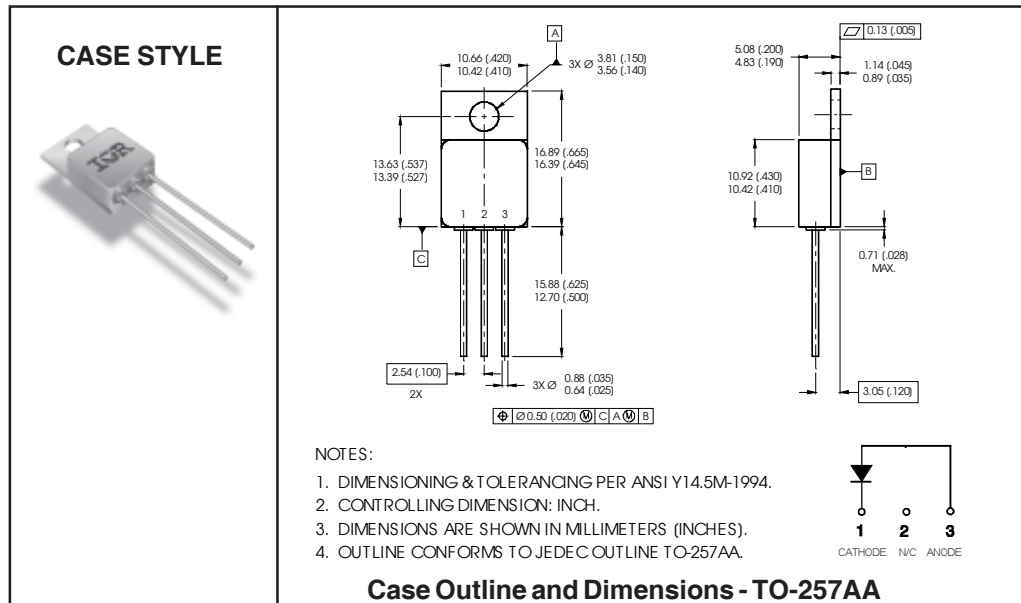
**Major Ratings and Characteristics**

Characteristics	16SYQ030C	Units
$I_{F(AV)}$	16	A
$V_{RRM}$	30	V
$I_{FSM}$ @ $t_p = 8.3ms$ half-sine	300	A
$V_F$ @ 16Apk, $T_J = 125^\circ C$	0.49	V
$T_J, T_{STG}$ Operating and storage	-55 to 150	$^\circ C$

**Description/Features**

The 16SYQ030C Schottky rectifier has been expressly designed to meet the rigorous requirements of HiRel environments. It is packaged in the hermetic isolated TO-257AA ceramic 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 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	16SYQ030C
V <sub>R</sub> Max. DC Reverse Voltage (V)	30
V <sub>RWM</sub> Max. Working Peak Reverse Voltage (V)	

**Absolute Maximum Ratings**

Parameters	Limits	Units	Conditions
I <sub>F(AV)</sub> Max. Average Forward Current See Fig. 5	16	A	50% duty cycle @ T <sub>C</sub> = 133°C, square waveform
I <sub>FSM</sub> Max. Peak One Cycle Non - Repetitive Surge Current	300	A	@ t <sub>p</sub> = 8.3 ms half-sine

**Electrical Specifications**

Parameters	Limits	Units	Conditions
V <sub>FM</sub> Max. Forward Voltage Drop See Fig. 1 <sup>①</sup>	0.55	V	@ 10A T <sub>J</sub> = -55°C
	0.61	V	@ 16A
	0.47	V	@ 10A T <sub>J</sub> = 25°C
	0.55	V	@ 16A
	0.38	V	@ 10A T <sub>J</sub> = 125°C
	0.49	V	@ 16A
I <sub>RM</sub> Max. Reverse Leakage Current See Fig. 2 <sup>①</sup>	1.0	mA	T <sub>J</sub> = 25°C V <sub>R</sub> = rated V <sub>R</sub>
	300	mA	T <sub>J</sub> = 125°C
C <sub>T</sub> Max. Junction Capacitance	4000	pF	V <sub>R</sub> = 5V <sub>DC</sub> (1MHz, 25°C)
L <sub>S</sub> Typical Series Inductance	9.8	nH	Measured from anode lead to cathode lead 6mm ( 0.025 in.) from package

**Thermal-Mechanical Specifications**

Parameters	Limits	Units	Conditions
T <sub>J</sub> Max. Junction Temperature Range	-55 to 150	°C	
T <sub>stg</sub> Max. Storage Temperature Range	-55 to 150	°C	
R <sub>thJC</sub> Max. Thermal Resistance, Junction to Case	1.15	°C/W	DC operation See Fig. 4
wt Weight (Typical)	4.3	g	
Die Size	200X200	mils	
Case Style	TO-257AA		

① Pulse Width &lt; 300μs, Duty Cycle &lt; 2%

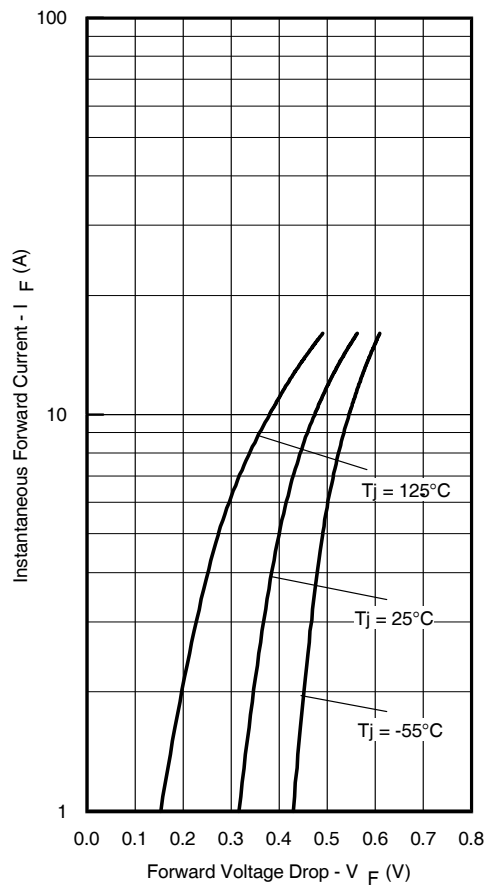


Fig. 1 - Max. Forward Voltage Drop Characteristics

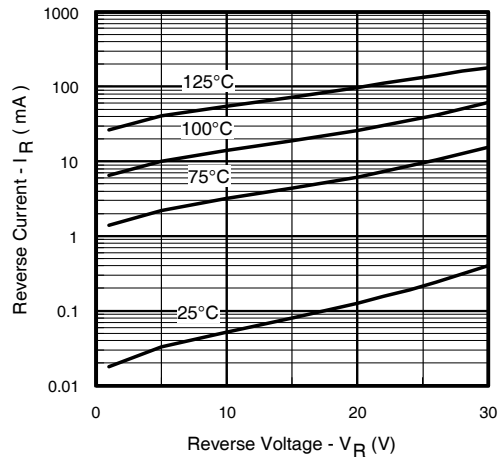


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

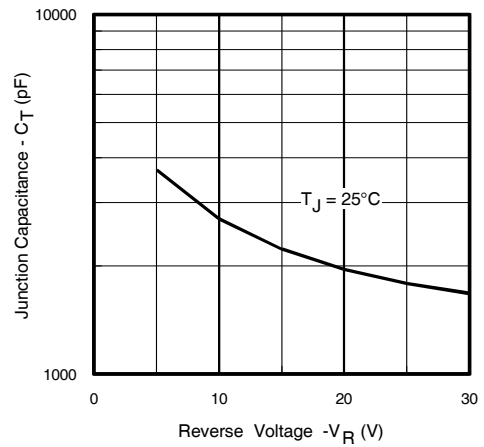


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

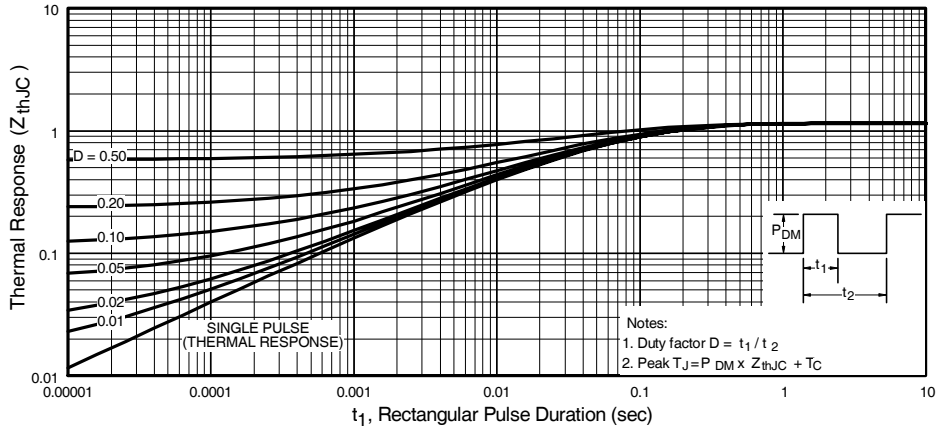


Fig. 4 - Max. Thermal Impedance  $Z_{thJC}$  Characteristics

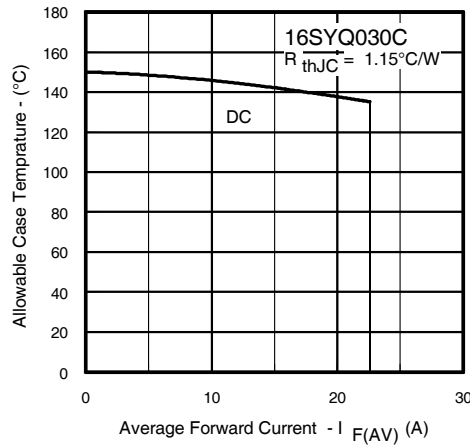


Fig. 5 - Max. Allowable Case Temperature Vs. Average Forward Current