

SCHOTTKY RECTIFIER HIGH EFFICIENCY SERIES

16 Amp. 60V

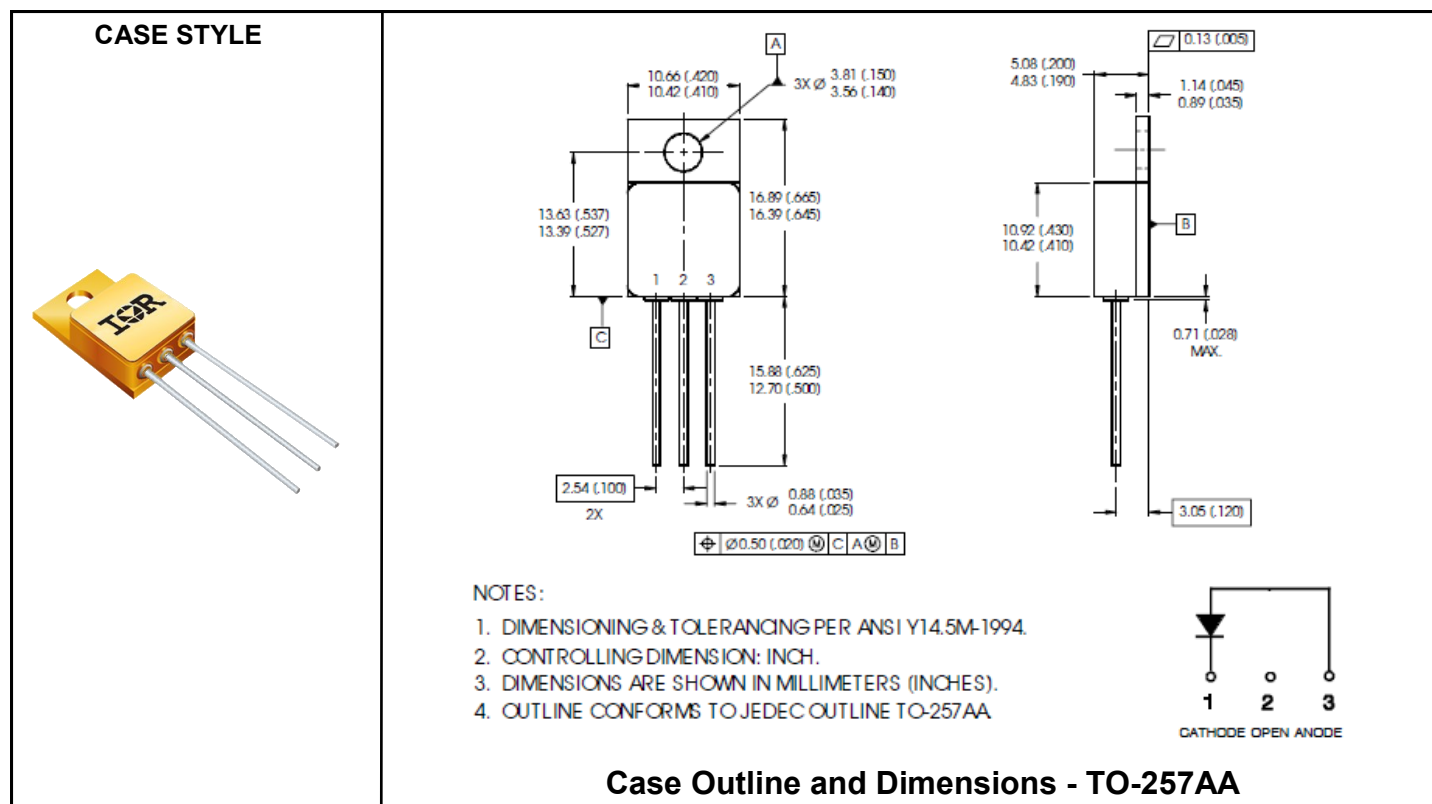
Major Ratings and Characteristics

Characteristics	16SYQ060C	Units
$I_{F(AV)}$	16	A
V_{RRM}	60	V
I_{FSM} @ $t_p = 8.3\text{ms}$ half-sine	250	A
V_F @ $I_F = 16\text{Apk}$, $T_J = 125^\circ\text{C}$	0.63	V
T_J , T_{STG} Operating and storage	-55 to 150	$^\circ\text{C}$

Description/Features

The 16SYQ060C 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 quality 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	16SYQ060C
V _R DC Reverse Voltage (V), maximum	60
V _{RRM} Working Peak Reverse Voltage (V), maximum	

Absolute Maximum Ratings

Parameter	Limits	Units	Conditions
I _{F(AV)} Maximum Average Forward Current See Fig. 5	16	A	50% duty cycle @ T _C = 125°C, square waveform
I _{FSM} Maximum Peak One Cycle Non - Repetitive Surge Current	250	A	tp = 8.3 ms half-sine

Electrical Specifications

Parameter	Limits	Units	Conditions
V _{FM} Maximum Forward Voltage Drop See Fig. 1 ①	0.66	V	I _F = 16A T _J = -55°C
	0.87	V	I _F = 32A T _J = -55°C
	0.65	V	I _F = 16A T _J = 25°C
	0.94	V	I _F = 32A T _J = 25°C
	0.63	V	I _F = 16A T _J = 125°C
	1.04	V	I _F = 32A T _J = 125°C
I _{RM} Maximum Reverse Leakage Current See Fig. 2 ①	0.5	mA	T _J = 25°C V _R = rated V _R
	50	mA	T _J = 100°C V _R = rated V _R
	275	mA	T _J = 125°C V _R = rated V _R
C _J Maximum Junction Capacitance	2100	pF	V _R = 5V _{DC} (1MHz, 25°C)
L _S Typical Series Inductance	9.8	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	1.15	°C/W	DC operation See Fig. 4
Wt Weight, typical	4.3	g	
Die Size (Typical)	200 X 200	mils	
Case Style	T0-257AA		

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

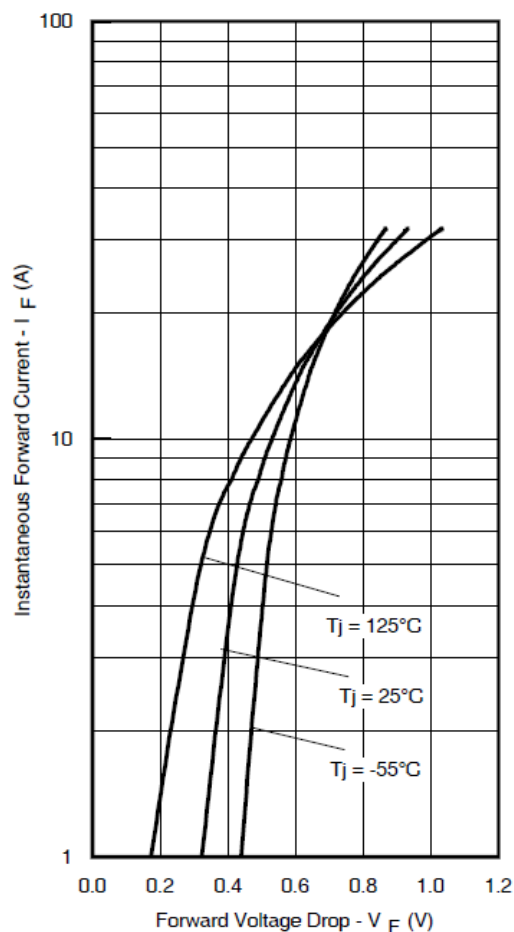


Fig 1. Max. Forward Voltage Drop Characteristics

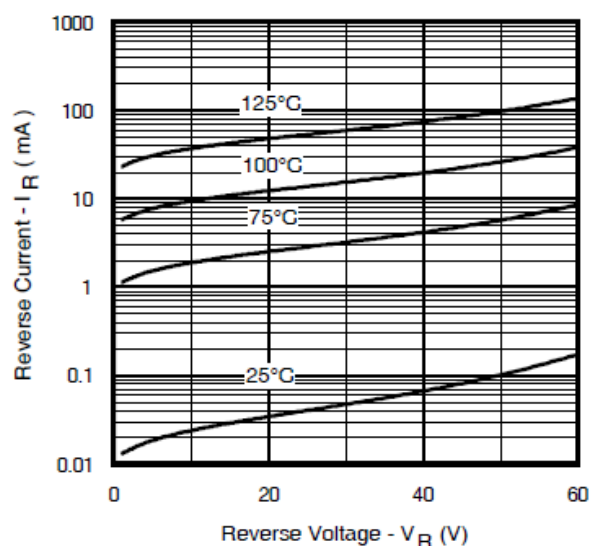


Fig 2. Typical Values of Reverse Current Vs. Reverse Voltage

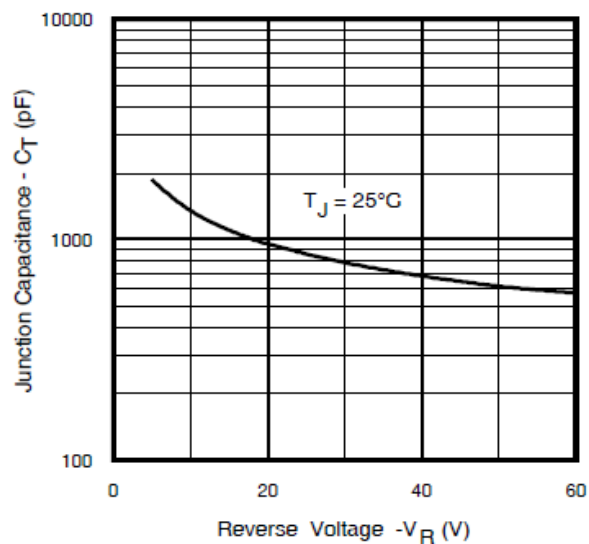


Fig 3. Typical Junction Capacitance Vs. Reverse Voltage

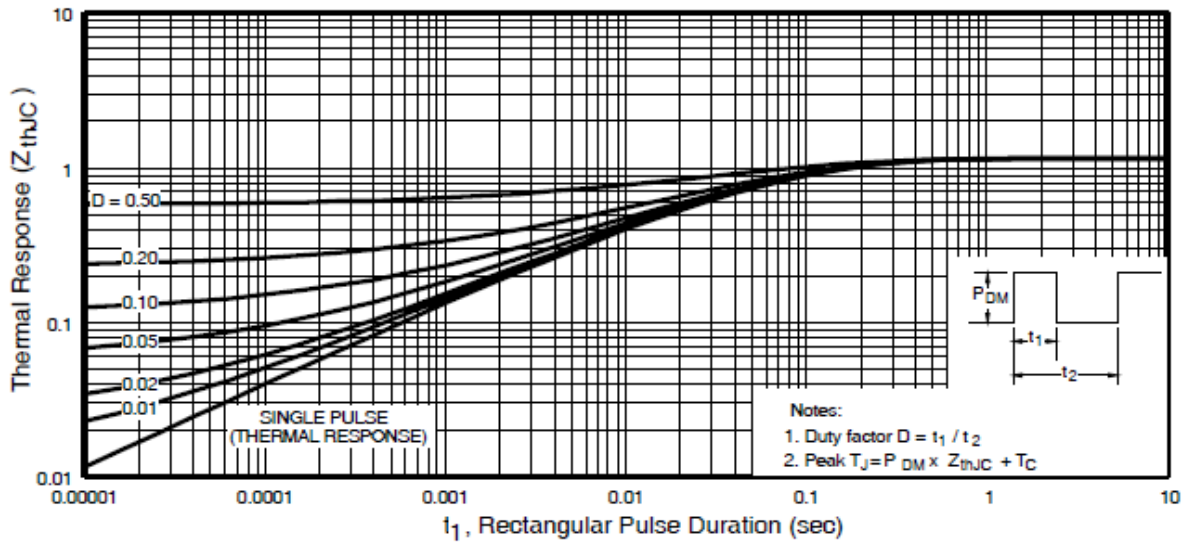


Fig 4. Max. Thermal Impedance Z_{thJC} Characteristics

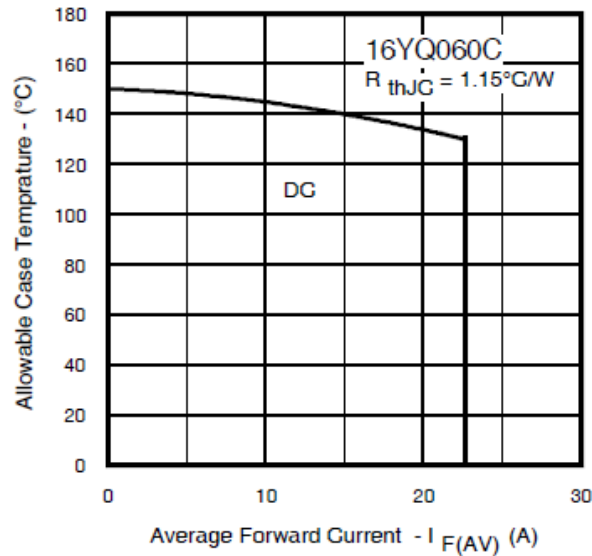


Fig 5. Max. Allowable Case Temperature Vs. Average Forward Current

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The information given in this document shall be in no event regarded as guarantee of conditions or characteristic. The data contained herein is a characterization of the component based on internal standards and is intended to demonstrate and provide guidance for typical part performance. It will require further evaluation, qualification and analysis to determine suitability in the application environment to confirm compliance to your system requirements.

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