

**SCHOTTKY RECTIFIER**  
HIGH EFFICIENCY SERIES

**16SYJQ045C**  
16A, 45V

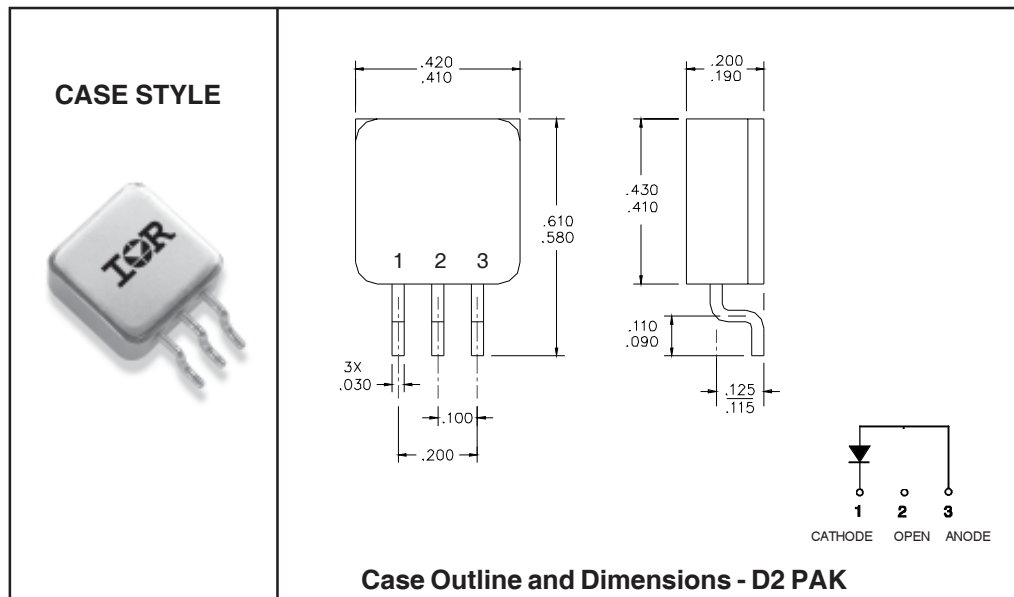
**Major Ratings and Characteristics**

Characteristics	Limits	Units
$I_{F(AV)}$	16	A
$V_{RRM}$	45	V
$I_{FSM}$ @ $t_p = 8.3ms$ half-sine	250	A
$V_F$ @ 16Apk, $T_J = 125^\circ C$	0.52	V
$T_J, T_{stg}$ Operating and storage	-55 to 150	$^\circ C$

**Description/Features**

The 16SYJQ045C Schottky rectifier has been expressly designed to meet the rigorous requirements of HiRel environments. It is packaged in the hermetic isolated D2 PAK 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
- Low Forward Voltage Drop
- High Frequency Operation
- Guard Ring for Enhanced Ruggedness and Long Term Reliability
- Lightweight



**Voltage Ratings**

Part number	16SYJQ045C
V <sub>R</sub> Max. DC Reverse Voltage (V)	45
V <sub>RWM</sub> Max. Working DC 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> = 117°C, square waveform
I <sub>FSM</sub> Max. Peak One Cycle Non - Repetitive Surge Current	250	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>	0.63	V	@ 16A T <sub>J</sub> = -55°C
	0.79	V	@ 32A T <sub>J</sub> = -55°C
	0.56	V	@ 16A T <sub>J</sub> = 25°C
	0.79	V	@ 32A T <sub>J</sub> = 25°C
	0.52	V	@ 16A T <sub>J</sub> = 125°C
I <sub>RM</sub> Max. Reverse Leakage Current See Fig. 2 <sup>①</sup>	0.74	mA	T <sub>J</sub> = 25°C V <sub>R</sub> = rated V <sub>R</sub>
	75	mA	T <sub>J</sub> = 100°C
	210	mA	T <sub>J</sub> = 125°C
C <sub>T</sub> Max. Junction Capacitance	2800	pF	V <sub>R</sub> = 5V <sub>DC</sub> ( 1MHz, 25°C )
L <sub>S</sub> Typ. Series Inductance	9.8	nH	Measured from Cathode lead to Anode lead 6mm (0.025in) 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	D2 PAK		

<sup>①</sup> Pulse Width < 300μs, Duty Cycle < 2%

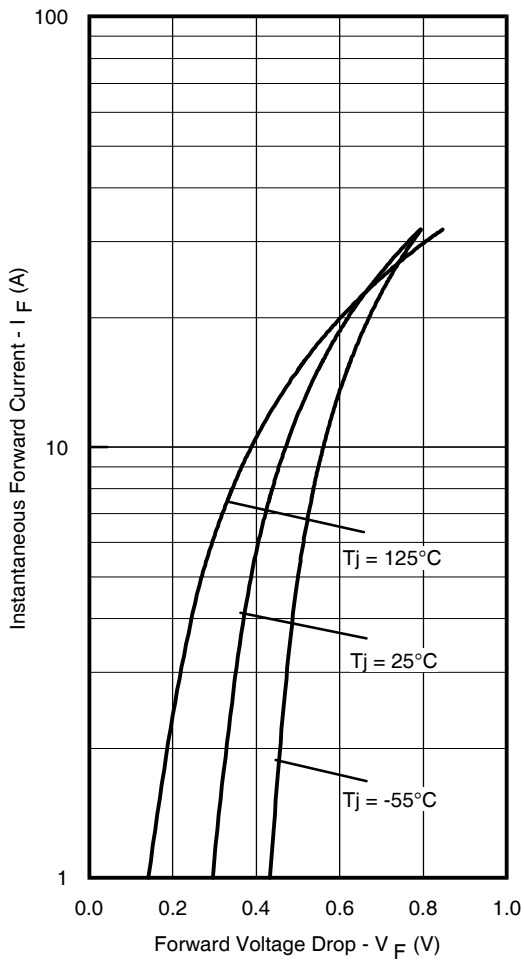


Fig. 1 - Max. Forward Voltage Drop Characteristics

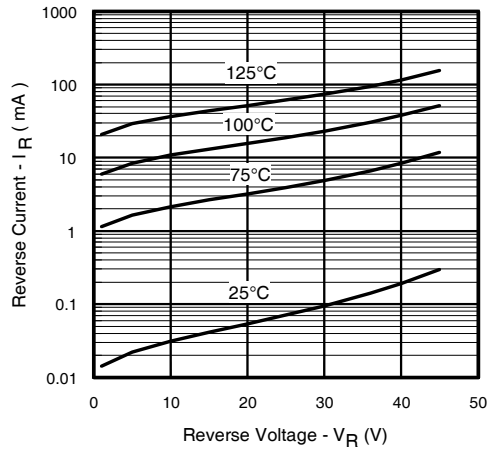


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

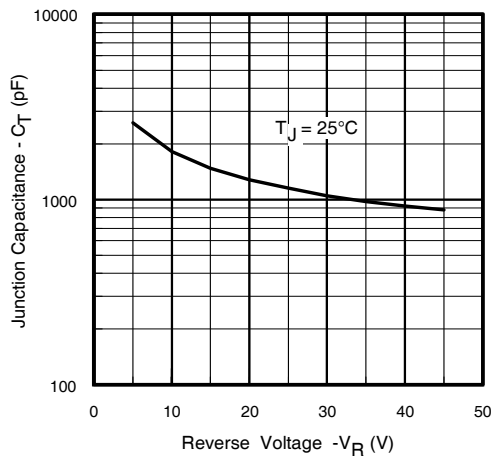


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

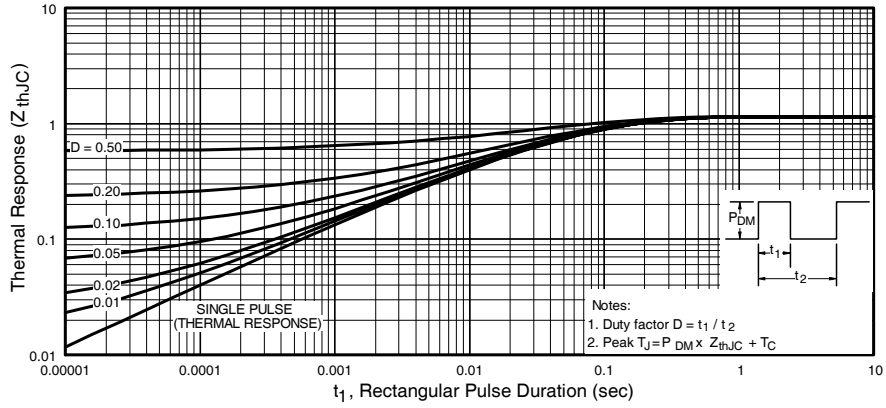


Fig. 4 - Max. Thermal Impedance  $Z_{thJC}$  Characteristics

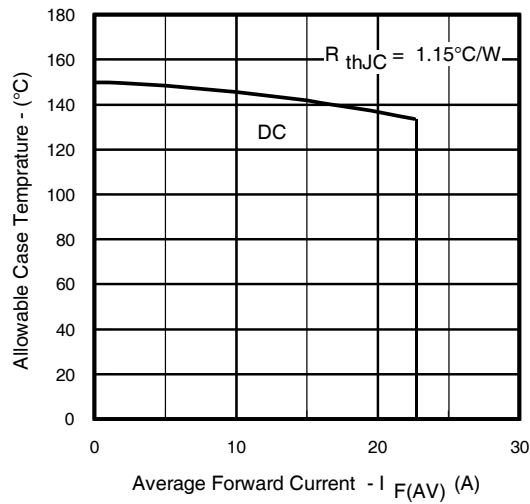


Fig. 5 - Max. Allowable Case Temperature Vs. Average Forward Current