

SCHOTTKY RECTIFIER
HIGH EFFICIENCY SERIES

5EQ100

8A, 100V

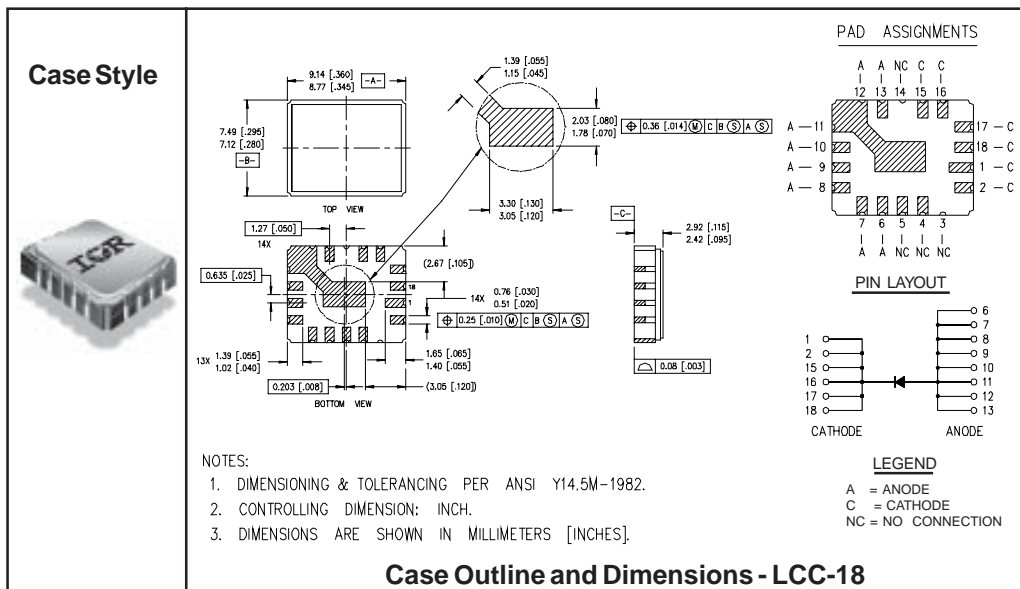
Major Ratings and Characteristics

Characteristics	5EQ100	Units
$I_{F(AV)}$	8.0	A
V_{RRM}	100	V
I_{FSM} @ $t_p = 8.3ms$ half-sine	250	A
V_F @ 8.0Apk, $T_J = 125^\circ C$	0.65	V
T_J, T_{stg} Operating and storage	-55 to 150	$^\circ C$

Description/Features

The 5EQ100 Schottky rectifier has been expressly designed to meet the rigorous requirements of hi-rel environments. It is packaged in the hermetic isolated LCC-18 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 controlled 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
- Surface Mount
- Lightweight



Voltage Ratings

Part number	5EQ100
V_R Max. DC Reverse Voltage (V)	100
V_{RWM} Max. Working Peak Reverse Voltage (V)	

Absolute Maximum Ratings

Parameters	Limits	Units	Conditions
$I_{F(AV)}$ Max. Average Forward Current See Fig. 5	8.0	A	50% duty cycle @ $T_C = 100^\circ\text{C}$, rectangular waveform
I_{FSM} Max. Peak One Cycle Non - Repetitive Surge Current	250	A	@ $t_p = 8.3$ ms half-sine

Electrical Specifications

Parameters	Limits	Units	Conditions	
V_{FM} Max. Forward Voltage Drop See Fig. 1 ①	0.8	V	@ 8.0A	$T_J = 25^\circ\text{C}$
	1.0	V	@ 16A	
	0.65	V	@ 8.0A	$T_J = 125^\circ\text{C}$
	0.7	V	@ 16A	
I_{RM} Max. Reverse Leakage Current See Fig. 2 ①	0.5	mA	$T_J = 25^\circ\text{C}$	$V_R = \text{rated } V_R$
	15	mA	$T_J = 125^\circ\text{C}$	
C_T Max. Junction Capacitance	600	pF	$V_R = 5V_{DC}$ (1MHz, 25°C)	
L_S Typical Series Inductance	4.3	nH	Measured from center of cathode pad to center of anode pad	

Thermal-Mechanical Specifications

Parameters	Limits	Units	Conditions
T_J Max. Junction Temperature Range	-55 to 150	$^\circ\text{C}$	
T_{stg} Max. Storage Temperature Range	-55 to 150	$^\circ\text{C}$	
R_{thJC} Max. Thermal Resistance, Junction to Case	6.0	$^\circ\text{C}/\text{W}$	DC operation See Fig. 4
wt Weight (Typical)	0.42	g	
Die Size	125X125	mils	
Case Style	LCC-18		

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

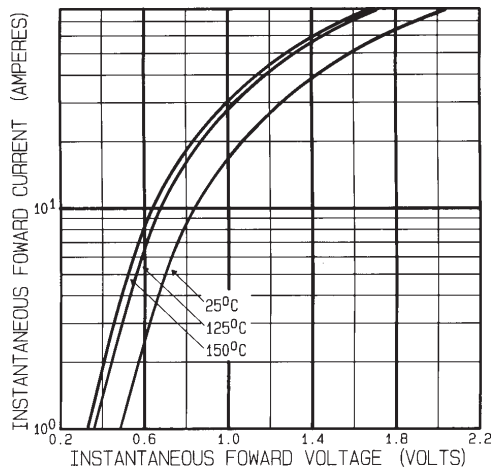


Fig. 1 - Max. Forward Voltage Drop Characteristics

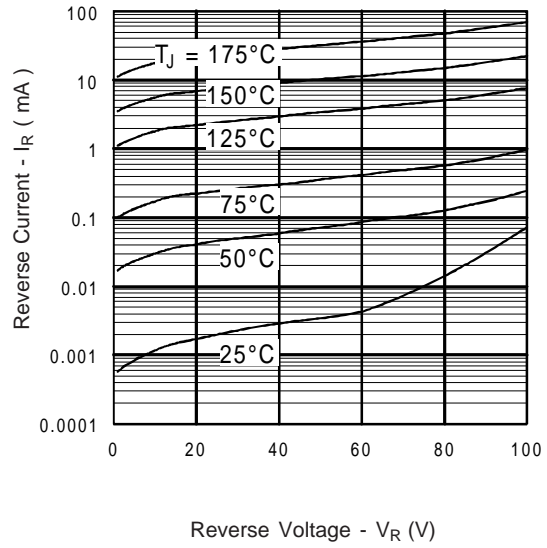


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

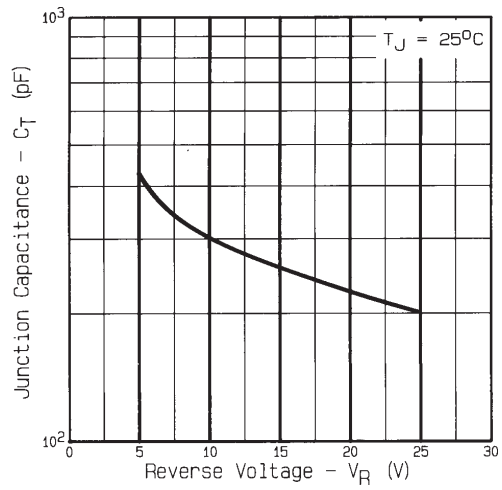


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

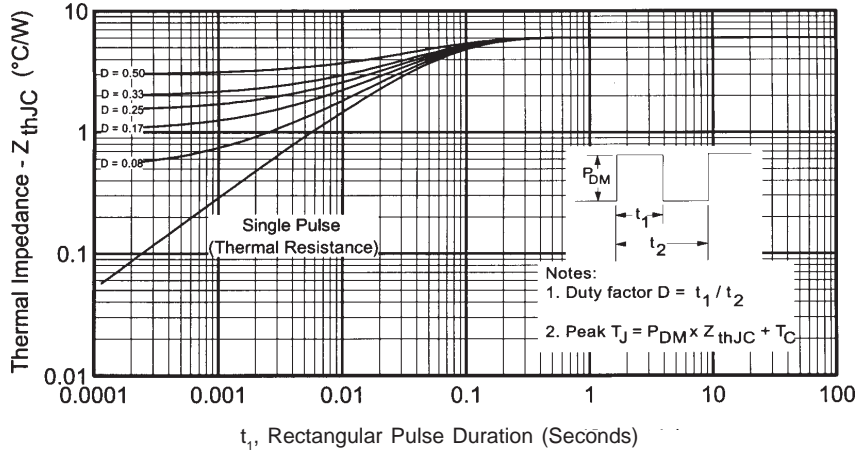


Fig. 4 - Max. Thermal Impedance Z_{thJC} Characteristics

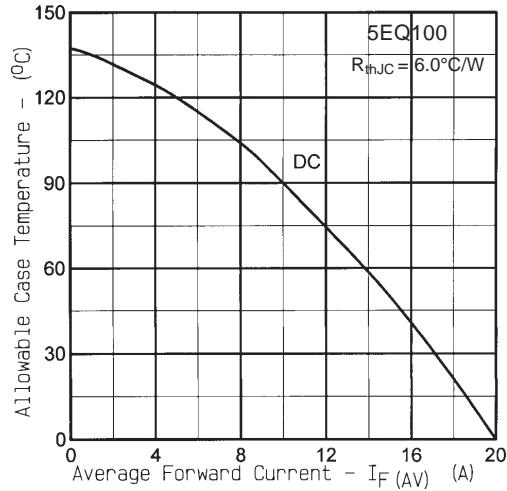


Fig. 5 - Max. Allowable Case Temperature Vs. Average Forward Current