

International
IR Rectifier
 SCHOTTKY RECTIFIER
 HIGH EFFICIENCY SERIES

PD-91855B

15LJQ100
 JANS1N6844U3
 JANTX1N6844U3
 JANTXV1N6844U3
 15A, 100V
 REF: MIL-PRF-19500/679

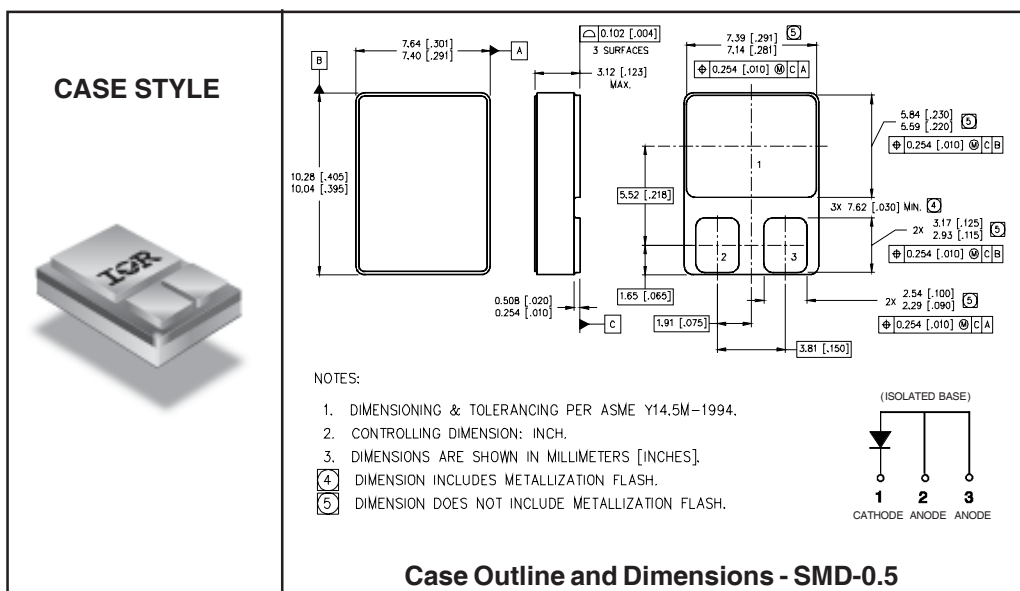
Major Ratings and Characteristics

Characteristics	Limits	Units
$I_{F(AV)}$ Rectangular Waveform	15	A
V_{RRM}	100	V
I_{FSM} @ $t_p = 8.3ms$ half-sine	250	A
V_F @15Apk, $T_J = 125^\circ C$	0.72	V
T_J, T_{stg} Operating and Storage	-65 to 150	$^\circ C$

Description/Features

The 1N6844U3 Schottky rectifier has been expressly designed to meet the rigorous requirements of Hirel environments. It is packaged in the hermetic surface mount SMD-0.5 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 S, TX and TXV 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	1N6844U3
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	15	A	50% duty cycle @ $T_C = 125^\circ\text{C}$, 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	0.70	V	@ 5.0A	
	0.90	V	@ 15A	
	1.0	V	@ 20A	
	0.58	V	@ 5.0A	$T_J = 125^\circ\text{C}$
	0.72	V	@ 15A	
	0.85	V	@ 5.0A	$T_J = -55^\circ\text{C}$
I_{RM} Max. Reverse Leakage Current See Fig. 2 ^①	50	μA	$T_J = 25^\circ\text{C}$	
	10	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	4.8	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	-65 to 150	$^\circ\text{C}$	
T_{stg} Max. Storage Temperature Range	-65 to 150	$^\circ\text{C}$	
R_{thJC} Max. Thermal Resistance, Junction to Case	2.0	$^\circ\text{C}/\text{W}$	DC operation See Fig. 4
wt Weight (Typical)	1.0	g	
Die Size	125X125	mils	
Case Style	SMD-0.5		

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

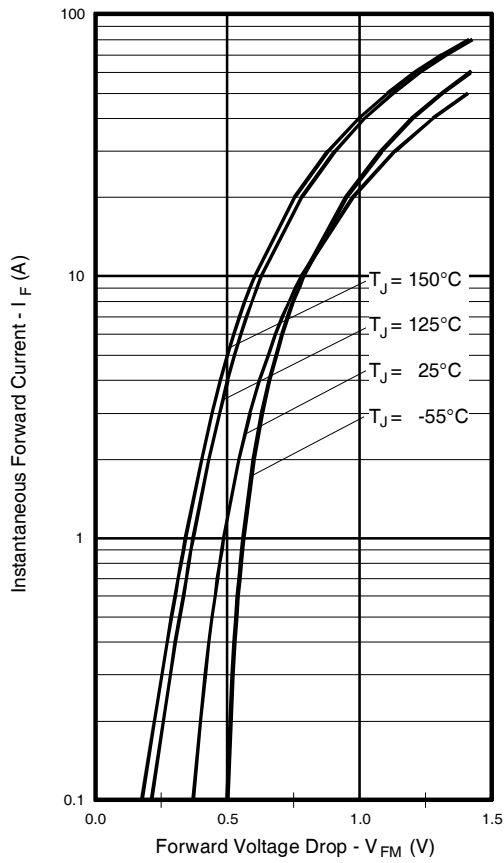


Fig. 1 - Max. Forward Voltage Drop Characteristics

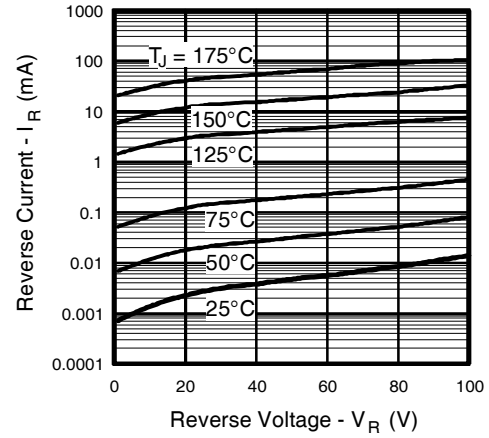


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

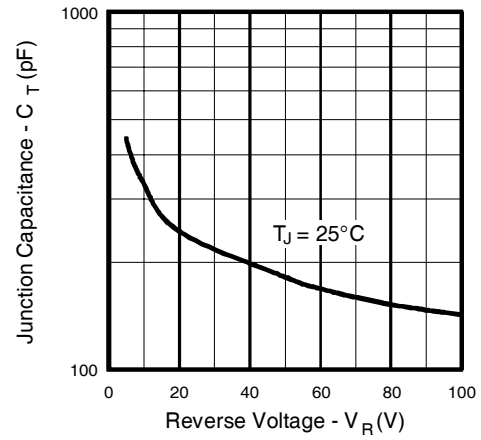


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

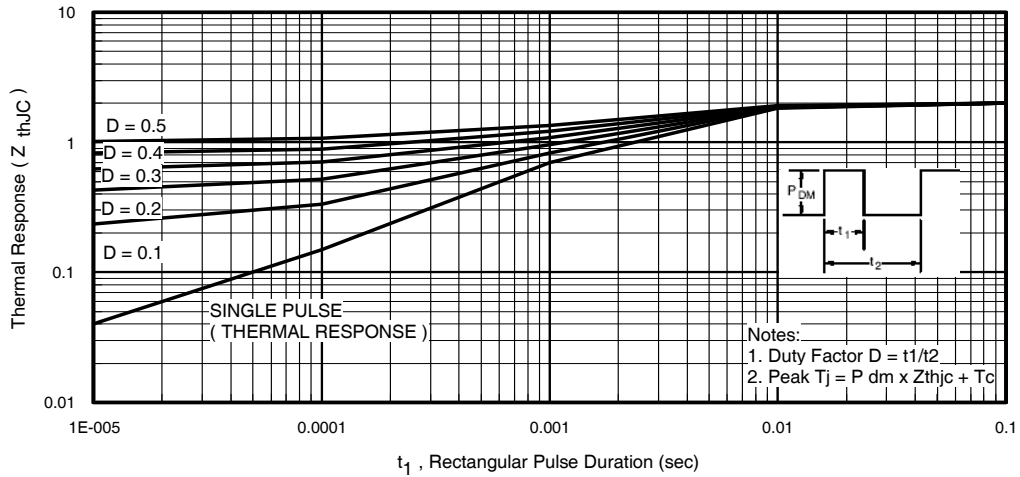


Fig. 4 - Max. Thermal Impedance Z_{thJC} Characteristics

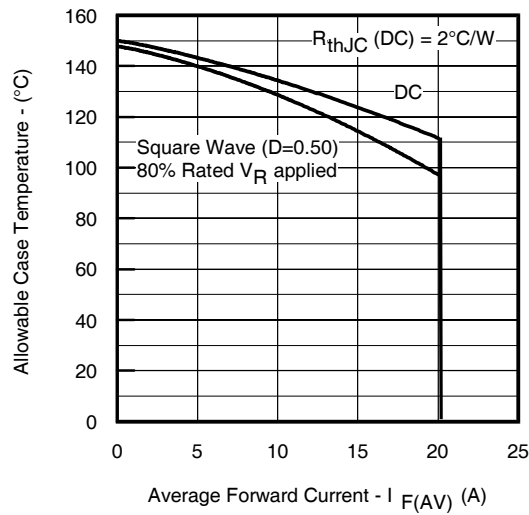


Fig. 5 - Max. Allowable Case Temperature Vs. Average Forward Current