

International  
**IR** Rectifier  
 SCHOTTKY RECTIFIER  
 HIGH EFFICIENCY SERIES

PD-91855B

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

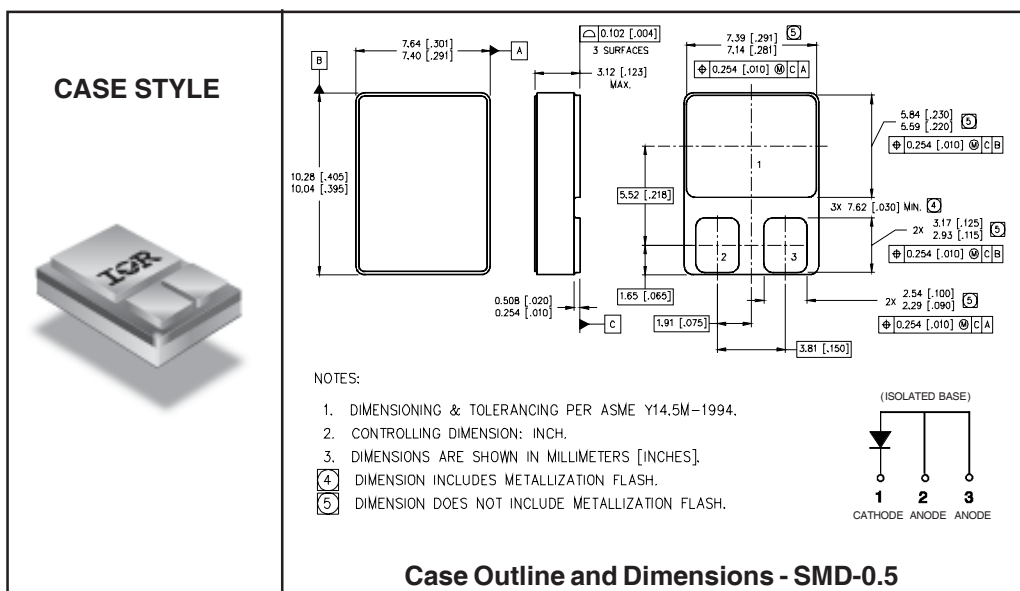
**Major Ratings and Characteristics**

| 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 <sub>R</sub> Max. DC Reverse Voltage (V)             | 100      |
| 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<br>See Fig. 5       | 15     | A     | 50% duty cycle @ T <sub>C</sub> = 125°C, rectangular 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<br>See Fig. 1①     | 0.70   | V     | @ 5.0A   |
|  | 0.90   | V     | @ 15A  |
|  | 1.0    | V     | @ 20A  |
|  | 0.58   | V     | @ 5.0A   |
|  | 0.72   | V     | @ 15A  |
|  | 0.85   | V     | @ 5.0A   |
| I <sub>RM</sub> Max. Reverse Leakage Current<br>See Fig. 2 ① | 50     | μA    | T <sub>J</sub> = 25°C                                      |
|  | 10     | mA    | T <sub>J</sub> = 125°C                                     |
| C <sub>T</sub> Max. Junction Capacitance                     | 600    | pF    | V <sub>R</sub> = 5V <sub>DC</sub> ( 1MHz, 25°C )           |
| L <sub>S</sub> 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 <sub>J</sub> Max. Junction Temperature Range              | -65 to 150 | °C    |                         |
| T <sub>stg</sub> Max. Storage Temperature Range             | -65 to 150 | °C    |                         |
| R <sub>thJC</sub> Max. Thermal Resistance, Junction to Case | 2.0        | °C/W  | DC operation See Fig. 4 |
| wt Weight (Typical)   | 1.0        | g     |                         |
| Die Size  | 125X125    | mils  |                         |
| Case Style  | SMD-0.5    |       |                         |

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

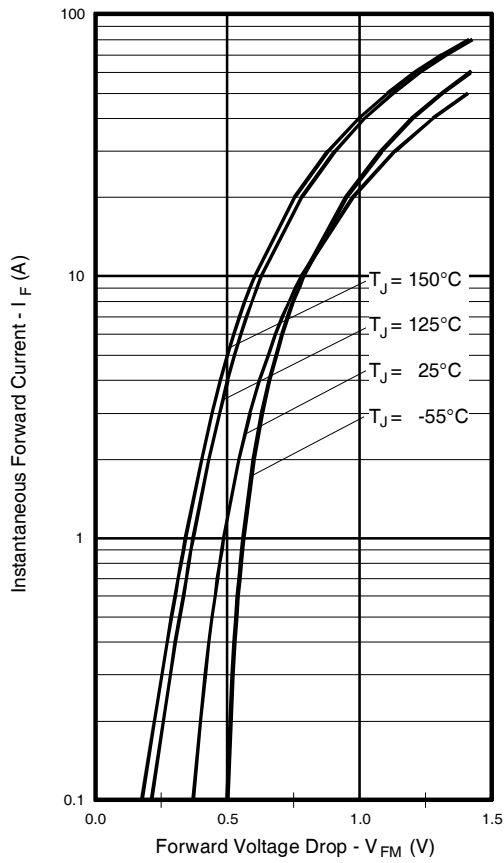


Fig. 1 - Max. Forward Voltage Drop Characteristics

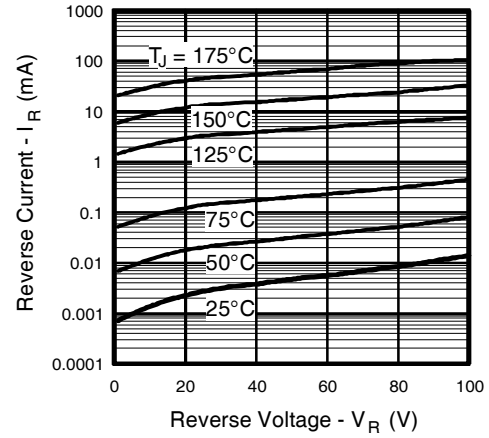


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

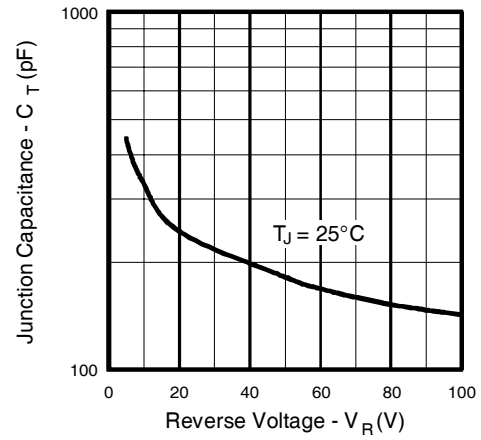


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

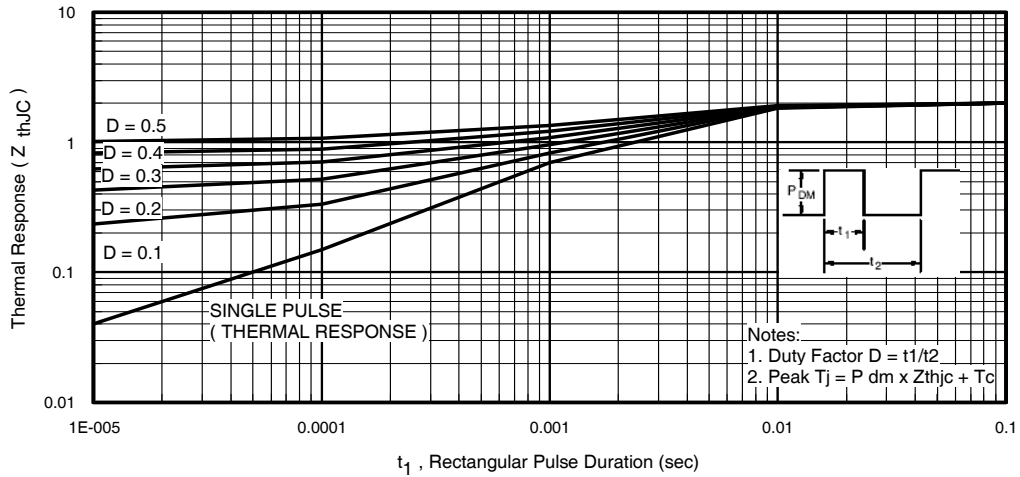


Fig. 4 - Max. Thermal Impedance  $Z_{thJC}$  Characteristics

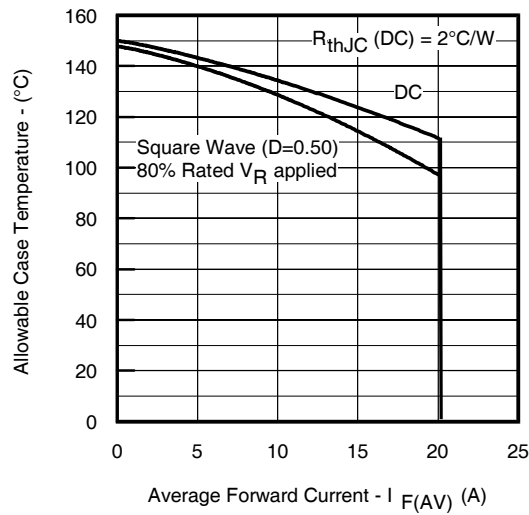


Fig. 5 - Max. Allowable Case Temperature Vs. Average Forward Current