

**SCHOTTKY RECTIFIER**  
**HIGH EFFICIENCY SERIES**

**80SCLQ045**

**80 Amp, 45V**

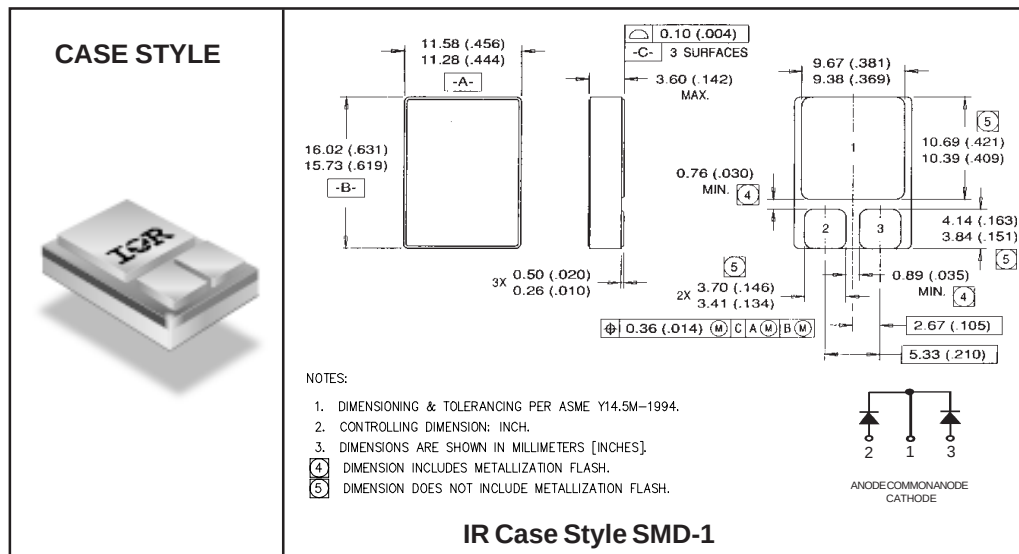
**Major Ratings and Characteristics**

| Characteristics                                    | 80SCLQ045  | Units      |
|----------------------------------------------------|------------|------------|
| $I_{F(AV)}$                                        | 80         | A          |
| $V_{RRM}$ (Per Leg)                                | 45         | V          |
| $I_{FSM}$ @ $t_p = 8.3ms$ half-sine (Per Leg)      | 250        | A          |
| $V_F$ @ $40A_{pk}$ , $T_J = 125^\circ C$ (Per Leg) | 0.62       | V          |
| $T_J$ , $T_{stg}$ Operating and storage            | -55 to 150 | $^\circ C$ |

**Description/Features**

The 80SCLQ045 center tap Schottky rectifier has been expressly designed to meet the rigorous requirements of hi-rel environments. It is packaged in the hermetic surface mount SMD-1 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
- Center Tap
- Low Forward Voltage Drop
- High Frequency Operation
- Guard Ring for Enhanced Ruggedness and Long term Reliability
- Surface Mount
- Lightweight



**Voltage Ratings**

|                                                                  |           |
|------------------------------------------------------------------|-----------|
| Part number                                                      | 80SCLQ045 |
| V <sub>R</sub> Max. DC Reverse Voltage (V) (Per Leg)             | 45        |
| V <sub>RWM</sub> Max. Working Peak Reverse Voltage (V) (Per Leg) |           |

**Absolute Maximum Ratings**

| Parameters                                                                       | Limits | Units | Conditions                                              |
|----------------------------------------------------------------------------------|--------|-------|---------------------------------------------------------|
| I <sub>F(AV)</sub> Max. Average Forward Current<br>See Fig. 5                    | 80     | A     | 50% duty cycle @ T <sub>C</sub> = 84°C, square waveform |
| I <sub>FSM</sub> Max. Peak One Cycle Non - Repetitive<br>Surge Current (Per Leg) | 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>(Per Leg) See Fig. 1①    | 0.62   | V     | @ 30A                                                      |
|                                                                       | 0.67   | V     | @ 40A                                                      |
|                                                                       | 0.70   | V     | @ 45A                                                      |
|                                                                       | 0.85   | V     | @ 80A                                                      |
|                                                                       | 0.57   | V     | @ 30A                                                      |
|                                                                       | 0.63   | V     | @ 40A                                                      |
|                                                                       | 0.66   | V     | @ 45A                                                      |
|                                                                       | 0.88   | V     | @ 80A                                                      |
|                                                                       | 0.53   | V     | @ 30A                                                      |
|                                                                       | 0.62   | V     | @ 40A                                                      |
|                                                                       | 0.64   | V     | @ 45A                                                      |
|                                                                       | 0.87   | V     | @ 80A                                                      |
| I <sub>RM</sub> Max. Reverse Leakage Current<br>(Per Leg) See Fig. 2① | 0.6    | mA    | T <sub>J</sub> = 25°C                                      |
|                                                                       | 80     | mA    | T <sub>J</sub> = 100°C                                     |
|                                                                       | 195    | mA    | T <sub>J</sub> = 125°C                                     |
| C <sub>T</sub> Max. Junction Capacitance (Per Leg)                    | 2000   | pF    | V <sub>R</sub> = 5V <sub>DC</sub> ( 1MHz, 25°C )           |
| L <sub>S</sub> Typical Series Inductance (Per Leg)                    | 5.9    | 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                               | -55 to 150 | °C    |                         |
| T <sub>stg</sub> Max. Storage Temperature Range                              | -55 to 150 | °C    |                         |
| R <sub>thJC</sub> Max. Thermal Resistance, Junction<br>to Case (Per Leg)     | 1.25       | °C/W  | DC operation See Fig. 4 |
| R <sub>thJC</sub> Max. Thermal Resistance, Junction<br>to Case (Per Package) | 0.63       | °C/W  | DC operation            |
| wt Weight (Typical)                                                          | 2.6        | g     |                         |
| Die Size (Typical)                                                           | 150X180    | mils  |                         |
| Case Style                                                                   | SMD-1      |       |                         |

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

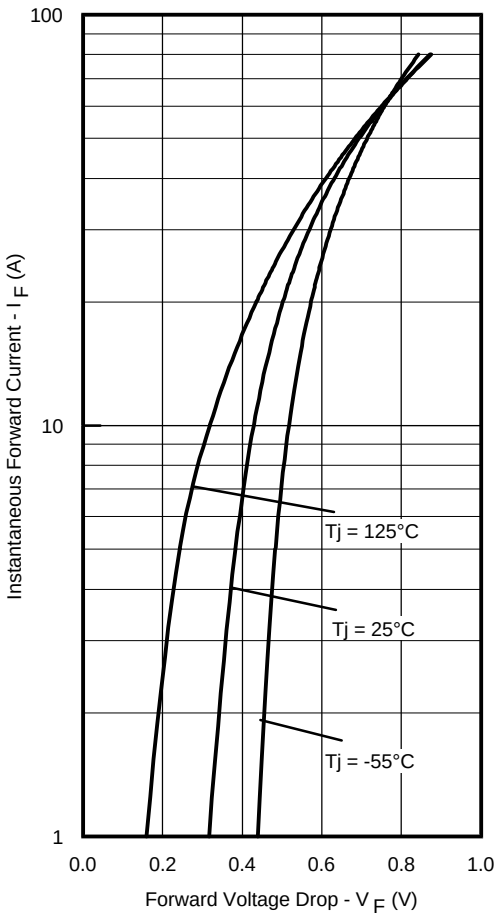


Fig. 1 - Max. Forward Voltage Drop Characteristics (Per Leg)

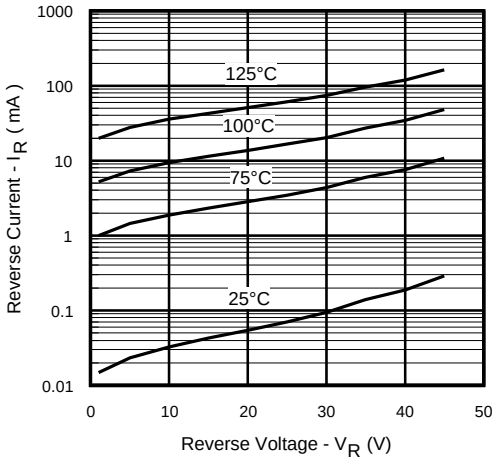


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage (Per Leg)

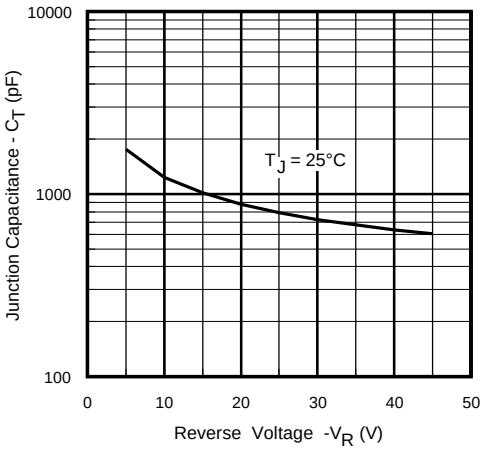
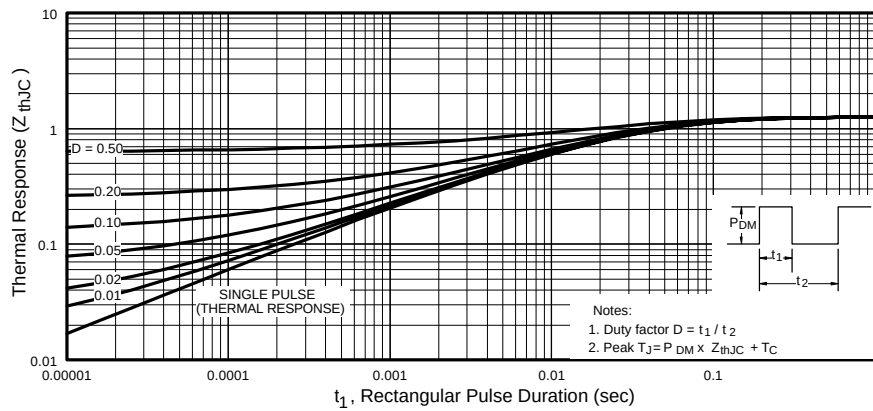
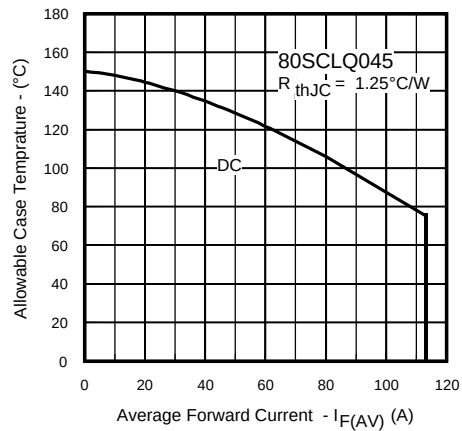


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

Fig. 4 - Max. Thermal Impedance  $Z_{thJC}$  Characteristics (Per Leg)Fig. 5 - Max. Allowable Case Temperature Vs.  
Average Forward Current (Per Leg)International  
**IR** Rectifier

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*Data and specifications subject to change without notice. 10/00*