

SCHOTTKY RECTIFIER

9 Amp

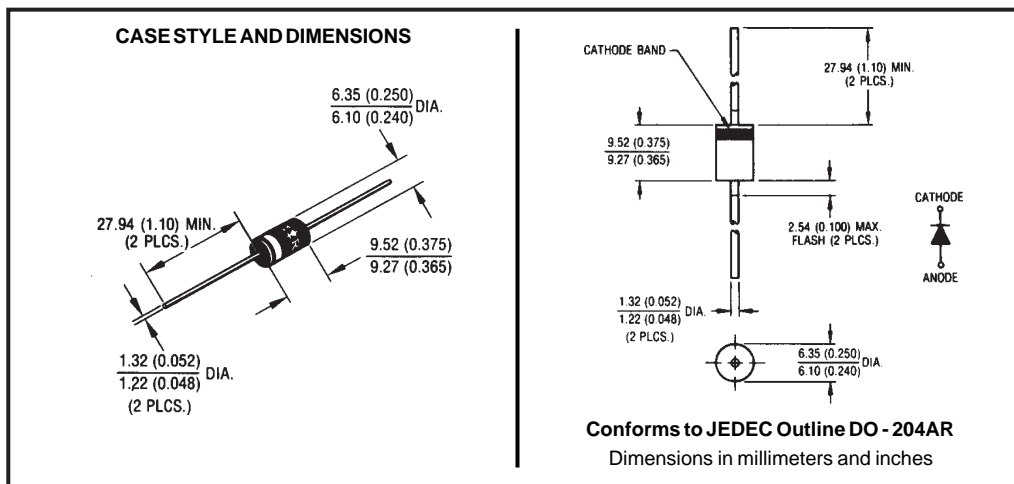
Major Ratings and Characteristics

| Characteristics | 95SQ015 | Units |
|----------------------------------|------------|------------|
| $I_{F(AV)}$ Rectangular waveform | 9 | A |
| V_{RRM} | 15 | V |
| I_{FSM} @ $t_p=5\ \mu s$ sine | 2900 | A |
| V_F @ 9Apk, $T_J=75^\circ C$ | 0.25 | V |
| T_J range | -55 to 100 | $^\circ C$ |

Description/Features

The 95SQ015 axial leaded Schottky rectifier has been optimized for ultra low forward voltage drop specifically for the OR-ing of parallel power supplies. The proprietary barrier technology allows for reliable operation up to 100° C junction temperature. Typical applications are in parallel switching power supplies, converters, reverse battery protection, and redundant power subsystems.

- 100° C T_J operation
- Optimized for OR-ing applications
- Ultra low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance



Voltage Ratings

| Part number | 95SQ015 |
|-------------------------------------------------|---------|
| V_R Max. DC Reverse Voltage (V) | 15 |
| V_{RWM} Max. Working Peak Reverse Voltage (V) | 25 |

Absolute Maximum Ratings

| Parameters | 95SQ | Units | Conditions |
|-------------------------------------------------------------------------|------|-------|------------------------------------------------------------------------------------------------------------------------|
| $I_{F(AV)}$ Max. Average Forward Current * See Fig. 5 | 9 | A | 50% duty cycle @ $T_C = 55^\circ\text{C}$, rectangular wave form |
| I_{FSM} Max. Peak One Cycle Non-Repetitive Surge Current * See Fig. 7 | 2900 | A | 5 μs Sine or 3 μs Rect. pulse |
| | 400 | | 10ms Sine or 6ms Rect. pulse |
| E_{AS} Non-Repetitive Avalanche Energy | 4.50 | mJ | $T_J = 25^\circ\text{C}$, $I_{AS} = 1$ Amps, $L = 9$ mH |
| I_{AR} Repetitive Avalanche Current | 1 | A | Current decaying linearly to zero in 1 μsec Frequency limited by T_J max. $V_A = 3 \times V_R$ typical |

Electrical Specifications

| Parameters | 95SQ | Units | Conditions |
|-----------------------------------------------------------|--------|------------------|-------------------------------------------------------------------------|
| V_{FM} Max. Forward Voltage Drop (1) * See Fig. 1 | 0.31 | V | @ 9A $T_J = 25^\circ\text{C}$ |
| | 0.37 | V | @ 18A |
| | 0.25 | V | @ 9A $T_J = 75^\circ\text{C}$ |
| | 0.31 | V | @ 18A |
| I_{RM} Max. Reverse Leakage Current (1) * See Fig. 2 | 7 | mA | $T_J = 25^\circ\text{C}$ $V_R = \text{rated } V_R$ |
| | 348 | mA | $T_J = 100^\circ\text{C}$ |
| | 310 | mA | $T_J = 100^\circ\text{C}$ $V_R = 12\text{V}$ |
| | 190 | mA | $T_J = 100^\circ\text{C}$ $V_R = 5\text{V}$ |
| C_T Max. Junction Capacitance | 1300 | pF | $V_R = 5V_{DC}$, (test signal range 100Khz to 1Mhz) 25°C |
| L_S Typical Series Inductance | 10.0 | nH | Measured lead to lead 5mm from body |
| dv/dt Max. Voltage Rate of Change (Rated V_R) | 10,000 | V/ μs | |

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

Thermal-Mechanical Specifications

| Parameters | 95SQ | Units | Conditions |
|--------------------------------------------------------|------------|--------------------|---------------------------------------------------|
| T_J Max. Junction Temperature Range | -55 to 100 | $^\circ\text{C}$ | |
| T_{stg} Max. Storage Temperature Range | -55 to 100 | $^\circ\text{C}$ | |
| R_{thJL} Max. Thermal Resistance Junction to Lead | 8.0 | $^\circ\text{C/W}$ | DC operation * See Fig. 4 1/8 inch lead length |
| R_{thJA} Typical Thermal Resistance, Junction to Air | 44 | $^\circ\text{C/W}$ | |
| wt Approximate Weight | 1.4(0.049) | g(oz.) | |
| Case Style | DO - 204AR | JEDEC | |

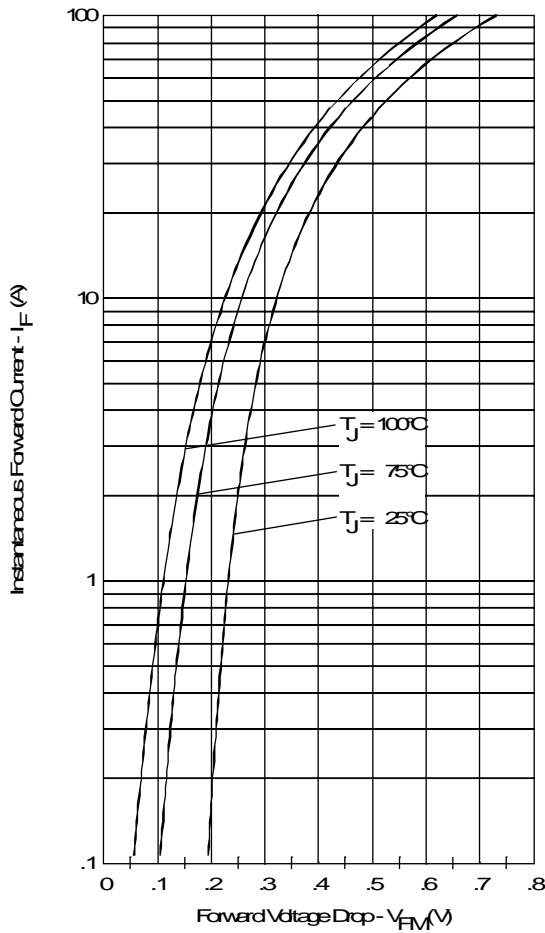


Fig. 1 - Maximum Forward Voltage Drop Characteristics

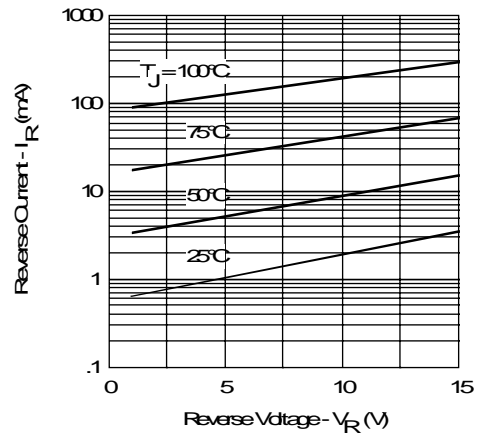


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

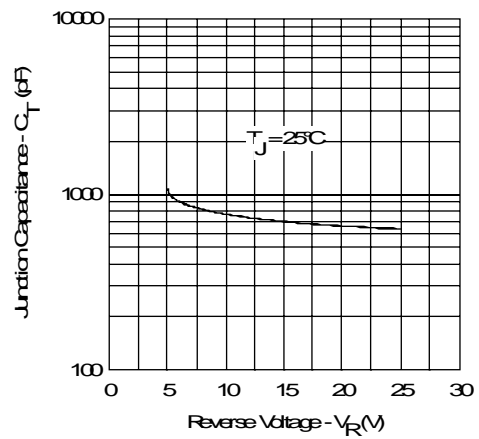


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

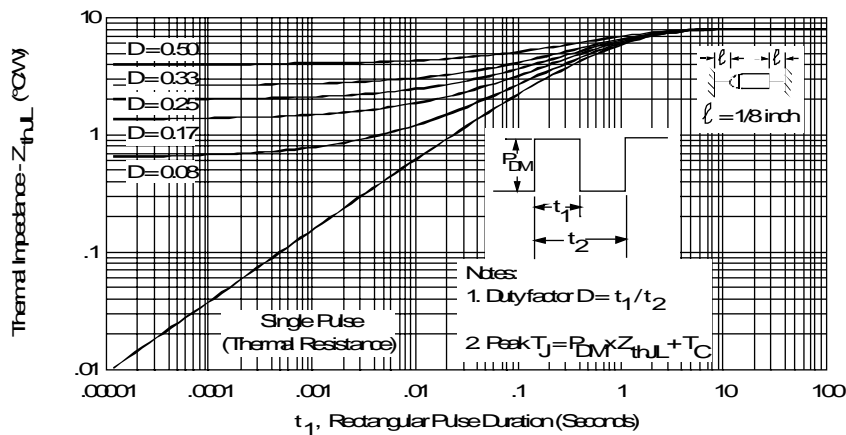


Fig. 4 - Maximum Thermal Impedance Z_{thJL} Characteristics

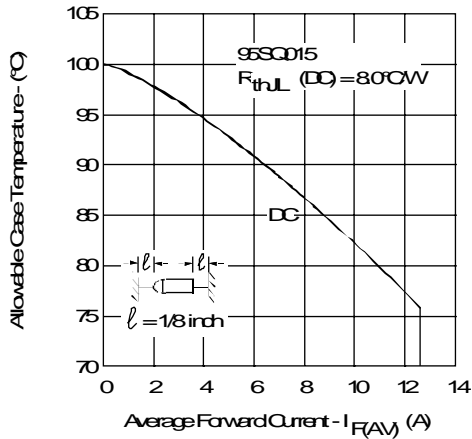


Fig. 5 - Maximum Allowable Case Temperature Vs. Average Forward Current

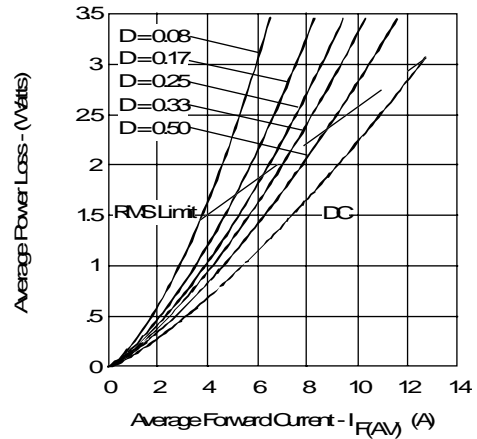


Fig. 6 - Forward Power Loss Characteristics

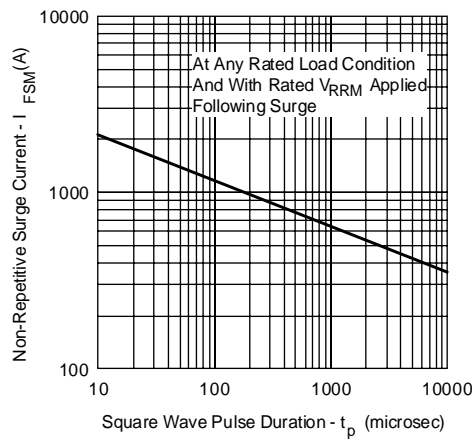


Fig. 7 - Maximum Non-Repetitive Surge Current

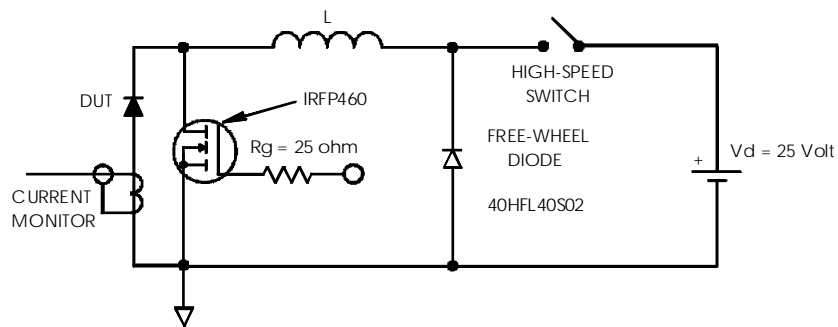


Fig. 8 - Unclamped Inductive Test Circuit