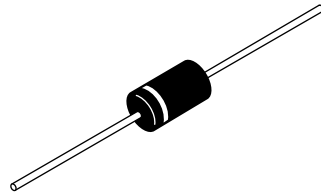
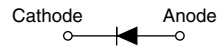


## Schottky Rectifier, 9 A


**DO-204AR**


### FEATURES

- 125 °C  $T_J$  operation ( $V_R < 5\text{ V}$ )
- Optimized for OR-ing applications
- Ultralow 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
- Lead (Pb)-free plating
- Designed and qualified for industrial level


**RoHS**  
COMPLIANT

### PRODUCT SUMMARY

|             |                  |
|-------------|------------------|
| $I_{F(AV)}$ | 9 A              |
| $V_R$       | 15 V             |
| $I_{RM}$    | 348 mA at 100 °C |

### DESCRIPTION

The 95SQ015 axial leaded Schottky rectifier has been optimized for ultralow 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.

### MAJOR RATINGS AND CHARACTERISTICS

| SYMBOL      | CHARACTERISTICS                   | VALUES      | UNITS |
|-------------|-----------------------------------|-------------|-------|
| $I_{F(AV)}$ | Rectangular waveform              | 9           | A     |
| $V_{RRM}$   |                                   | 15          | V     |
| $I_{FSM}$   | $t_p = 5\ \mu\text{s}$ sine       | 2900        | A     |
| $V_F$       | 9 Apk, $T_J = 75\ ^\circ\text{C}$ | 0.25        | V     |
| $T_J$       | Range                             | - 55 to 100 | °C    |

### VOLTAGE RATINGS

| PARAMETER                            | SYMBOL    | 95SQ015 | UNITS |
|--------------------------------------|-----------|---------|-------|
| Maximum DC reverse voltage           | $V_R$     | 15      | V     |
| Maximum working peak reverse voltage | $V_{RWM}$ | 25      |       |

### ABSOLUTE MAXIMUM RATINGS

| PARAMETER  | SYMBOL      | TEST CONDITIONS  | VALUES | UNITS |
|--|-------------|--|--------|-------|
| Maximum average forward current<br>See fig. 5                        | $I_{F(AV)}$ | 50 % duty cycle at $T_C = 55\ ^\circ\text{C}$ , rectangular waveform   | 9      | A     |
| Maximum peak one cycle<br>non-repetitive surge current<br>See fig. 7 | $I_{FSM}$   | 5 $\mu\text{s}$ sine or 3 $\mu\text{s}$ rect. pulse  | 2900   |       |
|  |             | 10 ms sine or 6 ms rect. pulse   | 400    |       |
| Non-repetitive avalanche energy                                      | $E_{AS}$    | $T_J = 25\ ^\circ\text{C}$ , $I_{AS} = 1\ \text{A}$ , $L = 9\ \text{mH}$   | 4.5    | mJ    |
| Repetitive avalanche current   | $I_{AR}$    | Current decaying linearly to zero in 1 $\mu\text{s}$<br>Frequency limited by, $T_J$ maximum $V_A = 3 \times V_R$ typical | 1      | A     |

| ELECTRICAL SPECIFICATIONS                     |                |   |                                  |                                   |            |
|---|----------------|---|----------------------------------|-----------------------------------|------------|
| PARAMETER                                     | SYMBOL         | TEST CONDITIONS   |                                  | VALUES                            | UNITS      |
| Maximum forward voltage drop<br>See fig. 1    | $V_{FM}^{(1)}$ | 9 A   | $T_J = 25\text{ }^\circ\text{C}$ | 0.31                              | V          |
|   |                | 18 A  |                                  | 0.37                              |            |
|   |                | 9 A   | $T_J = 75\text{ }^\circ\text{C}$ | 0.25                              |            |
|   |                | 18 A  |                                  | 0.31                              |            |
| Maximum reverse leakage current<br>See fig. 2 | $I_{RM}^{(1)}$ | $T_J = 100\text{ }^\circ\text{C}$                             | $V_R = 12\text{ V}$              | 310                               | mA         |
|   |                |   | $V_R = 5\text{ V}$               | 190                               |            |
|   |                | $T_J = 25\text{ }^\circ\text{C}$                              | $V_R = \text{Rated } V_R$        | 7                                 |            |
|   |                |   |                                  | $T_J = 100\text{ }^\circ\text{C}$ |            |
| Maximum junction capacitance                  | $C_T$          | $V_R = 5 V_{DC}$ , (test signal range 100 kHz to 1 MHz) 25 °C |                                  | 1300                              | pF         |
| Typical series inductance                     | $L_S$          | Measured lead to lead 5 mm from body                          |                                  | 10.0                              | nH         |
| Maximum voltage rate of change                | dV/dt          | Rated $V_R$   |                                  | 10 000                            | V/ $\mu$ s |

**Note**(1) Pulse width < 300  $\mu$ s, duty cycle < 2 %

| THERMAL - MECHANICAL SPECIFICATIONS             |            |  |  |             |       |
|---|------------|--|--|-------------|-------|
| PARAMETER                                       | SYMBOL     | TEST CONDITIONS                              |  | VALUES      | UNITS |
| Maximum junction temperature range              | $T_J$      |  |  | - 55 to 125 | °C    |
| Maximum storage temperature range               | $T_{Stg}$  |  |  | - 55 to 150 |       |
| Maximum thermal resistance,<br>junction to lead | $R_{thJL}$ | DC operation; see fig. 4<br>1/8" lead length |  | 8.0         | °C/W  |
| Typical thermal resistance,<br>junction to air  | $R_{thJA}$ |  |  | 44          |       |
| Approximate weight                              |            |  |  | 1.4         | g     |
|   |            |  |  | 0.049       | oz.   |
| Marking device                                  |            | Case style DO-204AR (JEDEC)                  |  | 95SQ015     |       |

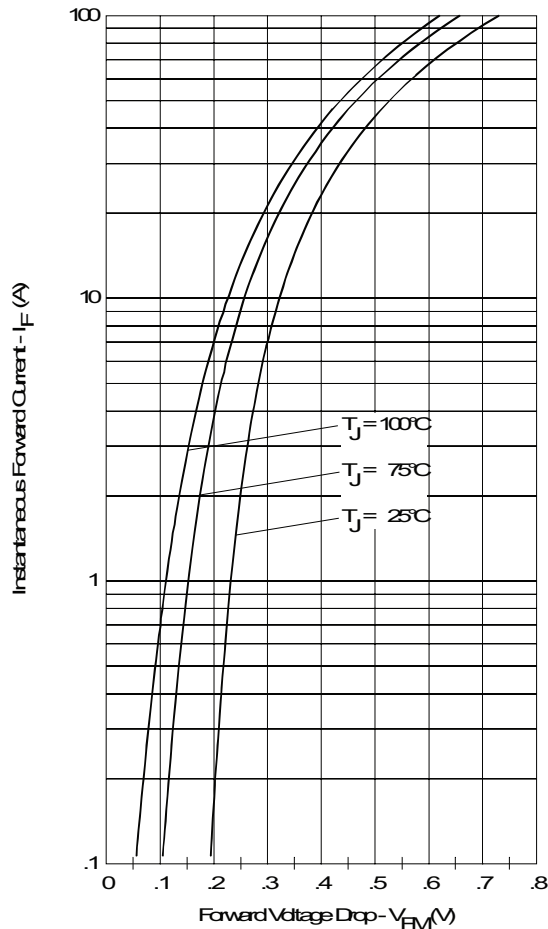


Fig. 1 - Maximum Forward Voltage Drop Characteristics

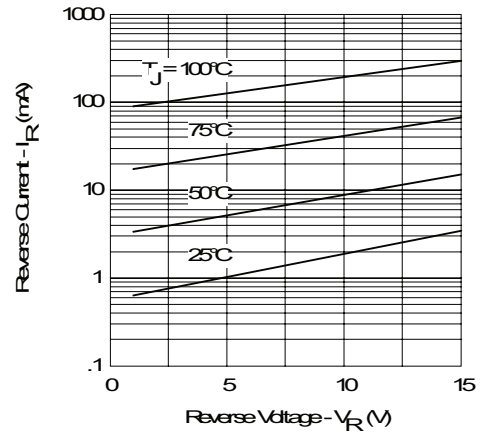


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage

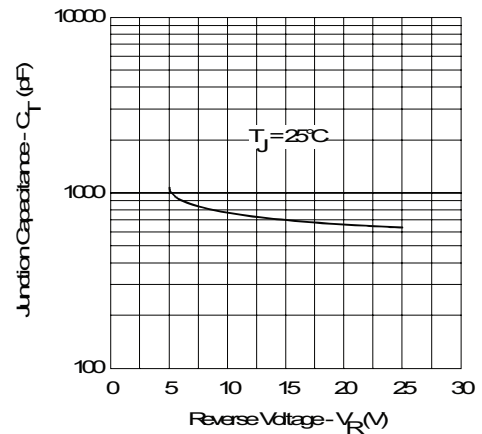


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage

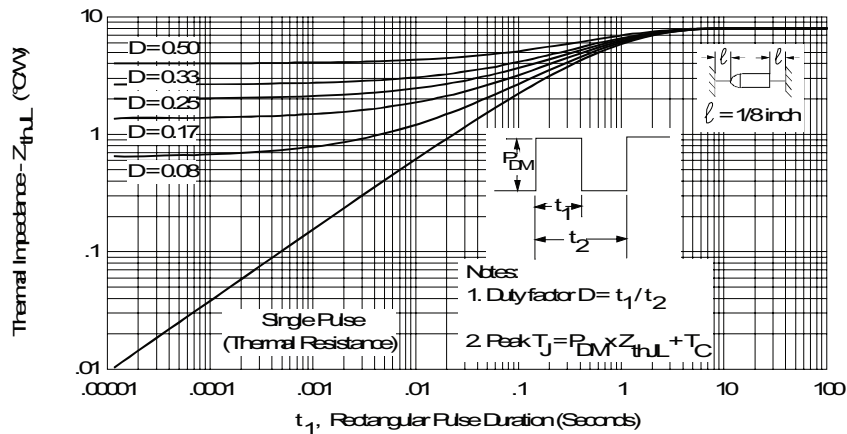


Fig. 4 - Maximum Thermal Impedance  $Z_{thJL}$  Characteristics

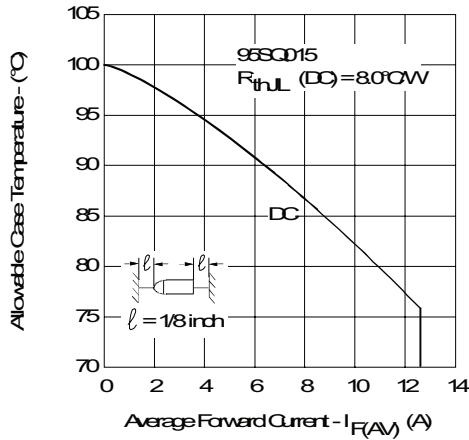


Fig. 5 - Maximum Allowable Case Temperature vs. Average Forward Current

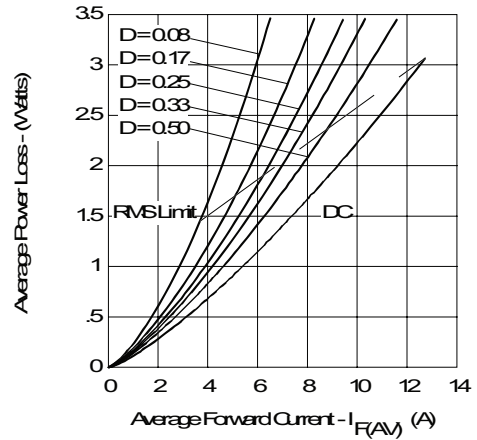


Fig. 6 - Forward Power Loss Characteristics

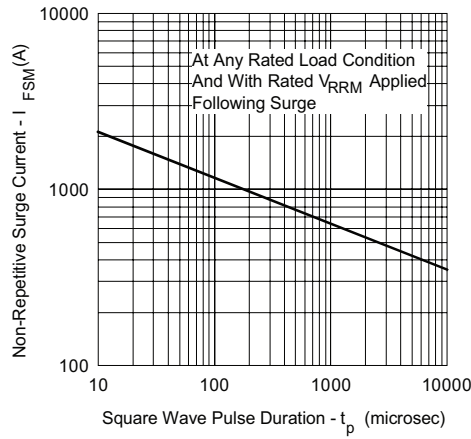


Fig. 7 - Maximum Non-Repetitive Surge Current

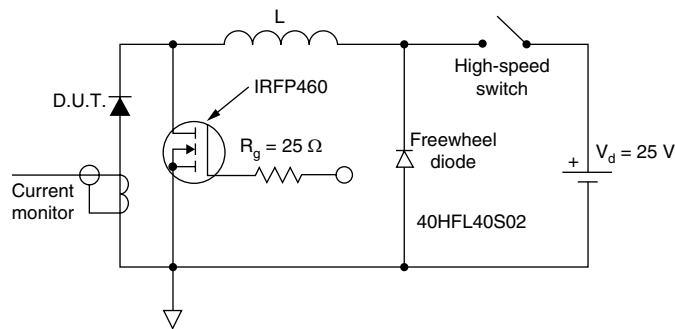
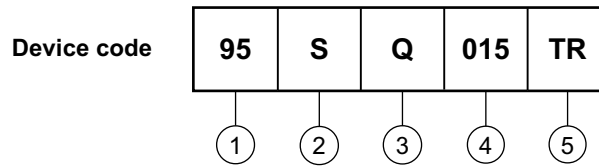


Fig. 8 - Unclamped Inductive Test Circuit



**ORDERING INFORMATION TABLE**



- 1** - 95 = Current x 10
- 2** - S = DO-204AR
- 3** - Q = Schottky Q.. series
- 4** - Voltage rating (015 = 15 V)
- 5** - • TR = Tape and reel package (1500 pcs)  
• None = Box package (300 pcs)

| LINKS TO RELATED DOCUMENTS |   |
|----------------------------|---|
| Dimensions                 | <a href="http://www.vishay.com/doc?95243">http://www.vishay.com/doc?95243</a> |
| Part marking information   | <a href="http://www.vishay.com/doc?95325">http://www.vishay.com/doc?95325</a> |
| Packaging information      | <a href="http://www.vishay.com/doc?95332">http://www.vishay.com/doc?95332</a> |



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