

# International IOR Rectifier

## 95SQ015

### SCHOTTKY RECTIFIER

9 Amp

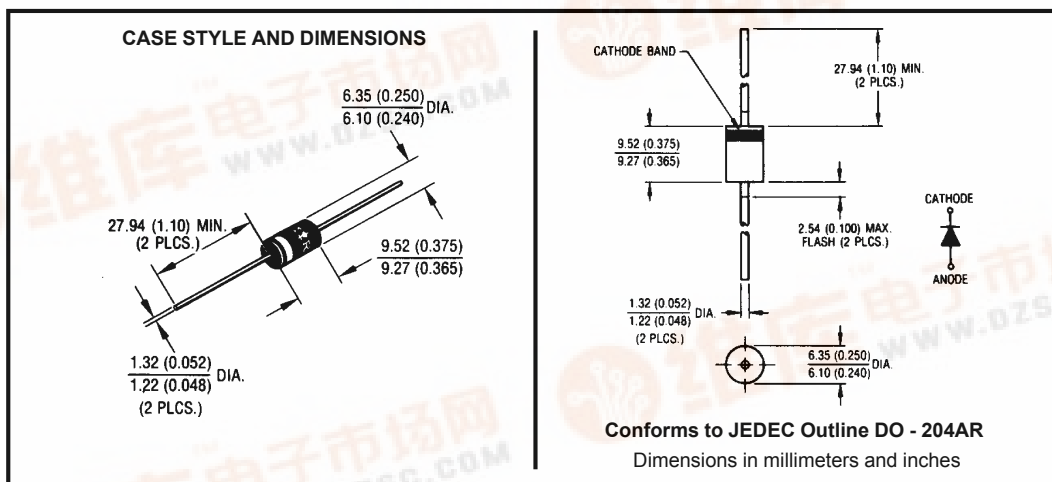
#### Major Ratings and Characteristics

Characteristics	95SQ015	Units
$I_{F(AV)}$ Rectangular waveform	9	A
$V_{RRM}$	15	V
$I_{FSM}$ @ $t_p = 5 \mu s$ sine	2900	A
$V_F$ @ 9 Apk, $T_J = 75^\circ C$	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  $100^\circ C$  junction temperature. Typical applications are in parallel switching power supplies, converters, reverse battery protection, and redundant power subsystems.

- $125^\circ C$   $T_J$  operation ( $V_R < 5V$ )
- 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 $\mu\text{s}$ Sine or 3 $\mu\text{s}$ 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 $\mu\text{sec}$ 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) $25^\circ\text{C}$
$L_S$ Typical Series Inductance	10.0	nH	Measured lead to lead 5mm from body
$dv/dt$ Max. Voltage Rate of Change (Rated $V_R$ )	10000	V/ $\mu\text{s}$	

(1) Pulse Width < 300 $\mu\text{s}$ , Duty Cycle < 2%

## Thermal-Mechanical Specifications

Parameters	95SQ	Units	Conditions
$T_J$ Max. Junction Temperature Range	-55 to 125	$^\circ\text{C}$	
$T_{stg}$ Max. Storage Temperature Range	-55 to 150	$^\circ\text{C}$	
$R_{thJL}$ Max. Thermal Resistance Junction to Lead	8.0	$^\circ\text{C}/\text{W}$	DC operation * See Fig. 4 1/8 inch lead length
$R_{thJA}$ Typical Thermal Resistance, Junction to Air	44	$^\circ\text{C}/\text{W}$	
wt Approximate Weight	1.4(0.049)	g(oz.)	
Case Style	DO-204AR	JEDEC	

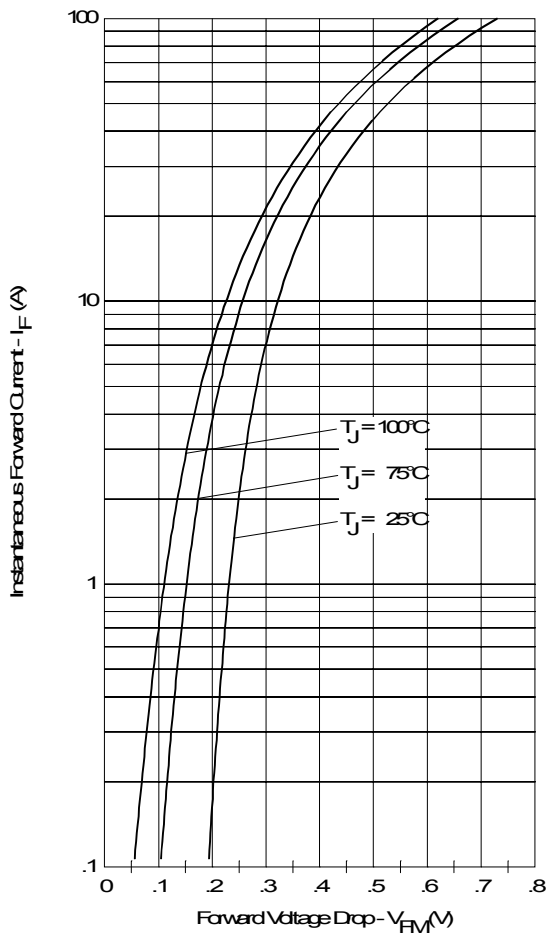


Fig. 1 - Maximum Forward Voltage Drop Characteristics

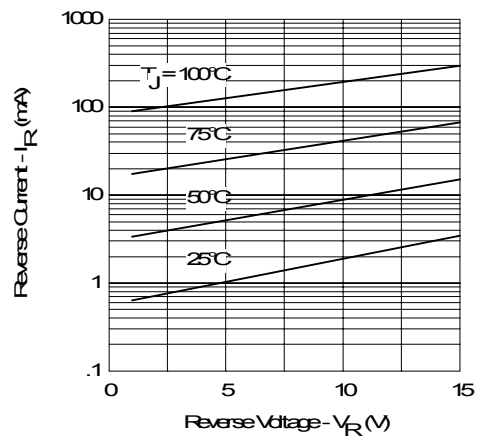


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

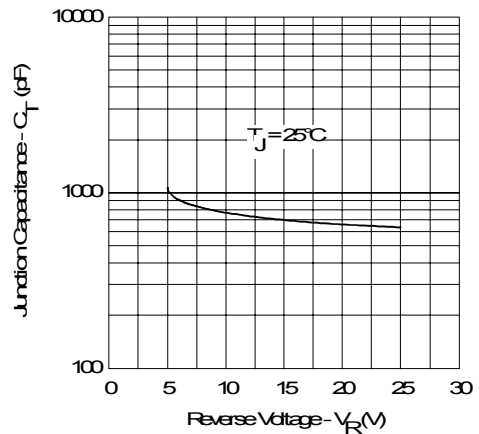


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

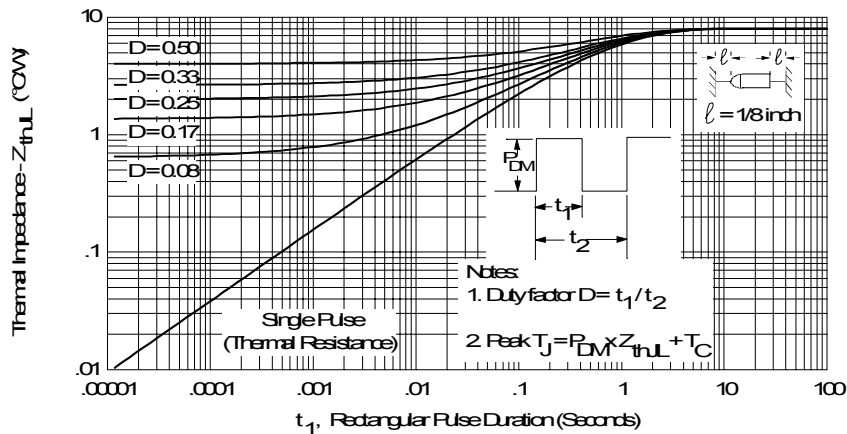


Fig. 4 - Maximum Thermal Impedance  $Z_{thL}$  Characteristics

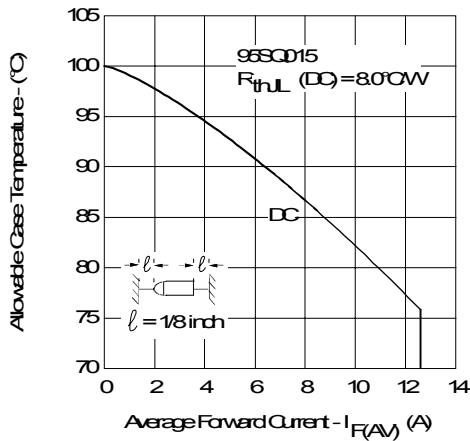


Fig. 5 - Maximum Allowable Case Temperature Vs. Average Forward Current

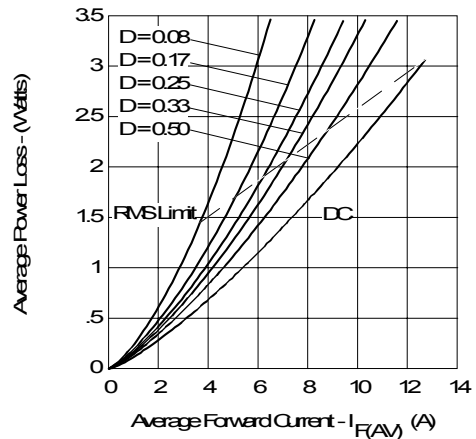


Fig. 6 - Forward Power Loss Characteristics

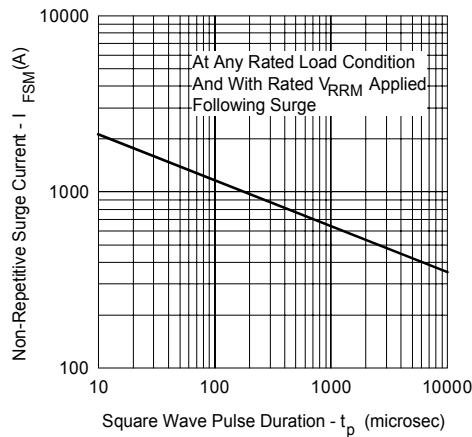


Fig. 7 - Maximum Non-Repetitive Surge Current

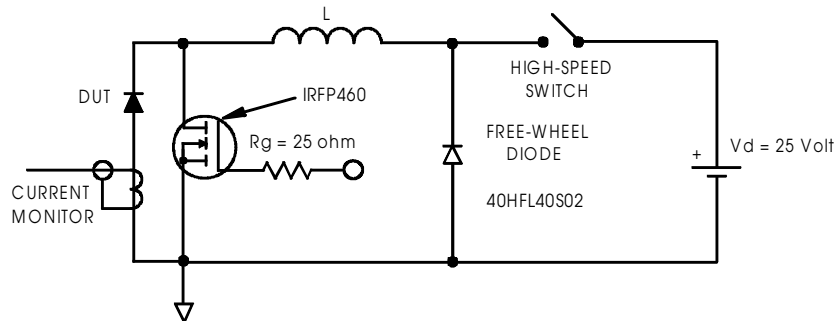


Fig. 8 - Unclamped Inductive Test Circuit

### Ordering Information Table

Device Code	95	S	Q	015	TR
	①	②	③	④	⑤
<b>1</b>	-	95 = current x 10			
<b>2</b>	-	S = DO-204AR			
<b>3</b>	-	Q = Schottky Q Series			
<b>4</b>	-	Voltage Rating (15V)			
<b>5</b>	-	TR = Tape & Reel package (1500 pcs)			
	-	= Box package (200 pcs)			

Data and specifications subject to change without notice.  
This product has been designed and qualified for Industrial Level.  
Qualification Standards can be found on IR's Web site.