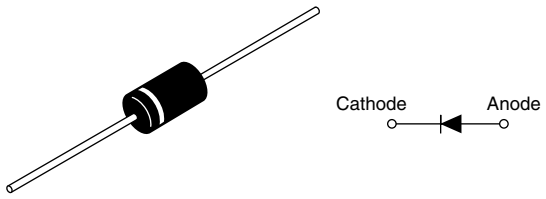
Schottky Rectifier, 9 A



DO-204AR

FEATURES

- 125 °C T_J operation (V_R < 5 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 µs sine	2900	A
V_F	9 Apk, T_J = 75 °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 See fig. 5	$I_{F(AV)}$	50 % duty cycle at T_C = 55 °C, rectangular waveform		9	A
Maximum peak one cycle non-repetitive surge current See fig. 7	I_{FSM}	5 µs sine or 3 µs rect. pulse	Following any rated load condition and with rated V_{RRM} applied	2900	
		10 ms sine or 6 ms rect. pulse		400	
Non-repetitive avalanche energy	E_{AS}	T_J = 25 °C, I_{AS} = 1 A, L = 9 mH		4.5	mJ
Repetitive avalanche current	I_{AR}	Current decaying linearly to zero in 1 µs Frequency limited by, T_J maximum V_A = 3 x V_R typical		1	A

ELECTRICAL SPECIFICATIONS					
PARAMETER	**SYMBOL**	**TEST CONDITIONS**		**VALUES**	**UNITS**
Maximum forward voltage drop See fig. 1	V_{FM} (1)	9 A	T_J = 25 °C	0.31	V
		18 A		0.37	
		9 A	T_J = 75 °C	0.25	
		18 A		0.31	
Maximum reverse leakage current See fig. 2	I_{RM} (1)	T_J = 100 °C	V_R = 12 V	310	mA
			V_R = 5 V	190	
		T_J = 25 °C	V_R = Rated V_R	7	
		T_J = 100 °C		348	
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/µs

Note

(1) Pulse width < 300 µs, 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, junction to lead	R_{thJL}	DC operation; see fig. 4 1/8" lead length	8.0	°C/W
Typical thermal resistance, junction to air	R_{thJA}		44	
Approximate weight			1.4	g
			0.049	oz.
Marking device		Case style DO-204AR (JEDEC)	95SQ015	

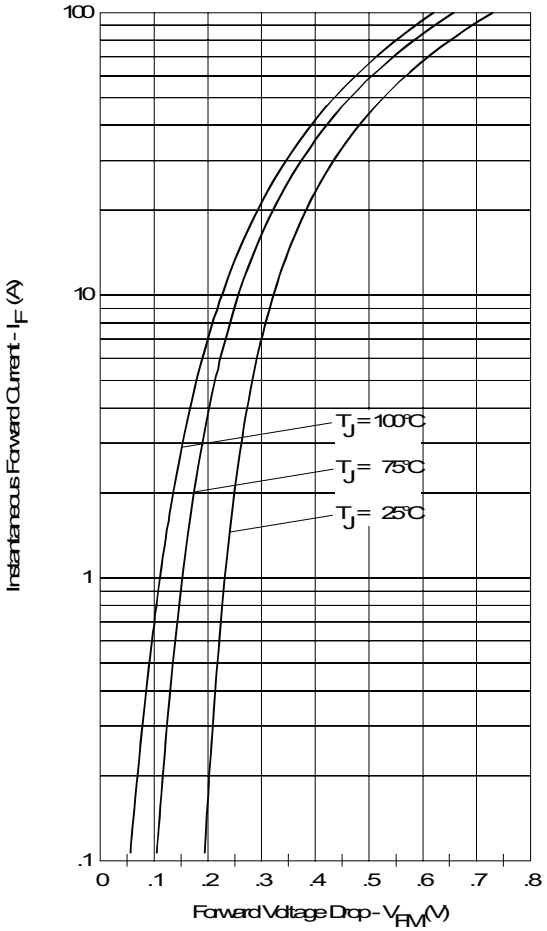


Fig. 1 - Maximum Forward Voltage Drop Characteristics

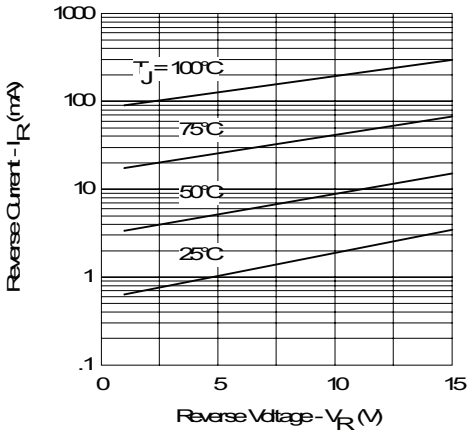


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage

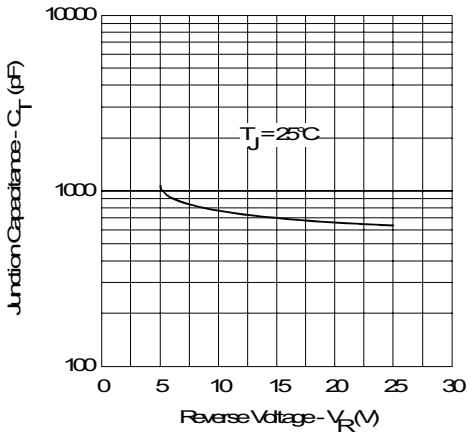


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage

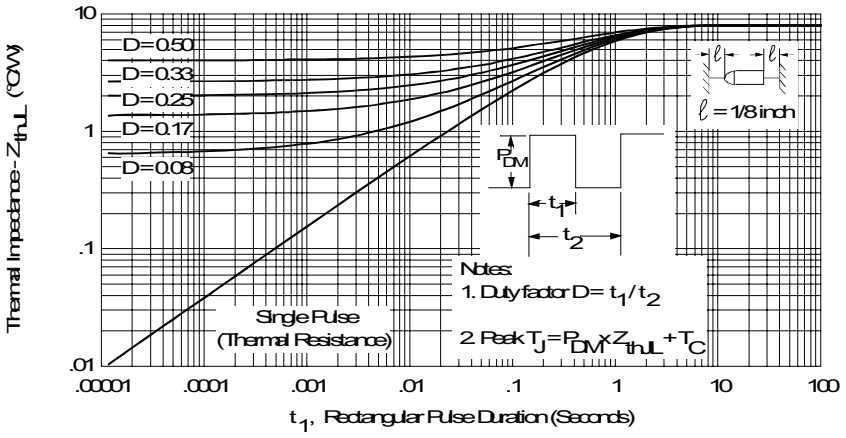


Fig. 4 - Maximum Thermal Impedance Z_{thJL} Characteristics

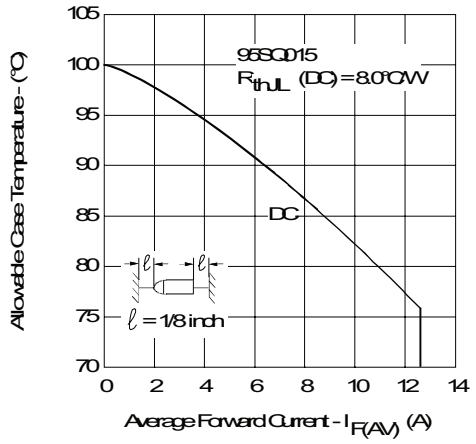


Fig. 5 - Maximum Allowable Case Temperature vs. Average Forward Current

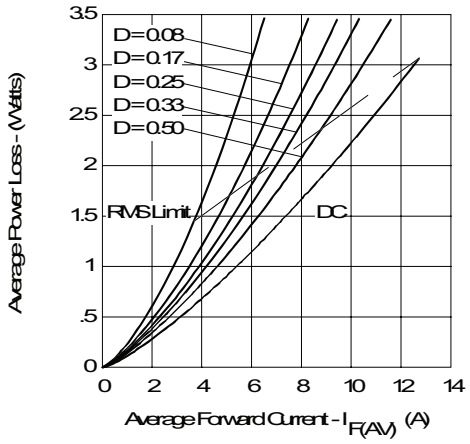


Fig. 6 - Forward Power Loss Characteristics

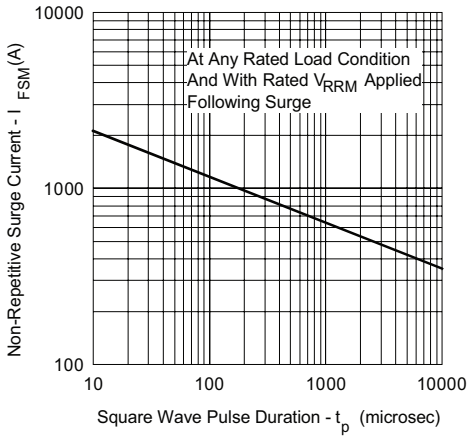


Fig. 7 - Maximum Non-Repetitive Surge Current

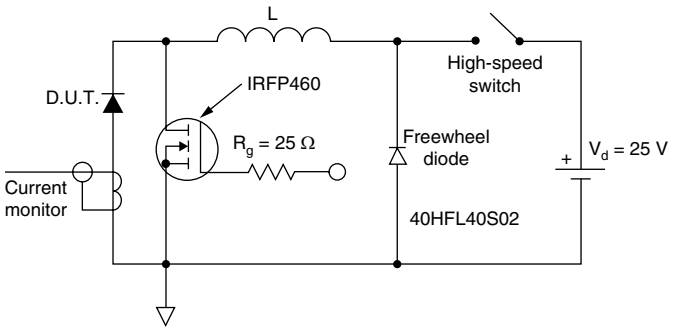
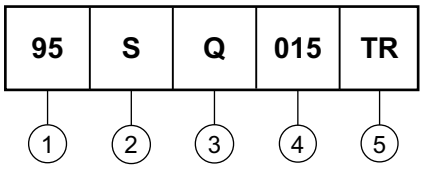


Fig. 8 - Unclamped Inductive Test Circuit

ORDERING INFORMATION TABLE

Device code



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	http://www.vishay.com/doc?95243
Part marking information	http://www.vishay.com/doc?95325
Packaging information	http://www.vishay.com/doc?95332

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