PD-2.331 rev. A 12/97

International
IOR Rectifier

1N6095
1N6096

SCHOTTKY RECTIFIER 25 Amp

Major Ratings and Characteristics

Characteristics	1N609.	Units
$I_{F(AV)}$ Rectangular waveform	25*	A
V_{RRM}	30/40*	V
I_{FSM} @60Hz	400*	A
V_F @80 Apk, T_J=70°C	0.86*	V
T_J range	-65 to 125*	°C

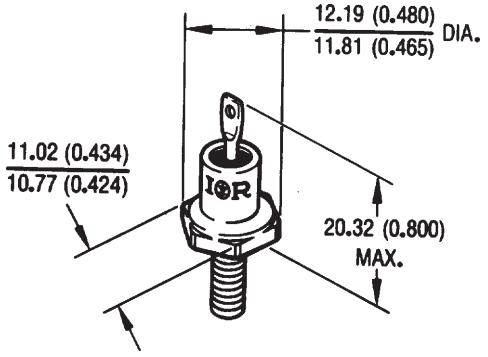
* JEDEC Registered Values

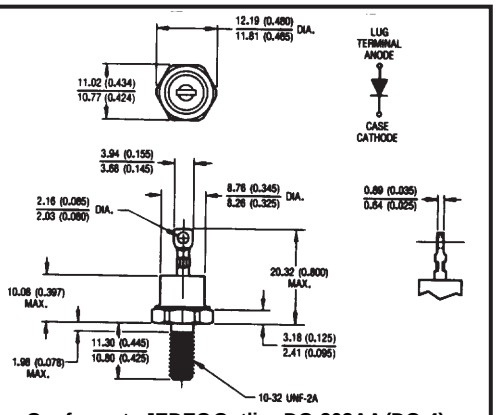
Description/Features

The 1N609. Schottky rectifier has been optimized for very low forward voltage drop, with moderate leakage. The proprietary barrier technology allows for reliable operation up to 125° C junction temperature. Typical applications are in switching power supplies, converters, free-wheeling diodes, and reverse battery protection.

- 125° C T_J operation
- Very low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Hermetic packaging

CASE STYLE AND DIMENSIONS





Conforms to JEDEC Outline DO-203AA (DO-4)

Dimensions in millimeters and inches

Voltage Ratings

	Part number	1N6095	1N6096
V_R	Max. DC Reverse Voltage (V)	30*	40*
V_{RWM}	Max. Working Peak Reverse Voltage (V)		

Absolute Maximum Ratings

	Parameters	1N609.	Units	Conditions
$I_{F(AV)}$	Max. Average Forward Current See Fig. 5	25*	A	50% duty cycle @ T_C = 105 °C, rectangular wave form
I_{FSM}	Max. Peak One Cycle Non-Repetitive Surge Current See Fig. 7	400*	A	60Hz halfwave, single phase
E_{AS}	Non-Repetitive Avalanche Energy	40	mJ	T_J = 25 °C, I_{AS} = 6 Amps, L = 2.20 mH
I_{AR}	Repetitive Avalanche Current	6	A	Current decaying linearly to zero in 1 µsec Frequency limited by T_J max. V_A = 1.5 x V_R typical

Electrical Specifications

	Parameters	1N609.	Units	Conditions	
V_{FM}	Max. Forward Voltage Drop (1) See Fig. 1	0.86*	V	@ 80A	T_J = 70 °C
I_{RM}	Max. Reverse Leakage Current (1) See Fig. 2	60	mA	T_J = 25 °C	V_R = rated V_R
		250*	mA	T_J = 125 °C	
C_T	Typical Junction Capacitance	6000*	pF	V_R = 1V_{DC}, test signal range 100Khz to 1Mhz 25 °C	
L_S	Typical Series Inductance	6.5	nH	Measured from top of terminal to mounting plane	
dv/dt	Max. Voltage Rate of Change (Rated V_R)	10,000	V/ µs		

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

Thermal-Mechanical Specifications

	Parameters		1N609.	Units	Conditions
T_J	Max. Junction Temperature Range		-65 to 125*	°C	
T_{stg}	Max. Storage Temperature Range		-65 to 125*	°C	
R_{thJC}	Max. Thermal Resistance Junction to Case		2.0*	°C/W	DC operation See Fig. 4
R_{thCS}	Typical Thermal Resistance, Case to Heatsink		0.50	°C/W	Mounting surface, smooth and greased
wt	Approximate Weight		5.8 (0.2)	g (oz.)	
T	Mounting Torque	Min.	14 (12)	Kg-cm (lbf-in)	Non-lubricated threads
		Max.	23 (20)		
	Case Style		DO-203AA (DO-4)		JEDEC

* JEDEC Registered Values

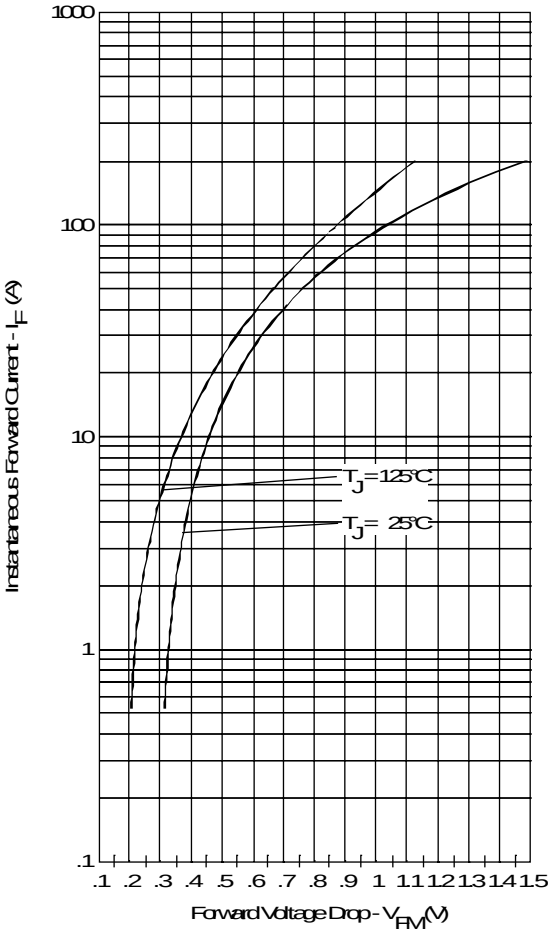


Fig. 1 - Maximum Forward Voltage Drop Characteristics

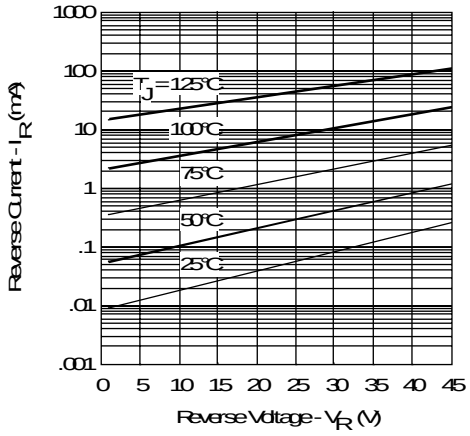


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

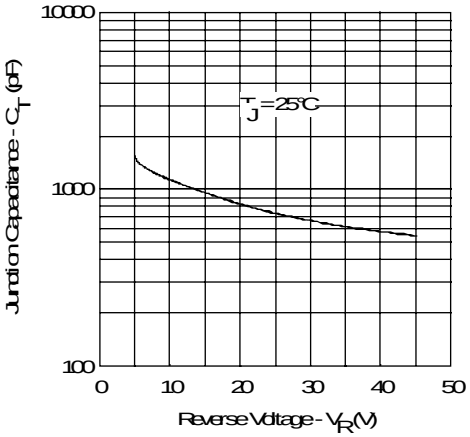


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

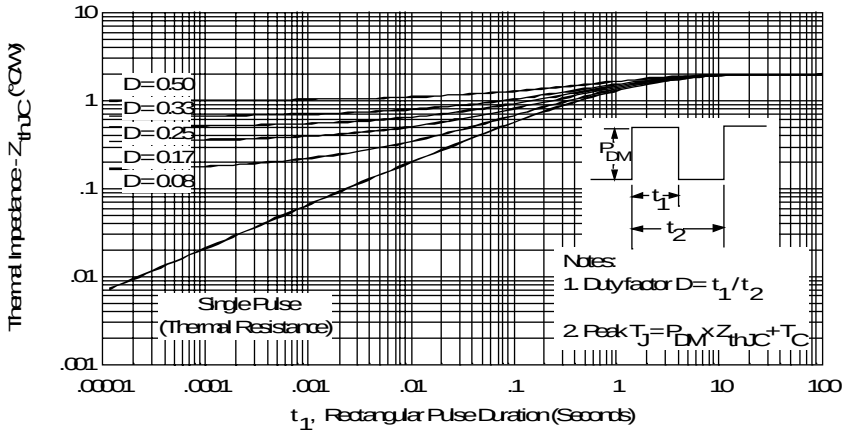


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics

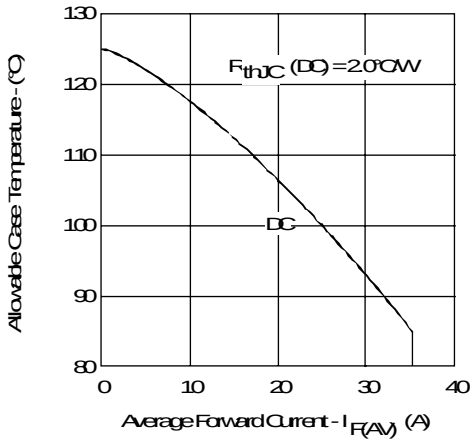


Fig. 5 - Maximum Allowable Case Temperature Vs. Average Forward Current

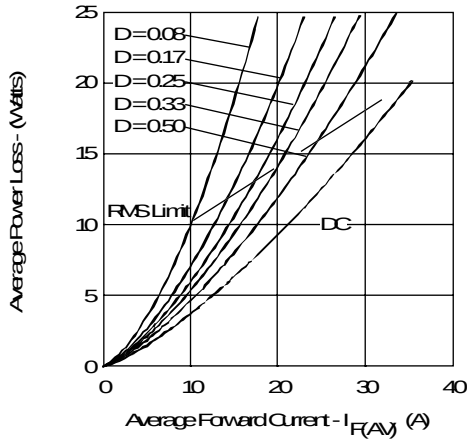


Fig. 6 - Forward Power Loss Characteristics

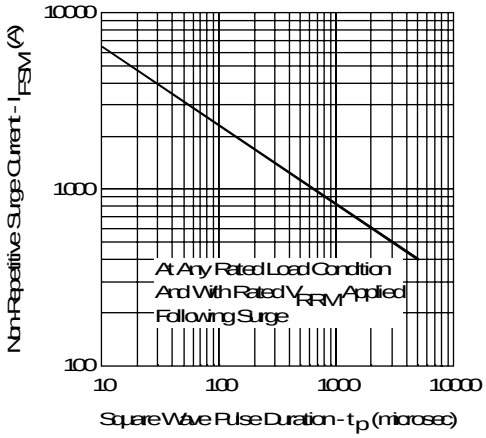


Fig. 7 - Maximum Non-Repetitive Surge Current

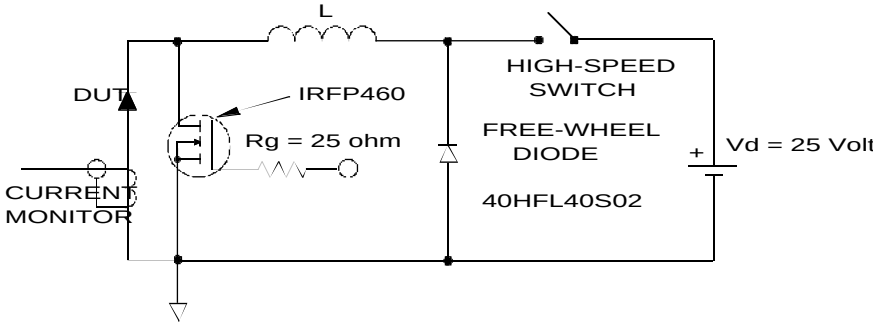


Fig. 8 - Unclamped Inductive Test Circuit