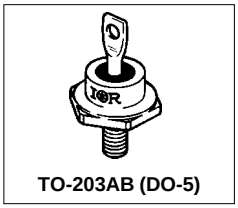
Bulletin PD-2.329 rev. B 11/02

International
IOR Rectifier

1N6097
1N6098

SCHOTTKY RECTIFIER

50 Amp



TO-203AB (DO-5)

Major Ratings and Characteristics

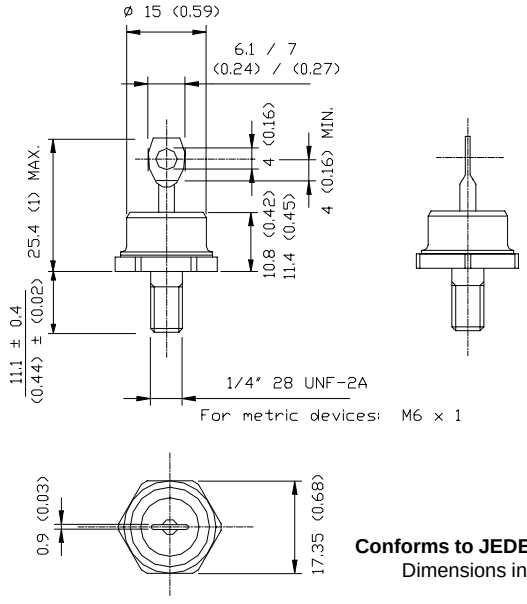
Characteristics	1N609.	Units
$I_{F(AV)}$ Rectangular waveform	50*	A
V_{RRM}	30/40*	V
I_{FSM} @60Hz	800*	A
V_F @160Apk, T_J= 70°C	0.86*	V
T_J range	-65 to 125*	°C

* 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



Conforms to JEDEC Outline DO-203AB (DO-5)
Dimensions in millimeters and (inches)

Voltage Ratings

	Part number	1N6097	1N6098
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	50*	A	50% duty cycle @ T_C = 70 °C, rectangular wave form	
I_{FSM}	Max. Peak One Cycle Non-Repetitive Surge Current See Fig. 7	10,800	A	5µs Sine or 3µs Rect. pulse	Following any rated load condition and with rated V_{RRM} applied
		800*		60Hz halfwave, single phase	
E_{AS}	Non-Repetitive Avalanche Energy	81	mJ	T_J = 25 °C, I_{AS} = 12 Amps, L = 1.12 mH	
I_{AR}	Repetitive Avalanche Current	12	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	0.60*	V	@ 10A	T_J = 25 °C
		0.86*	V	@ 160A	T_J = 70 °C
I_{RM}	Max. Reverse Leakage Current (1) See Fig. 2	75	mA	T_J = 25 °C	V_R = rated V_R
		250*	mA	T_J = 125 °C	
C_T	Max. Junction Capacitance	7000*	pF	V_R = 1V_{DC}, (test signal range 100Khz to 1Mhz) 25 °C	
L_S	Typical Series Inductance	7.5	nH	Measured from top of terminal to mounting plane	
dv/dt	Max. Voltage Rate of Change (Rated V_R)	10000	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		1.0*	°C/W	DC operation See Fig. 4
R_{thCS}	Typical Thermal Resistance, Case to Heatsink		0.25	°C/W	Mounting surface, smooth and greased
wt	Approximate Weight		15 (0.53)	g (oz.)	
T	Mounting Torque	Min.	23 (20)	Kg-cm (Ibf-in)	Non-lubricated threads
		Max.	46 (40)		
	Case Style		DO-203AB(DO-5)		JEDEC

* JEDEC Registered Values

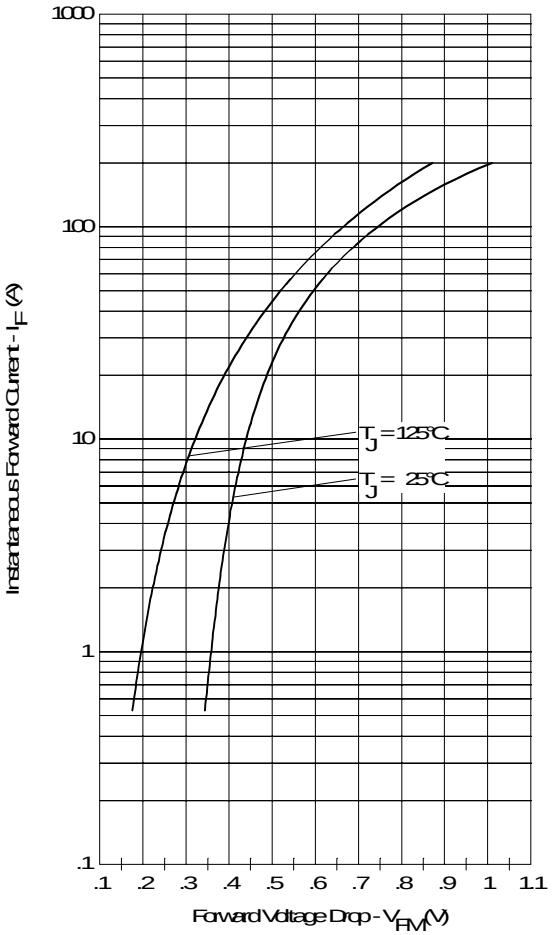


Fig. 1 - Maximum Forward Voltage Drop Characteristics

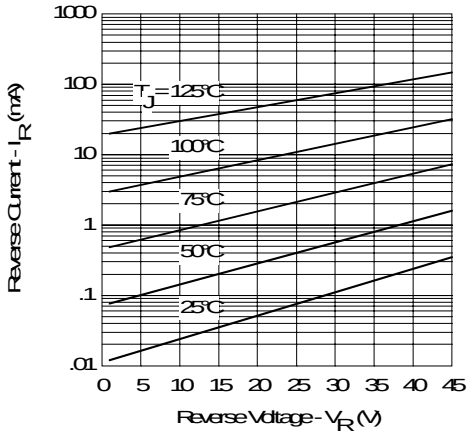


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

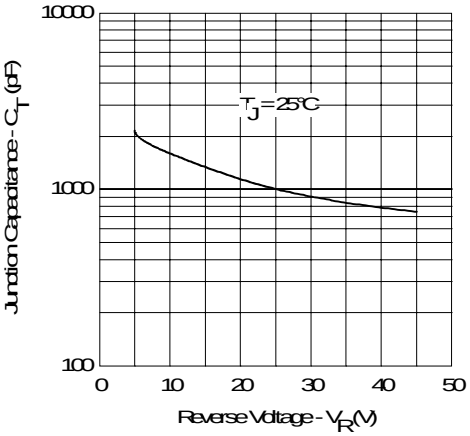


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

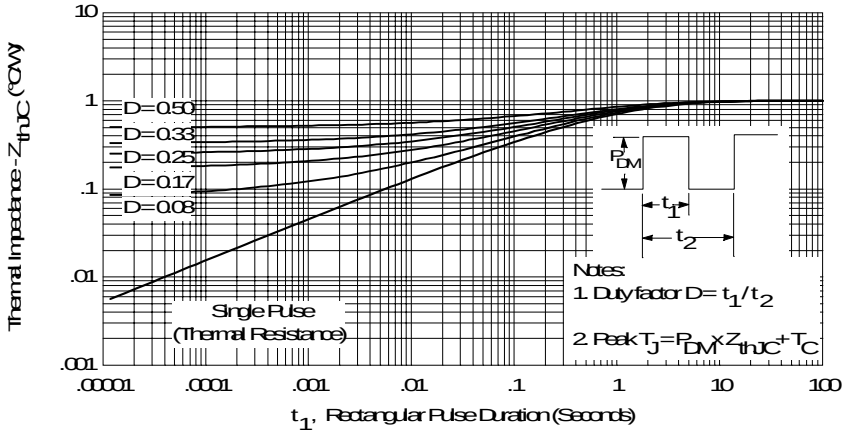


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics

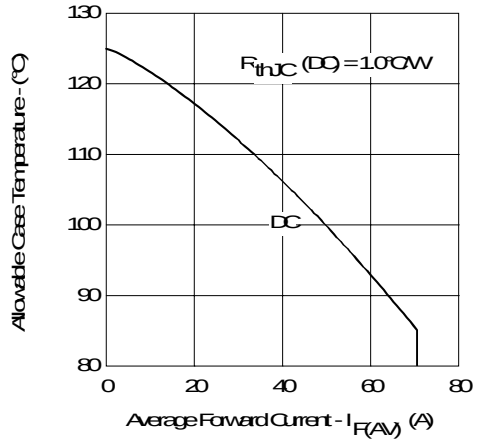


Fig. 5 - Maximum Allowable Case Temperature Vs. Average Forward Current

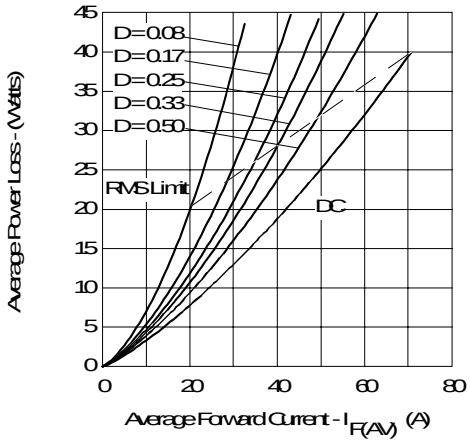


Fig. 6 - Forward Power Loss Characteristics

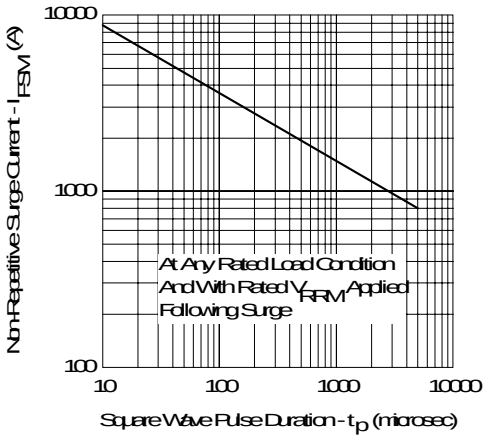


Fig. 7 - Maximum Non-Repetitive Surge Current

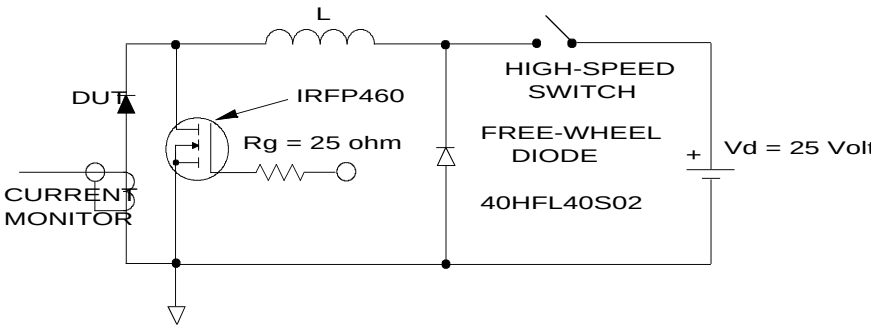


Fig. 8 - Unclamped Inductive Test Circuit

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

International
IOR Rectifier

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