PD-2.289 rev. B 02/2000

International IOR Rectifier

11DQ09
11DQ10

SCHOTTKY RECTIFIER

1.1 Amp

Major Ratings and Characteristics

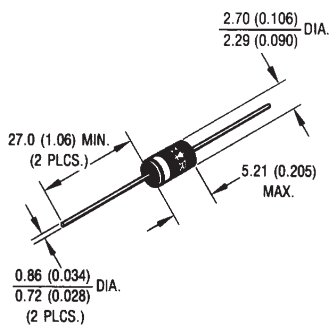
Characteristics		11DQ..	Units
$I_{F(AV)}$	Rectangular waveform	1.1	A
V_{RRM}		90/100	V
I_{FSM}	@ tp = 5 μs sine	85	A
V_F	@ 1 Apk, T_J = 25°C	0.85	V
T_J	range	-40 to 150	°C

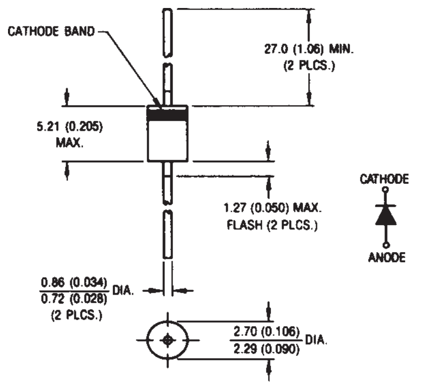
Description/Features

The 11DQ.. axial leaded Schottky rectifier has been optimized for very low forward voltage drop, with moderate leakage. Typical applications are in switching power supplies, converters, free-wheeling diodes, and reverse batteryprotection.

- Low profile, axial leaded outline
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Very low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability

CASE STYLE AND DIMENSIONS





Conform to JEDEC Outline DO-204AL (DO-41)

Dimensions in millimeters and inches

Voltage Ratings

	Part number	11DQ09	11DQ10
V_R	Max. DC Reverse Voltage (V)	90	100
V_{RWM}	Max. Working Peak Reverse Voltage (V)		

Absolute Maximum Ratings

	Parameters	11DQ..	Units	Conditions	
$I_{F(AV)}$	Max. Average Forward Current * See Fig. 4	1.1	A	50% duty cycle @ T_C=75°C, rectangular wave form	
I_{FSM}	Max. Peak One Cycle Non-Repetitive Surge Current * See Fig. 6	85	A	5μs Sine or 3μs Rect. pulse	Following any rated load condition and with rated V_{RRM} applied
		14		10ms Sine or 6ms Rect. pulse	

Electrical Specifications

	Parameters	11DQ..	Units	Conditions	
V_{FM}	Max. Forward Voltage Drop * See Fig. 1 (1)	0.85	V	@ 1A	T_J = 25 °C
		0.96	V	@ 2A	
		0.68	V	@ 1A	T_J = 125 °C
		0.78	V	@ 2A	
I_{RM}	Max. Reverse Leakage Current * See Fig. 2 (1)	0.5	mA	T_J = 25 °C	V_R = rated V_R
		1.0	mA	T_J = 125 °C	
C_T	Typical Junction Capacitance	35	pF	V_R = 5V_{DC}, (test signal range 100Khz to 1Mhz) 25°C	
L_S	Typical Series Inductance	8.0	nH	Measured lead to lead 5mm from package body	

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

Thermal-Mechanical Specifications

	Parameters	11DQ..	Units	Conditions
T_J	Max. Junction Temperature Range	-40 to 150	°C	
T_{stg}	Max. Storage Temperature Range	-40 to 150	°C	
R_{thJA}	Max. Thermal Resistance Junction to Ambient	130	°C/W	DC operation Without cooling fin
R_{thJA}	Typical Thermal Resistance Junction to Ambient with PC Board Mounted	81	°C/W	PC board mounted [L=8mm (0.315in.)] Solder land area 100mm^2 (0.155in^2.)
wt	Approximate Weight	0.33(0.012)	g (oz.)	
	Case Style	DO-204AL(DO-41)		

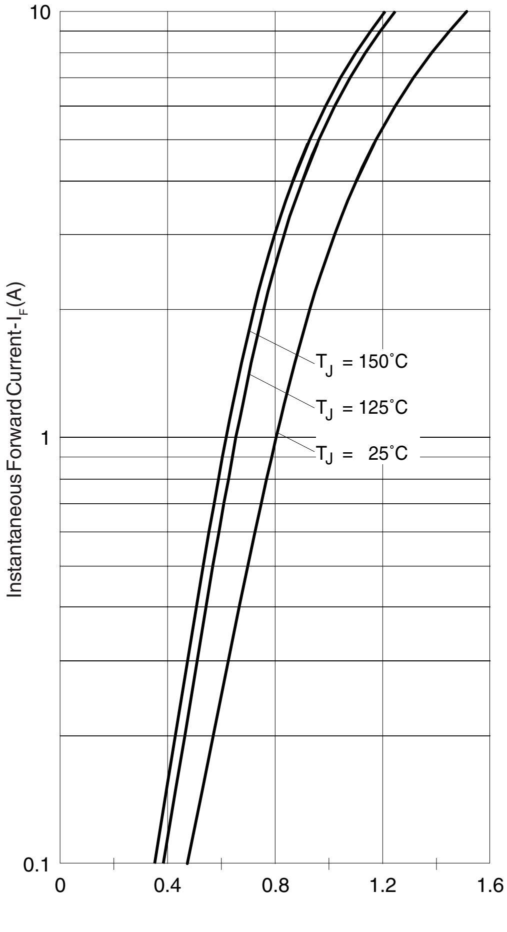


Fig. 1 - Max. Forward Voltage Drop Characteristics

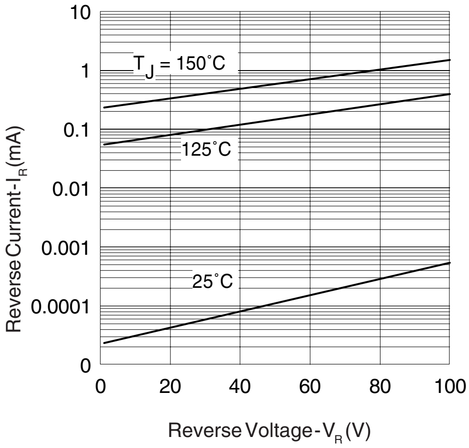


Fig. 2 - Typical Values Of Reverse Current Vs. Reverse Voltage

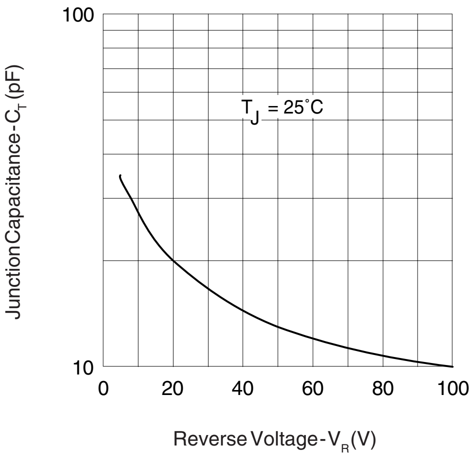


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

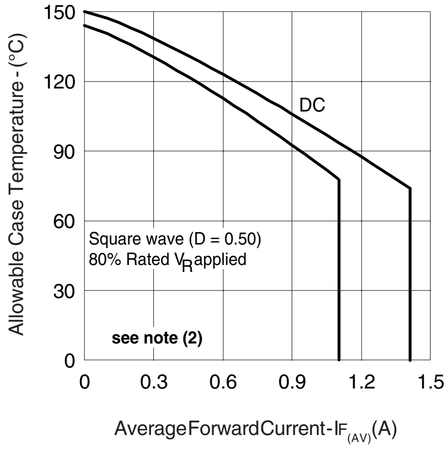


Fig. 4 - Max. Allowable Case Temperature Vs. Average Forward Current

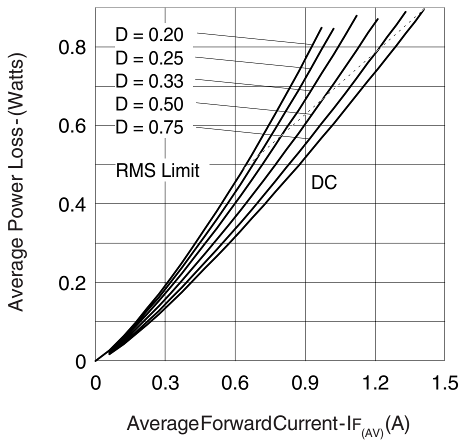


Fig. 5 - Forward Power Loss Characteristics

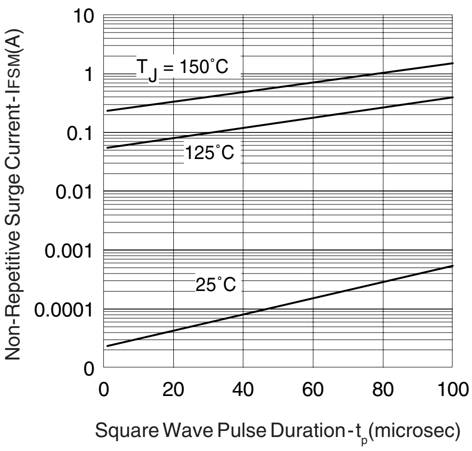


Fig. 6 - Max. Non-Repetitive Surge Current

(2) Formula used: $T_C = T_J - (Pd + Pd_{REV}) \times R_{thJC}$;

Pd = Forward Power Loss = $I_{F(AV)} \times V_{FM}$ @ $(I_{F(AV)} / D)$ (see Fig. 6);

Pd_{REV} = Inverse Power Loss = $V_{R1} \times I_R (1 - D)$; I_R @ V_{R1} = 80% rated V_R

International
IOR Rectifier

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