Bulletin PD-2.288 rev. B 05/00

International
IOR Rectifier

11DQ05
11DQ06

SCHOTTKY RECTIFIER

1.1 Amp

Major Ratings and Characteristics

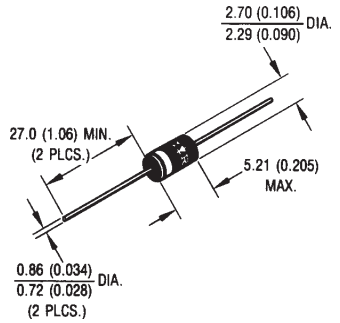
Characteristics		11DQ..	Units
$I_{F(AV)}$	Rectangular waveform	1.1	A
V_{RRM}		50/60	V
I_{FSM}	@ tp = 5 µs sine	150	A
V_F	@ 1 Apk, T_J = 25°C	0.56	V
T_J	range	-40 to 150	°C

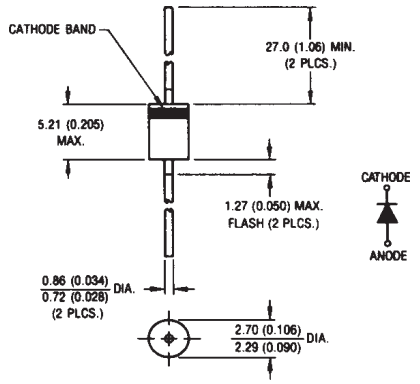
Description/Features

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	11DQ05	11DQ06
V_R	Max. DC Reverse Voltage (V)	50	60
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_A=84°C, rectangular waveform	
I_{FSM}	Max. Peak One Cycle Non-Repetitive	150	A	5µs Sine or 3µs Rect. pulse	Following any rated load condition and with rated V_{RRM} applied
	Surge Current * See Fig. 6	25		10ms Sine or 6ms Rect. pulse	

Electrical Specifications

	Parameters	11DQ..	Units	Conditions	
V_{FM}	Max. Forward Voltage Drop	0.56	V	@ 1A	T_J = 25 °C
	* See Fig. 1 (1)	0.74	V	@ 2A	
		0.52	V	@ 1A	T_J = 125 °C
		0.64	V	@ 2A	
I_{RM}	Max. Reverse Leakage Current	1.0	mA	T_J = 25 °C	V_R = rated V_R
	* See Fig. 2 (1)	11	mA	T_J = 125 °C	
C_T	Typical Junction Capacitance	55	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)		

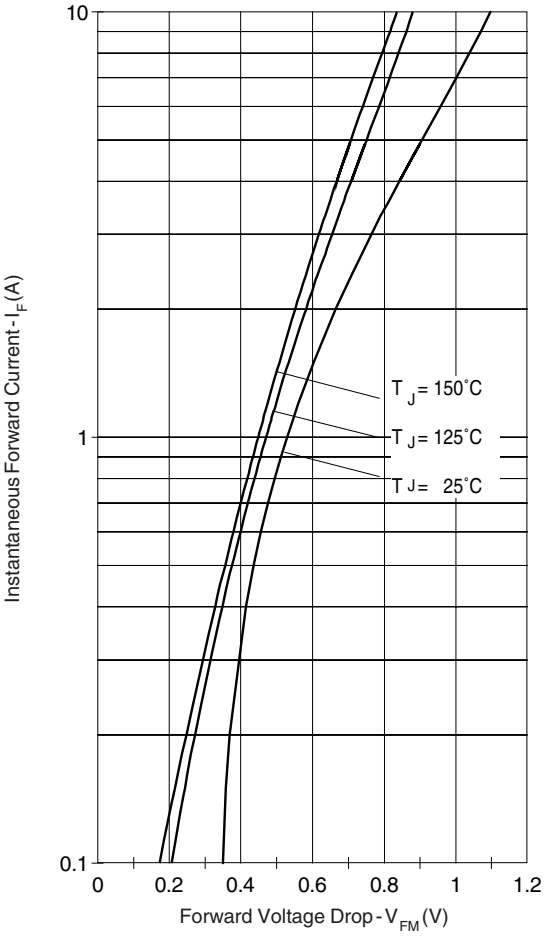


Fig. 1 - Maximum Forward Voltage Drop Characteristics

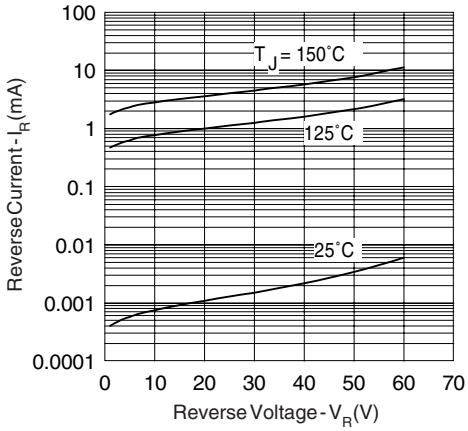


Fig. 2 - Typical Values of Reverse Current
Vs. Reverse Voltage

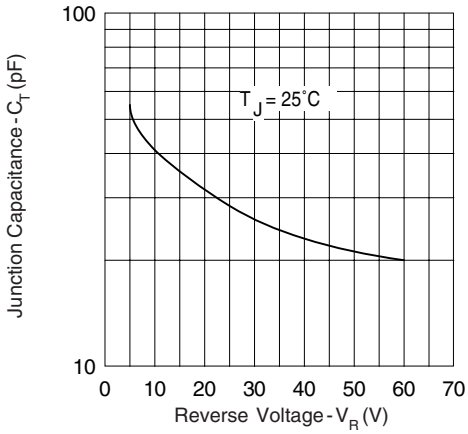


Fig. 3 - Typical Junction Capacitance
Vs. Reverse Voltage

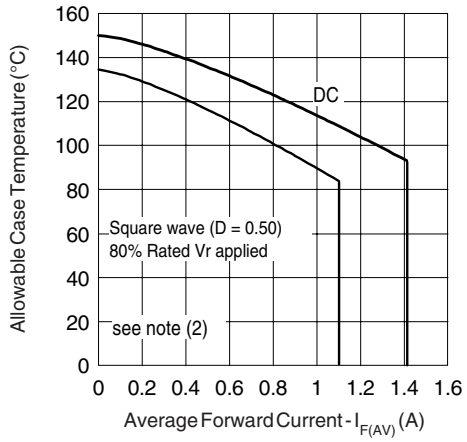


Fig. 4 - Maximum Ambient Temperature Vs. Average Forward Current, Printed Circuit Board Mounted

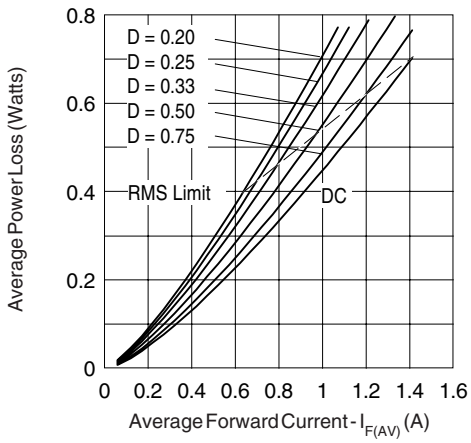


Fig. 5 - Forward Power Loss Characteristics

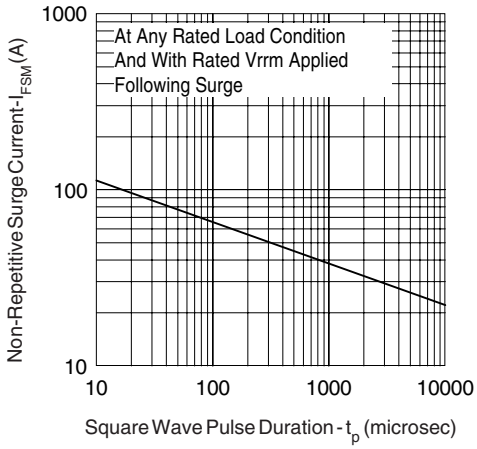


Fig. 6 - Maximum Non-Repetitive Surge Current

(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