

SCHOTTKY RECTIFIER

1.1 Amp

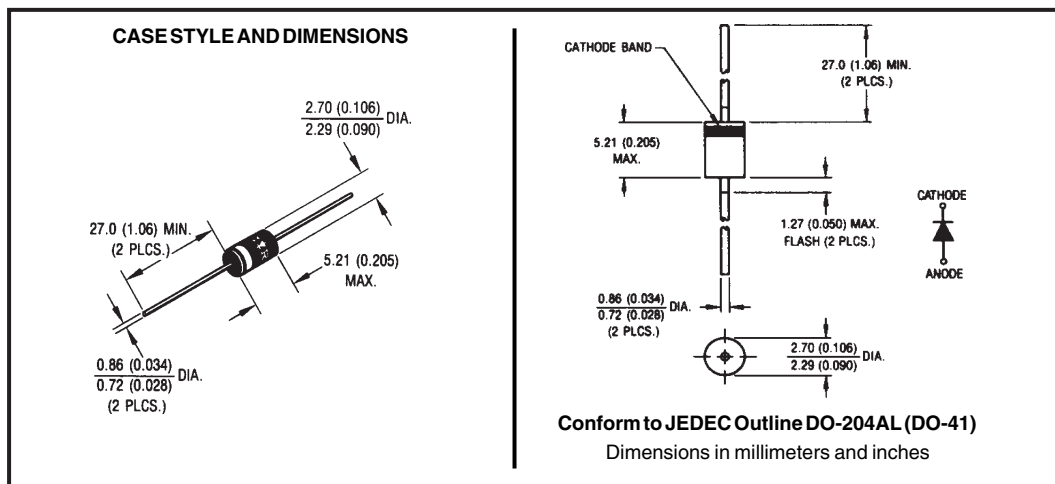
Major Ratings and Characteristics

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

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 battery protection.

- 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



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 @ $T_A = 84^\circ\text{C}$, rectangular waveform
I_{FSM} Max. Peak One Cycle Non-Repetitive Surge Current * See Fig. 6	150	A	Following any rated load condition and with rated V_{RWM} applied
	25		

Electrical Specifications

Parameters	11DQ..	Units	Conditions
V_{FM} Max. Forward Voltage Drop * See Fig. 1 (1)	0.56	V	@ 1A $T_J = 25^\circ\text{C}$
	0.74	V	@ 2A $T_J = 25^\circ\text{C}$
	0.52	V	@ 1A $T_J = 125^\circ\text{C}$
	0.64	V	@ 2A $T_J = 125^\circ\text{C}$
I_{RM} Max. Reverse Leakage Current * See Fig. 2 (1)	1.0	mA	$T_J = 25^\circ\text{C}$ $V_R = \text{rated } V_R$
	11	mA	$T_J = 125^\circ\text{C}$ $V_R = \text{rated } V_R$
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 < 300 μs , Duty Cycle <2%**Thermal-Mechanical Specifications**

Parameters	11DQ..	Units	Conditions
T_J Max. Junction Temperature Range	-40 to 150	$^\circ\text{C}$	
T_{stg} Max. Storage Temperature Range	-40 to 150	$^\circ\text{C}$	
R_{thJA} Max. Thermal Resistance Junction to Ambient	130	$^\circ\text{C/W}$	DC operation Without cooling fin
R_{thJA} Typical Thermal Resistance Junction to Ambient with PC Board Mounted	81	$^\circ\text{C/W}$	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)		

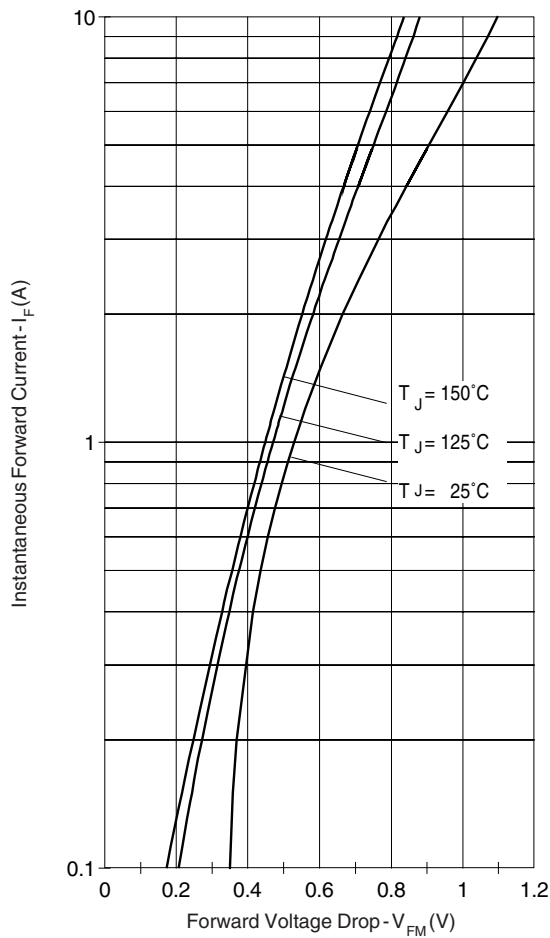


Fig. 1 - Maximum Forward Voltage Drop Characteristics

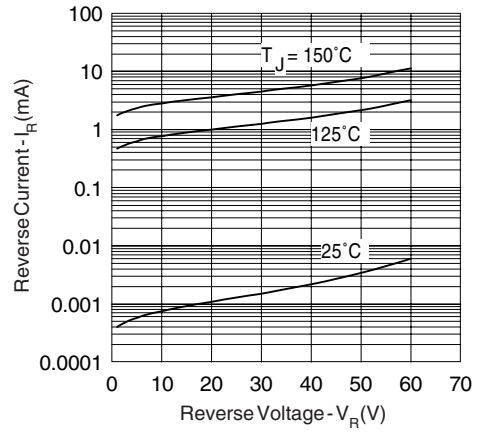


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

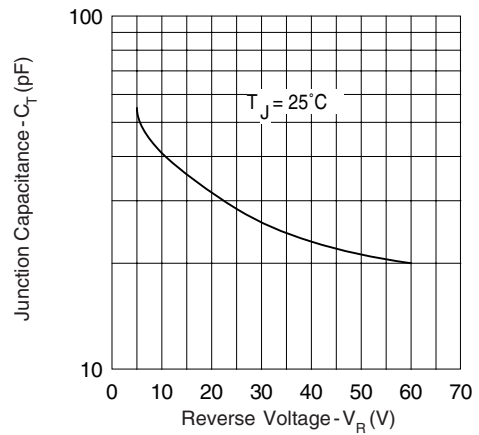


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

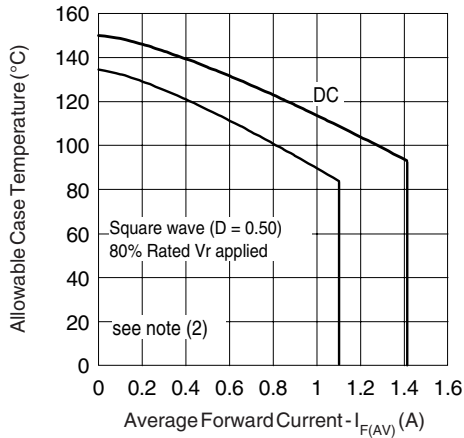


Fig. 4 - Maximum Ambient Temperature Vs. Average Forward Current, Printed Circuit Board Mounted

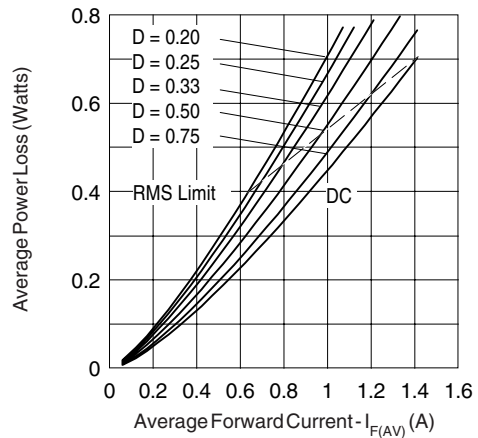


Fig. 5 - Forward Power Loss Characteristics

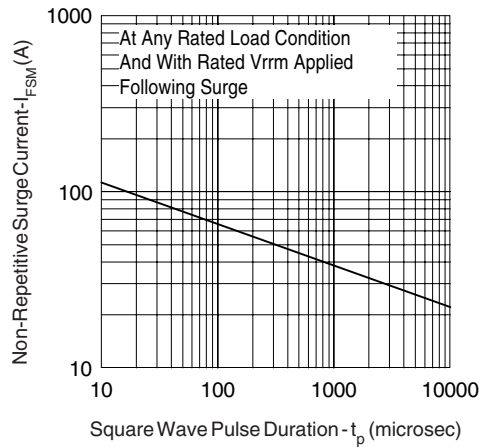


Fig. 6 - Maximum Non-Repetitive Surge Current

(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