

SCHOTTKY RECTIFIER

1.1 Amp

Major Ratings and Characteristics

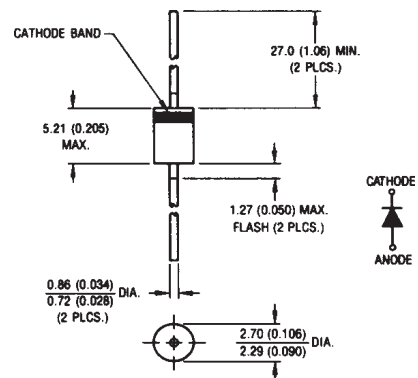
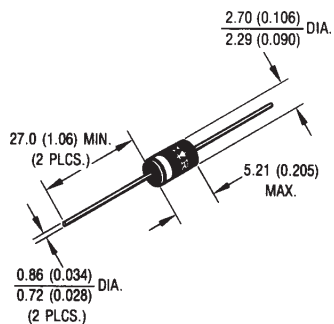
Characteristics	11DQ..	Units
$I_{F(AV)}$ Rectangular waveform	1.1	A
V_{RRM}	90/100	V
I_{FSM} @ $t_p = 5 \mu s$ sine	85	A
V_F @ 1 Apk, $T_J = 25^\circ C$	0.85	V
T_J range	-40 to 150	$^\circ C$

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

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 @ $T_C = 75^\circ\text{C}$, rectangular waveform
I_{FSM} Max. Peak One Cycle Non-Repetitive Surge Current * See Fig. 6	85	A	5 μs Sine or 3 μs Rect. pulse
	14		10ms Sine or 6ms Rect. pulse

Following any rated load condition and with rated V_{RWM} applied

Electrical Specifications

Parameters	11DQ..	Units	Conditions
V_{FM} Max. Forward Voltage Drop * See Fig. 1 (1)	0.85	V	@ 1A
	0.96	V	@ 2A
	0.68	V	@ 1A
	0.78	V	@ 2A
I_{RM} Max. Reverse Leakage Current * See Fig. 2 (1)	0.5	mA	$T_J = 25^\circ\text{C}$
	1.0	mA	$T_J = 125^\circ\text{C}$
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 < 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 (0.315 in.)] Solder land area 100mm ² (0.155 in ² .)
wt Approximate Weight	0.33 (0.012)	g (oz.)	
Case Style	DO-204AL (DO-41)		

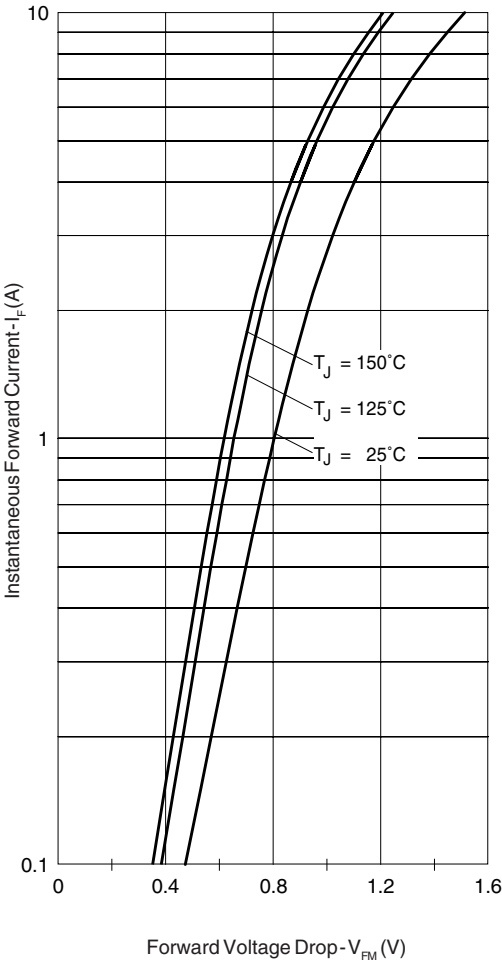


Fig.1 - Max. Forward Voltage Drop Characteristics

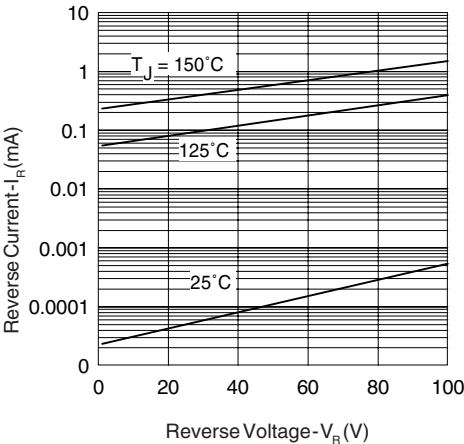


Fig.2 - Typical Values Of Reverse Current Vs. Reverse Voltage

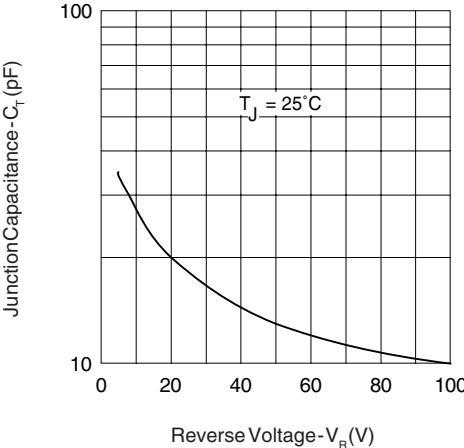


Fig.3 - Typical Junction Capacitance Vs. Reverse Voltage

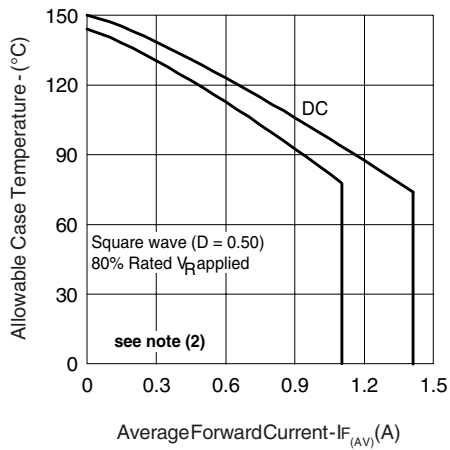


Fig. 4 - Max. Allowable Case Temperature Vs. Average Forward Current

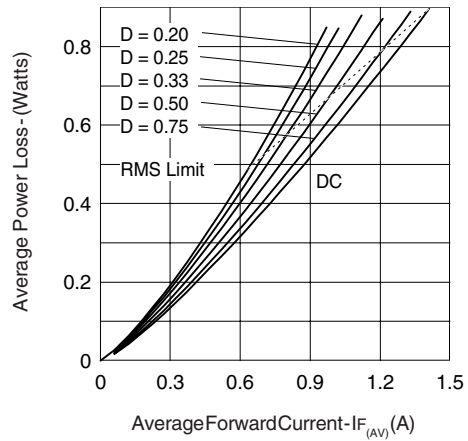


Fig. 5 - Forward Power Loss Characteristics

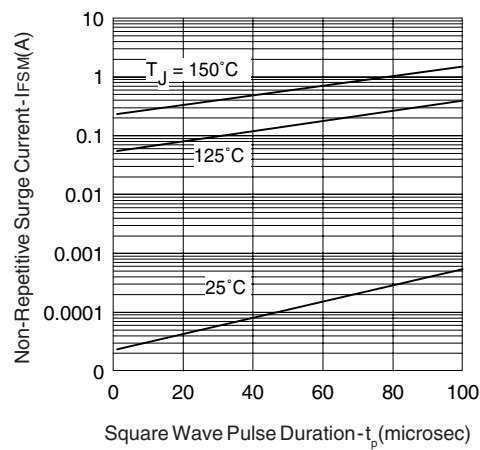


Fig. 6 - Max. Non-Repetitive Surge Current

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

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

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

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