



## Voltage Ratings

Part number	11DQ03	11DQ04
$V_R$ Max. DC Reverse Voltage (V)	30	40
$V_{RWM}$ 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 wave form
$I_{FSM}$ Max. Peak One Cycle Non-Repetitive Surge Current * See Fig. 6	225	A	5 $\mu\text{s}$ Sine or 3 $\mu\text{s}$ Rect. pulse
	35		10ms Sine or 6ms Rect. pulse
$E_{AS}$ Non-Repetitive Avalanche Energy	3.0	mJ	$T_J = 25^\circ\text{C}$ , $I_{AS} = 1.0$ Amps, $L = 6$ mH
$I_{AR}$ Repetitive Avalanche Current	1.0	A	Current decaying linearly to zero in 1 $\mu\text{sec}$ Frequency limited by $T_J$ max. $V_A = 1.5 \times V_R$ typical

## Electrical Specifications

Parameters	11DQ..	Units	Conditions
$V_{FM}$ Max. Forward Voltage Drop * See Fig. 1 (1)	0.55	V	@ 1A
	0.71	V	@ 2A
	0.50	V	@ 1A
	0.61	V	@ 2A
$I_{RM}$ Max. Reverse Leakage Current * See Fig. 2 (1)	1.0	mA	$T_J = 25^\circ\text{C}$
	6.0	mA	$T_J = 125^\circ\text{C}$
$C_T$ Typical Junction Capacitance	60	pF	$V_R = 5V_{DC}$ (test signal range 100Khz to 1Mhz) $25^\circ\text{C}$
$L_S$ Typical Series Inductance	8.0	nH	Measured lead to lead 5mm from package body
$dv/dt$ Max. Voltage Rate of Change	10000	V/ $\mu\text{s}$	(Rated $V_R$ )

(1) Pulse Width < 300 $\mu\text{s}$ , 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	100	$^\circ\text{C/W}$	DC operation Without cooling fin
$R_{thJL}$ Typical Thermal Resistance Junction to Lead	81	$^\circ\text{C/W}$	DC Operation (* See Fig. 4)
wt Approximate Weight	0.33(0.012)	g (oz.)	
Case Style	DO-204AL(DO-41)		

(\*)  $\frac{dP_{tot}}{dT_J} < \frac{1}{R_{th(j-a)}}$  thermal runaway condition for a diode on its own heatsink

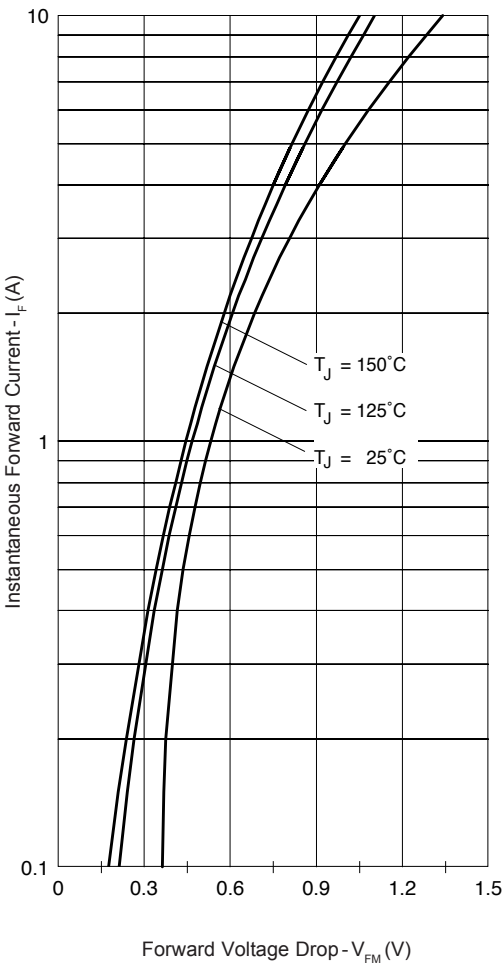


Fig. 1 - Max. Forward Voltage Drop Characteristics

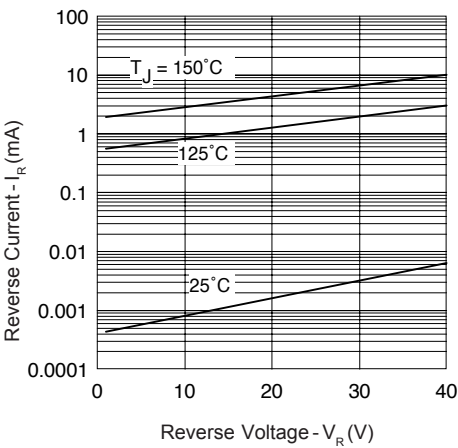


Fig. 2 - Typical Values Of Reverse Current Vs. Reverse Voltage

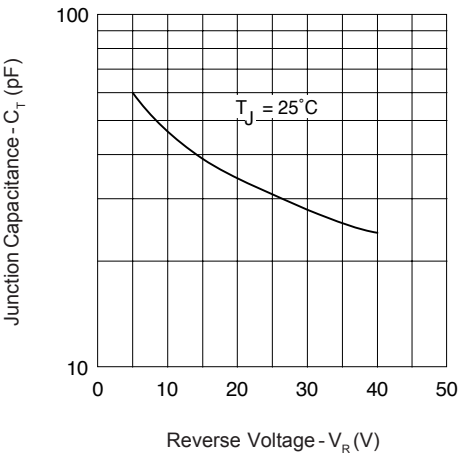
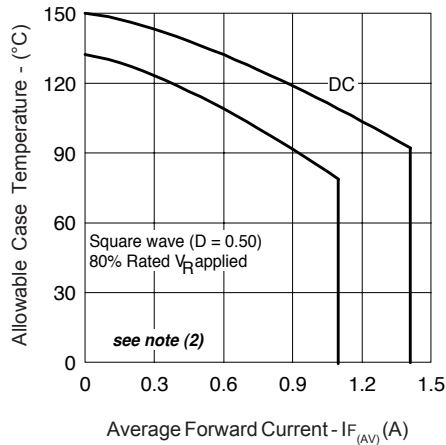
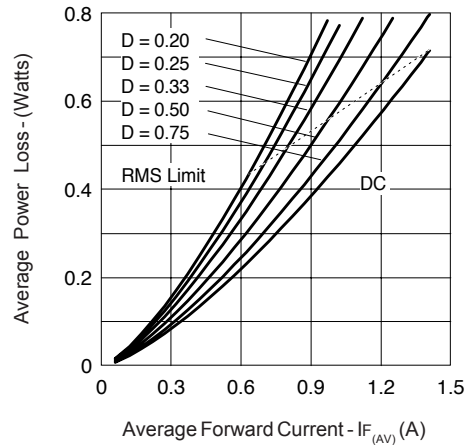


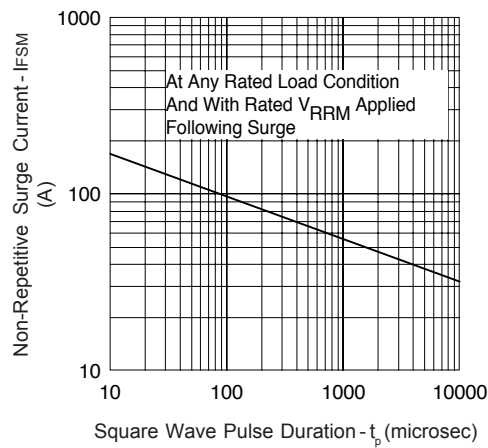
Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage



**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 =  $V_{R1} \times I_{R1} (1 - D)$ ;  $I_{R1} @ V_{R1} = 80\%$  rated  $V_R$

## Ordering Information Table

Device Code				
11	D	Q	04	TR
①	②	③	④	⑤
1	-	11 = 1.1A (Axial and small packages - Current is x10)		
2	-	D = DO-41 package		
3	-	Q = Schottky Q.. Series		
4	-	04 = Voltage Ratings		
5	-	TR = Tape & Reel package ( 5000 pcs)		
	-	= Box package (1000 pcs)		

04 = 40V  
 03 = 30V

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

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**IR** Rectifier

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