

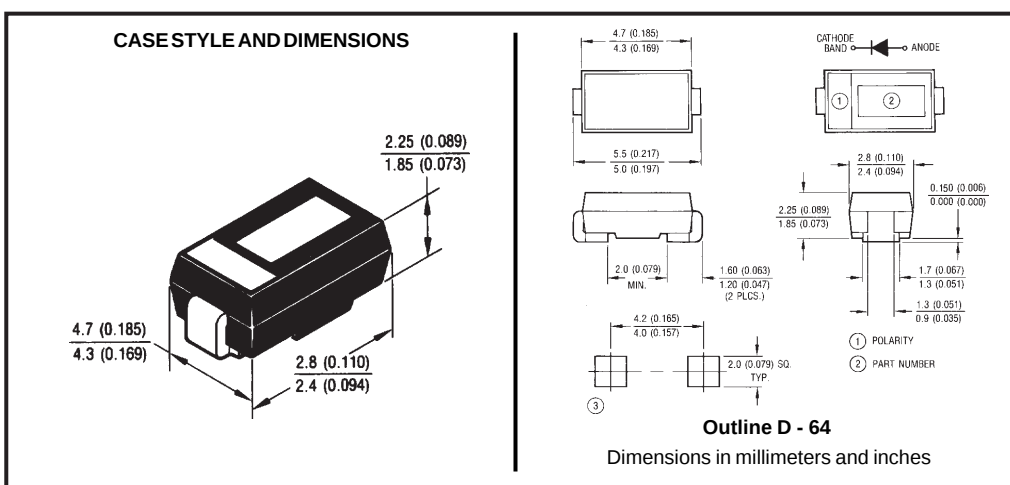
Major Ratings and Characteristics

Characteristics	10MQ090	Units
$I_{F(AV)}$ Rectangular waveform	0.77	A
V_{RRM}	90	V
I_{FSM} @ $t_p = 5 \mu s$ sine	40	A
V_F @ 0.77 Apk, $T_J = 125^\circ C$	0.65	V
T_J range	-40 to 125	$^\circ C$

Description/Features

The 10MQ090 surface mount Schottky rectifier has been designed for applications requiring low forward drop and very small foot prints on PC boards. Typical applications are in disk drives, switching power supplies, converters, free-wheeling diodes, battery charging, and reverse battery protection.

- Small foot print, surface mountable
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability



Voltage Ratings

Part number	10MQ090
V_R Max. DC Reverse Voltage (V)	90
V_{RWM} Max. Working Peak Reverse Voltage (V)	

Absolute Maximum Ratings

Parameters	10MQ	Units	Conditions
$I_{F(AV)}$ Max. Average Forward Current * See Fig. 5	0.77	A	50% duty cycle @ $T_C = 110^\circ\text{C}$, rectangular wave form On PC board 3mm. x 3mm. island
I_{FSM} Max. Peak One Cycle Non-Repetitive Surge Current * See Fig. 7	40	A	5 μs Sine or 3 μs Rect. pulse
	10		10ms Sine or 6ms Rect. pulse

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

Electrical Specifications

Parameters	10MQ	Units	Conditions
V_{FM} Max. Forward Voltage Drop (1) * See Fig. 1	0.81	V	@ 0.77A
	0.96	V	@ 1.54A
	0.65	V	@ 0.77A
	0.76	V	@ 1.54A
I_{RM} Max. Reverse Leakage Current (1) * See Fig. 2	1	mA	$T_J = 25^\circ\text{C}$
	5.0	mA	$T_J = 125^\circ\text{C}$
C_T Typical Junction Capacitance	28	pF	$V_R = 10V_{DC}$, $T_J = 25^\circ\text{C}$, test signal = 1Mhz
L_S Typical Series Inductance	2.0	nH	Measured lead to lead 5mm from package body

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

Thermal-Mechanical Specifications

Parameters	10MQ	Units	Conditions
T_J Max. Junction Temperature Range	-40 to 125	$^\circ\text{C}$	
T_{stg} Max. Storage Temperature Range	-40 to 125	$^\circ\text{C}$	
R_{thJA} Max. Thermal Resistance Junction to Ambient	160	$^\circ\text{C/W}$	DC operation
wt Approximate Weight	0.07(0.026)	g(oz.)	
Case Style	D-64		

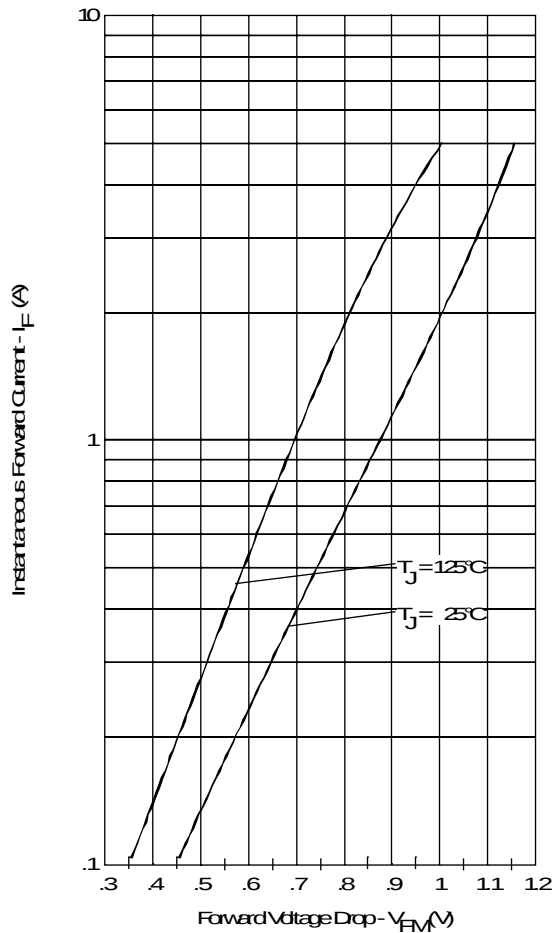


Fig. 1 - Maximum Forward Voltage Drop Characteristics

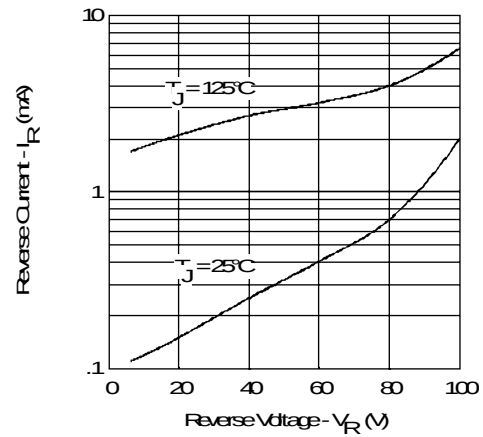


Fig. 2 - Typical Peak Reverse Current Vs. Peak Reverse Voltage

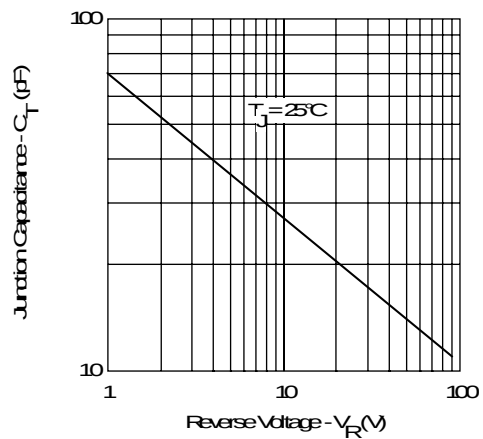


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

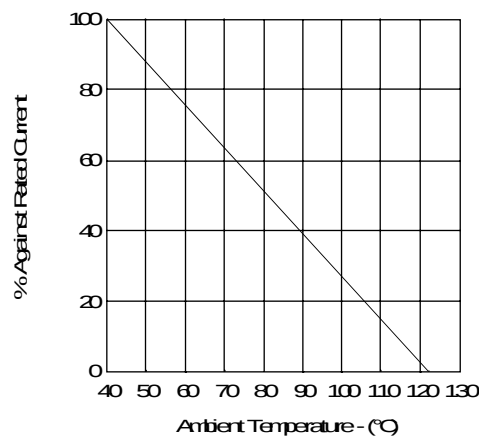


Fig. 4 - Maximum % Against Rated Current Vs. Ambient Temperature

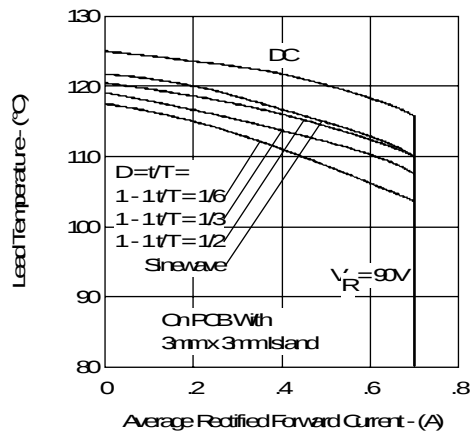


Fig. 5 - Maximum Average Forward Current
Vs. Allowable Lead Temperature

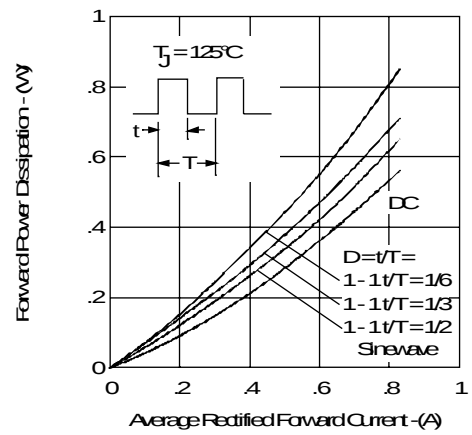


Fig. 6 - Maximum Average Dissipation
Vs. Average Forward Current

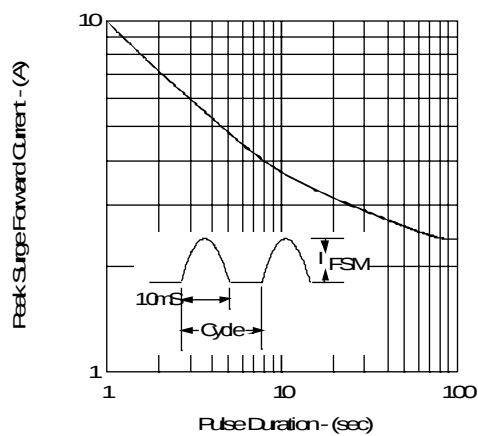


Fig. 7 - Maximum Peak Surge Forward Current Vs. Pulse Duration