PD-2.284 rev. A 12/97

International
IOR Rectifier

10MQ040

SCHOTTKY RECTIFIER 1.1 Amp

Major Ratings and Characteristics

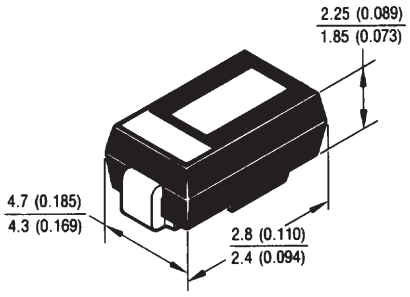
Characteristics	10MQ040	Units
$I_{F(AV)}$ Rectangular waveform	1.1	A
V_{RRM}	40	V
I_{FSM} @tp = 5 µs sine	120	A
V_F @1.1Apk, T_J=125°C	0.51	V
T_J range	-40 to 125	°C

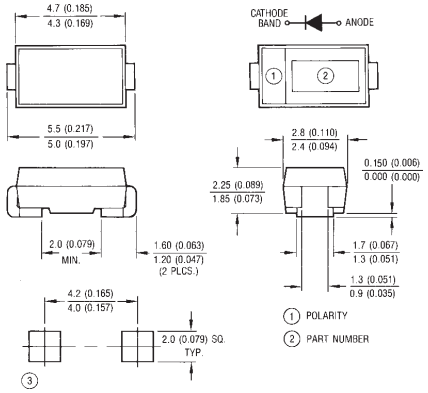
Description/Features

The 10MQ040 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

CASE STYLE AND DIMENSIONS





Outline D - 64
Dimensions in millimeters and inches

Voltage Ratings

	Part number	10MQ040
V_R	Max. DC Reverse Voltage (V)	40
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	1.1	A	50% duty cycle @ T_C = 92 °C, rectangular wave form On PC board 3mm. x 3mm. island	
I_{FSM}	Max. Peak One Cycle Non-Repetitive	120	A	5µs Sine or 3µs Rect. pulse	Following any rated load condition and with rated V_{RRM} applied
	Surge Current *See Fig. 7	30		10ms Sine or 6ms Rect. pulse	

Electrical Specifications

	Parameters	10MQ	Units	Conditions	
V_{FM}	Max. Forward Voltage Drop (1)	0.55	V	@ 1.1A	T_J = 25 °C
	* See Fig. 1	0.71	V	@ 2.2A	
		0.51	V	@ 1.1A	T_J = 125 °C
		0.67	V	@ 2.2A	
I_{RM}	Max. Reverse Leakage Current (1)	1	mA	T_J = 25 °C	V_R = rated V_R
	* See Fig. 2	50	mA	T_J = 125 °C	
C_T	Typical Junction Capacitance	50	pF	V_R = 10V_{DC}, T_J = 25°C, test signal = 1Mhz	
L_S	Typical Series Inductance	2.0	nH	Measured lead to lead 5mm from package body	

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

Thermal-Mechanical Specifications

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

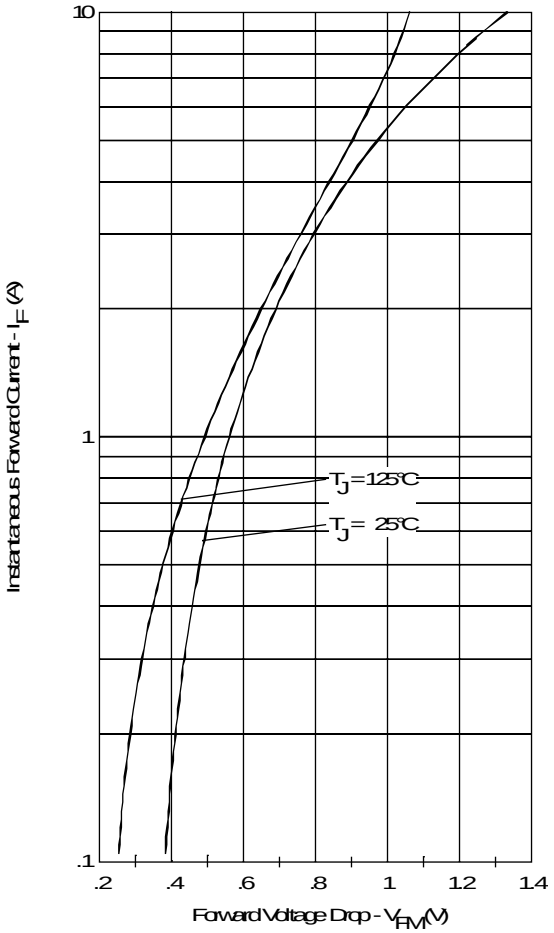


Fig. 1 - Maximum Forward Voltage Drop Characteristics

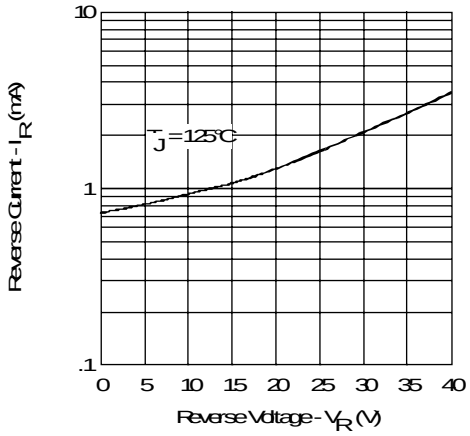


Fig. 2 - Typical Peak Reverse Current
Vs. Reverse Voltage

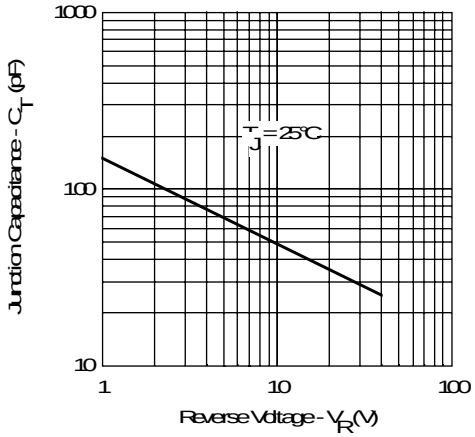


Fig. 3 - Typical Junction Capacitance
Vs. Reverse Voltage

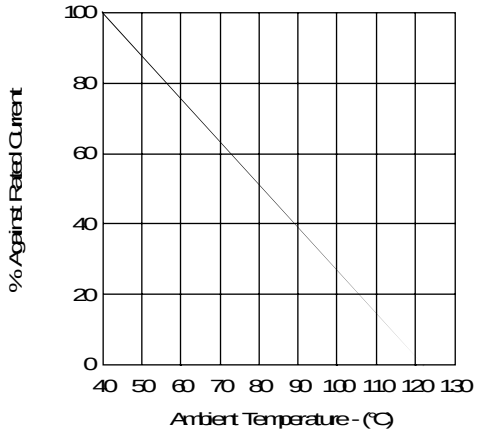


Fig. 4 - Maximum % Against Rated Current Vs. Ambient Temperature

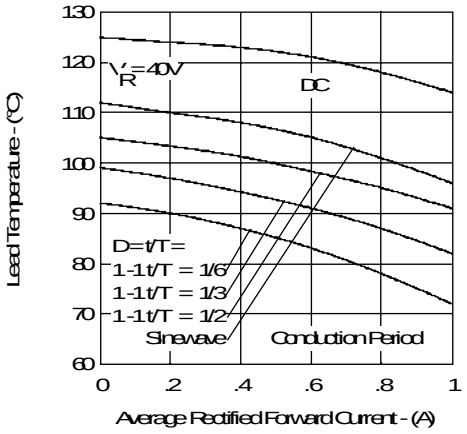


Fig. 5 - Maximum Average Forward Current
Vs. Allowable Lead Temperature

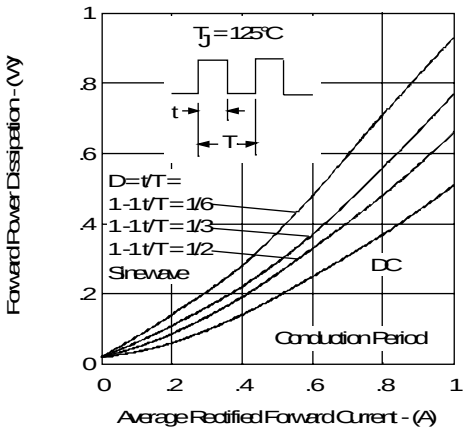


Fig. 6 - Maximum Average Forward Dissipation
Vs. Average Forward Current

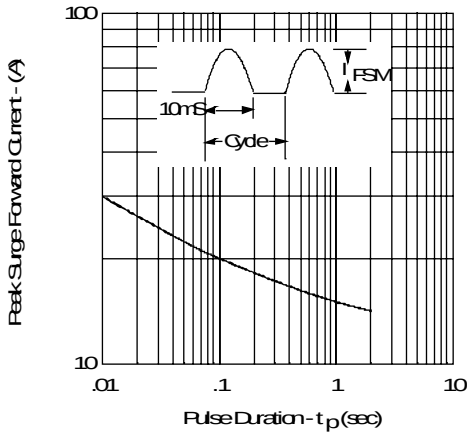


Fig. 7 - Maximum Peak Surge Forward Current Vs. Pulse Duration