PD-2.285 rev. A 12/97

International
IOR Rectifier

# 10MQ060

## SCHOTTKY RECTIFIER 0.77 Amp

### Major Ratings and Characteristics

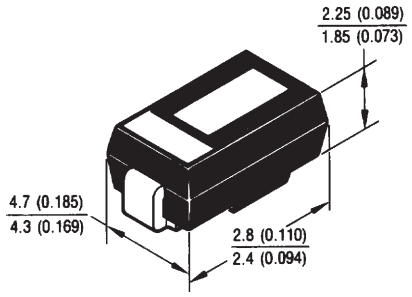
| Characteristics | | 10MQ060 | Units |
|---|---|---|---|
| $I_{F(AV)}$ | Rectangular waveform | 0.77 | A |
| $V_{RRM}$ | | 60 | V |
| $I_{FSM}$ | @ tp = 5 µs sine | 40 | A |
| $V_F$ | @ 0.77 Apk, $T_J$ = 125°C | 0.57 | V |
| $T_J$ | range | -40 to 125 | °C |

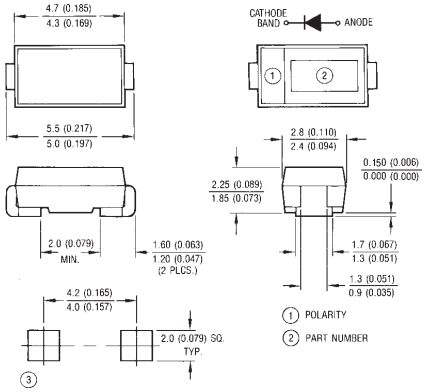
### Description/Features

The 10MQ060 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 | 10MQ060 |
|---|---|---|
| $V_R$ | Max. DC Reverse Voltage (V) | 60 |
| $V_{RWM}$ | Max. Working Peak Reverse Voltage (V) | |

## Absolute Maximum Ratings

| | Parameters | 10MQ | Units | Conditions | |
|---|---|---|---|---|---|
| $I_{F(AV)}$ | Max. Average Forward Current<br>* See Fig. 5 | 0.77 | A | 50% duty cycle @ $T_C$ = 110 °C, rectangular wave form<br>On PC board 3mm. x 3mm. island | |
| $I_{FSM}$ | Max. Peak One Cycle Non-Repetitive | 40 | A | 5µs Sine or 3µs Rect. pulse | Following any rated load condition and with rated $V_{RRM}$ applied |
| | Surge Current * See Fig. 7 | 10 | | 10ms Sine or 6ms Rect. pulse | |

## Electrical Specifications

| | Parameters | 10MQ | Units | Conditions | |
|---|---|---|---|---|---|
| $V_{FM}$ | Max. Forward Voltage Drop (1) | 0.62 | V | @ 0.77A | $T_J$ = 25 °C |
| | * See Fig. 1 | 0.80 | V | @ 1.54A | |
| | | 0.57 | V | @ 0.77A | $T_J$ = 125 °C |
| | | 0.72 | V | @ 1.54A | |
| $I_{RM}$ | Max. Reverse Leakage Current (1) | 1 | mA | $T_J$ = 25 °C | $V_R$ = rated $V_R$ |
| | * See Fig. 2 | 7.5 | mA | $T_J$ = 125 °C | |
| $C_T$ | Typical Junction Capacitance | 33 | pF | $V_R$ = 10$V_{DC}$, $T_J$ = 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 | | |

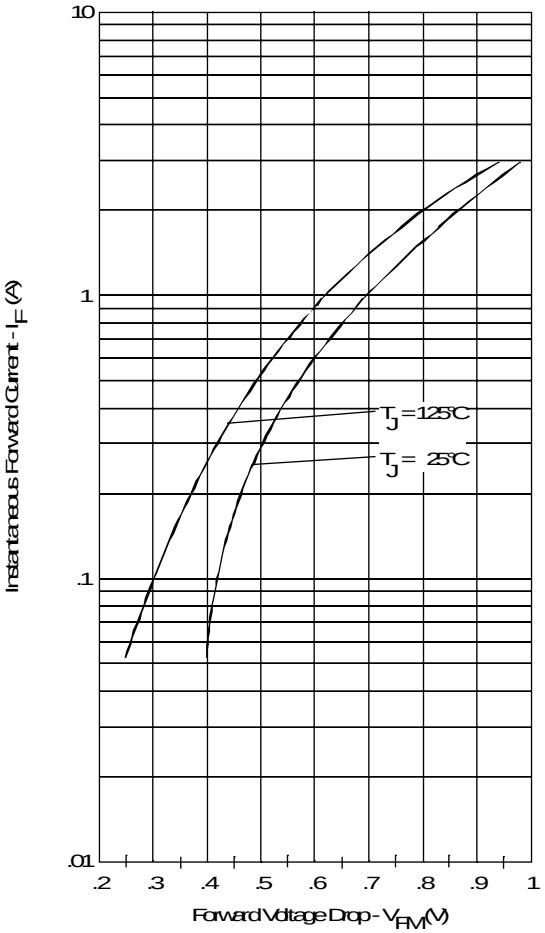



Fig. 1 - Maximum Forward Voltage Drop Characteristics

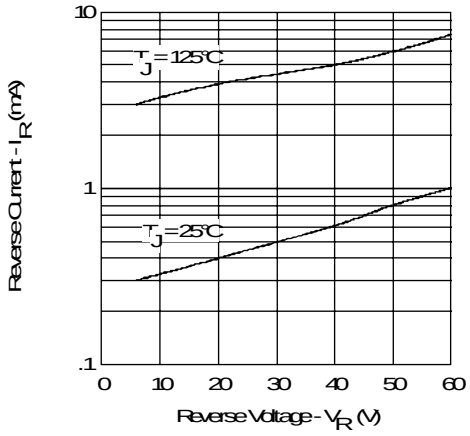



Fig. 2 - Typical Peak Reverse Current
Vs. Peak Reverse Voltage

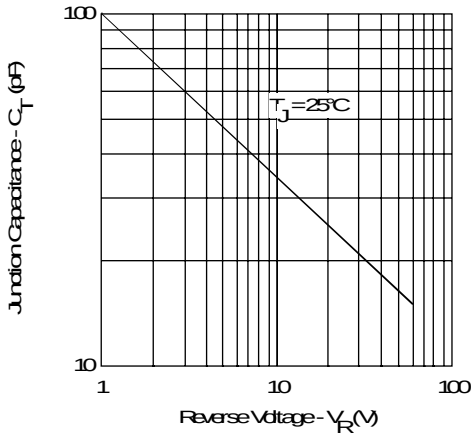



Fig. 3 - Typical Junction Capacitance
Vs. Reverse Voltage

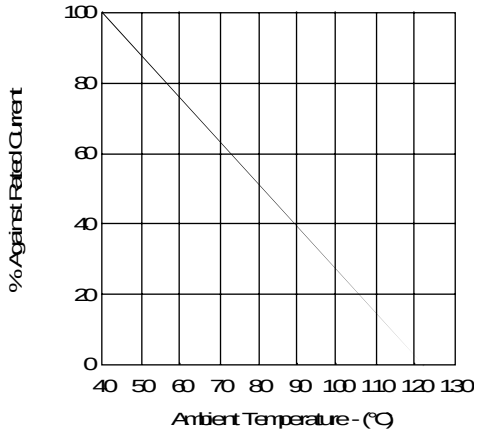



Fig. 4 - Maximum % Against Rated Current Vs. Ambient Temperature

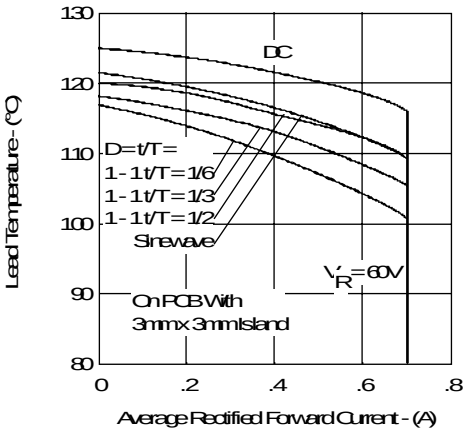



Fig. 5 - Maximum Average Forward Current
Vs. Allowable Lead Temperature

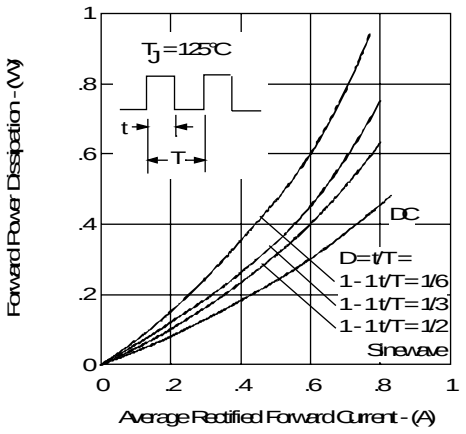



Fig. 6 - Maximum Average Dissipation
Vs. Average Forward Current

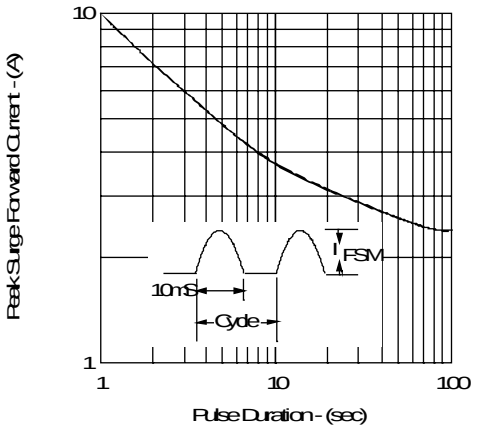



Fig. 7 - Maximum Peak Surge Forward Current Vs. Pulse Duration