

SCHOTTKY RECTIFIER

1 Amp

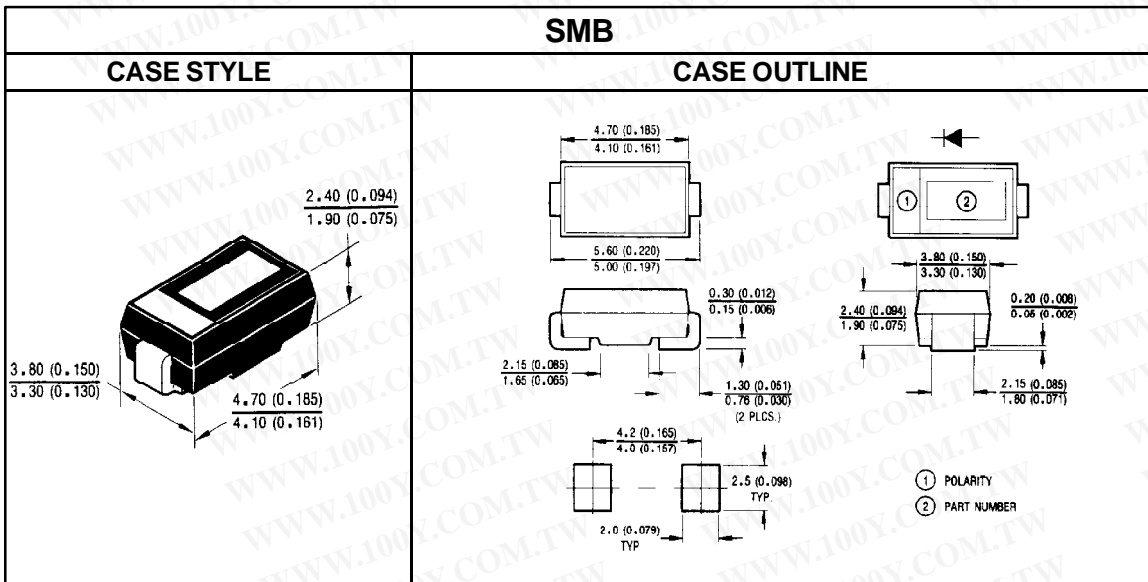
Major Ratings and Characteristics

| Characteristics | 10BQ060 | Units |
|-------------------------------------|------------|------------|
| $I_{F(AV)}$ Rectangular waveform | 1.0 | A |
| V_{RRM} | 60 | V |
| I_{FSM} @ $t_p = 5\mu s$ sine | 700 | A |
| V_F @ 1.0Apk, $T_J = 125^\circ C$ | 0.54 | V |
| T_J | -55 to 150 | $^\circ C$ |

Description / Features

The 10BQ060 surface-mount Schottky rectifier has been designed for applications requiring very low forward drop and 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 footprint, surface mountable
- Very low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long-term reliability



10BQ060

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)



Voltage Ratings

| | |
|--|---------|
| Part number | 10BQ060 |
| V _R Max. DC Reverse Voltage (V) | 60 |
| V _{RWM} Max. Working Peak Reverse Voltage (V) | |

Absolute Maximum Ratings

| Parameters | 10BQ | Units | Conditions |
|--|------|-------|--|
| I _{F(AV)} Max. Average Forward Current See Fig. 5 | 1.0 | A | 50% duty cycle @ T _C = 103°C, rectangular waveform |
| I _{FSM} Max. Peak One Cycle Non - Repetitive Surge Current — see Fig. 7 | 700 | A | Following any rated load condition and with rated V _{RRM} applied. |
| | 42 | | |
| E _{AS} Non - Repetitive Avalanche Energy | 11 | mJ | T _J = 25°C, I _{AS} = 1.0A, L = 4.0mH |
| I _{AR} Repetitive Avalanche Current | 1.0 | A | Current decaying linearly to zero in 1μsec Frequency limited by T _J max. V _A = 1.5 X V _R typical |

Electrical Specifications

| Parameters | 10BQ | Units | Conditions |
|--|--------|-------|---|
| V _{FM} Max. Forward Voltage Drop See Fig. 1 ① | 0.57 | V | @ 1.0A |
| | 0.73 | V | @ 2.0A |
| | 0.54 | V | @ 1.0A |
| | 0.66 | V | @ 2.0A |
| I _{RM} Max. Reverse Leakage Current ① See Fig. 2 | 0.1 | mA | T _J = 25°C |
| | 5.0 | mA | T _J = 125°C |
| C _T Max. Junction Capacitance | 62 | pF | V _R = 5V _{DC} , (test signal range 100KHz to 1MHz) 25°C |
| L _S Typical Series Inductance | 2.0 | nH | Measured lead to lead 5mm from package body |
| dv/dt Max. Voltage Rate of Change (Rated V _R) | 10,000 | V/μs | |

Thermal-Mechanical Specifications

| Parameters | 10BQ | Units | Conditions |
|--|------------|-------|---------------------------|
| T _J Max. Junction Temperature Range | -55 to 150 | °C | |
| T _{STG} Max. Storage Temperature Range | -55 to 150 | °C | |
| R _{thJA} Max. Thermal Resistance, Junction to Ambient | 140 | °C/W | DC operation — See Fig. 4 |
| R _{thJL} Max. Thermal Resistance, Junction to Lead ② | 36 | °C/W | DC operation |
| wt Approximate Weight | 0.10 | g | |
| Case Style | SMB | | Similar to DO-214AA |

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

② Mounted 1 inch square PCB, thermal probe connected to lead 2mm from package

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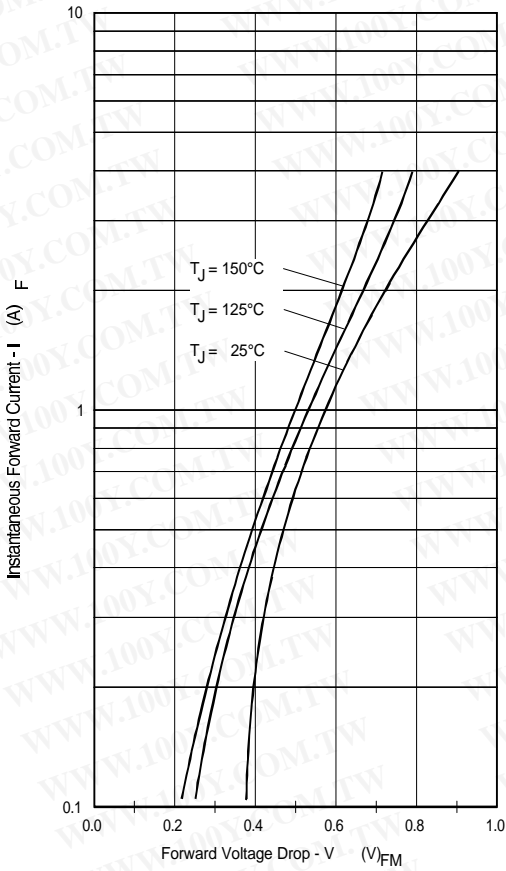


Fig. 1 Max. Forward Voltage Drop Characteristics

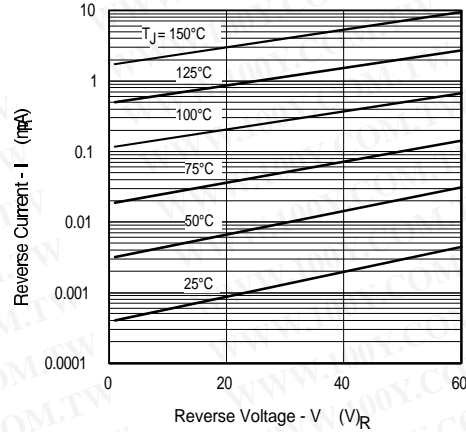


Fig. 2 Typical Values of Reverse Current Vs. Reverse Voltage

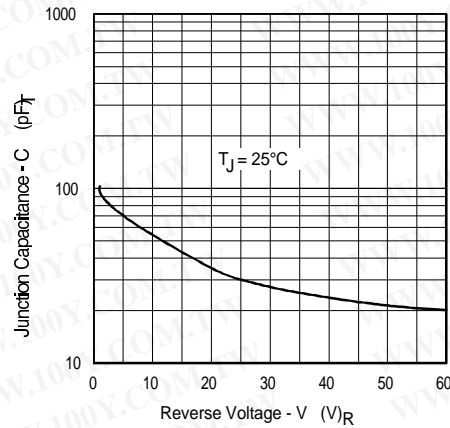


Fig. 3 Typical Junction Capacitance Vs. Reverse Voltage

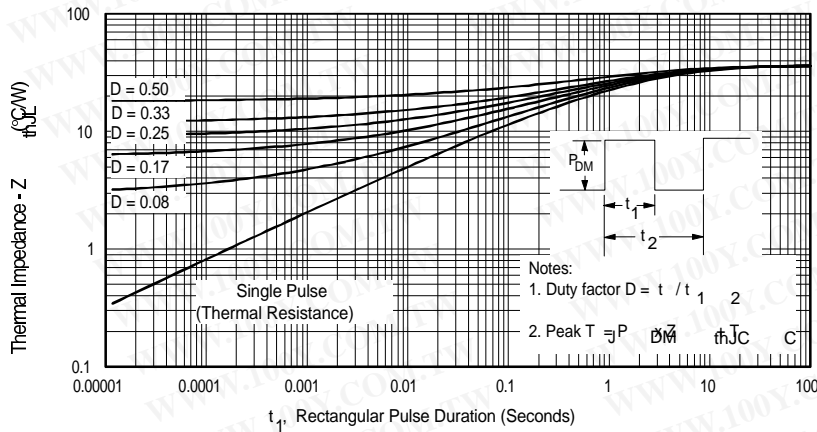


Fig. 4 Max. Thermal Impedance Z_{thJL} Characteristics

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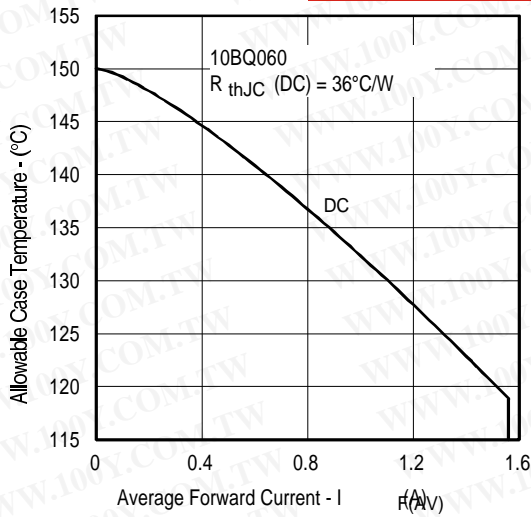


Fig. 5 Max. Allowable Case Temperature Vs. Average Forward Current

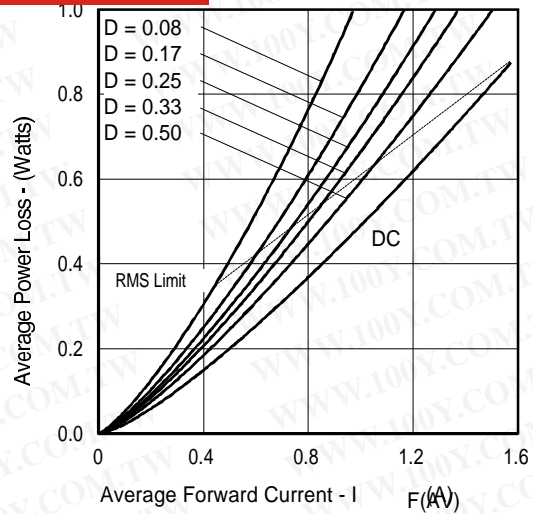


Fig. 6 Forward Power Loss Characteristics

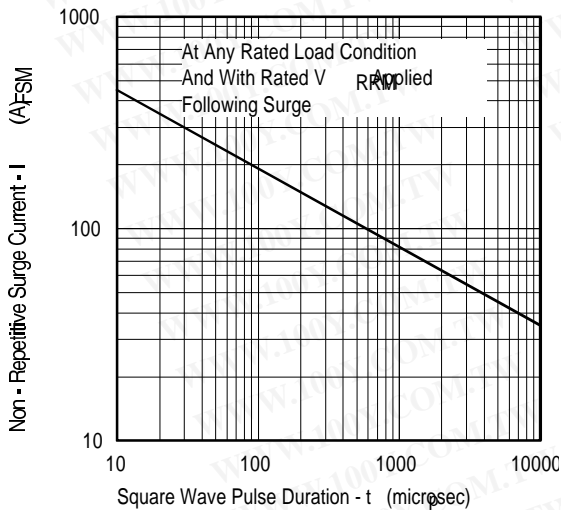


Fig. 7 Max. Non-Repetitive Surge Current

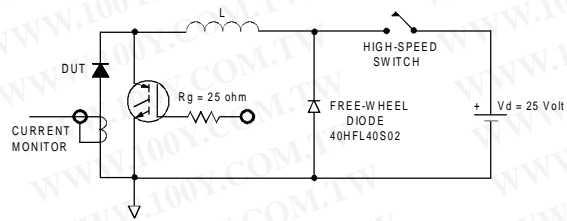


Fig. 8 Unclamped Inductive Test Circuit

Refer to the Appendix Section for the following:

Appendix D: Tape and Reel Information — See page 338.