

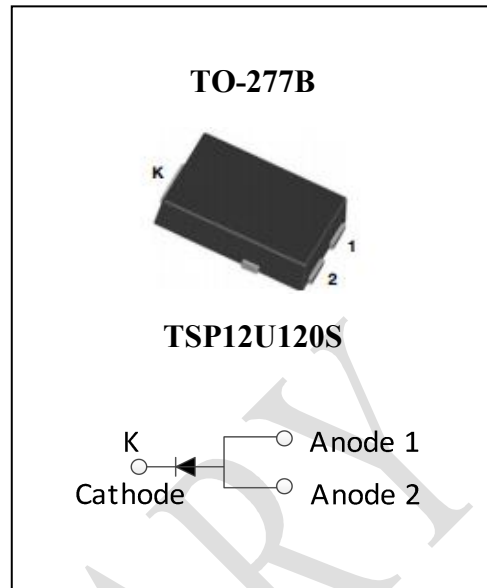


FEATURES

- Trench Schottky technology
- Lower forward voltage
- Lower power loss,high efficiency
- Softest, fast switching capability
- High surge capability
- Lead Free Finish,ROHS Compliant

TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, freewheeling diodes, DC/DC converters or polarity protection application



| PRIMARY CHARACTERISTICS | |
|-------------------------|-------|
| IF (AV) | 12A |
| VRRM | 120V |
| IFSM | 150A |
| VF | 0.61V |
| TJ max. | 150°C |

Maximum ratings and electrical characteristics (TA = 25 °C unless otherwise noted)

| Parameter | Description | Test Condition | Min. | Typ. | Max. | Unit | |
|-----------|---|--------------------|------------|------|------|------|----|
| VRRM | Maximum repetitive peak reverse voltage | IR = 500µA | 125 | 138 | — | V | |
| IF (AV) | Maximum average forward rectified current | | — | — | 12 | A | |
| IFSM | Maximum Peak forward surge current | 1/2 60hz | — | — | 150 | A | |
| VF | Static Forward Voltage | IF = 1A | TA = 25°C | — | 0.38 | 0.48 | V |
| | | IF = 12A | | — | 0.61 | 0.71 | V |
| | | IF = 1A | TA = 125°C | — | 0.19 | 0.30 | V |
| | | IF = 12A | | — | 0.56 | 0.66 | V |
| IR | Maximum reverse current per diode at working peak reverse voltage | VR = 120V | TA = 25°C | — | 14 | 30 | µA |
| | | | TA = 125°C | — | 13 | 30 | mA |
| RθJL | Typical Thermal Resistance | TO-277B | 3 | | | °C/W | |
| TJ, TSTG | Operating and Storage Temperature Range | -55°C to 150°C Max | | | | | |



RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

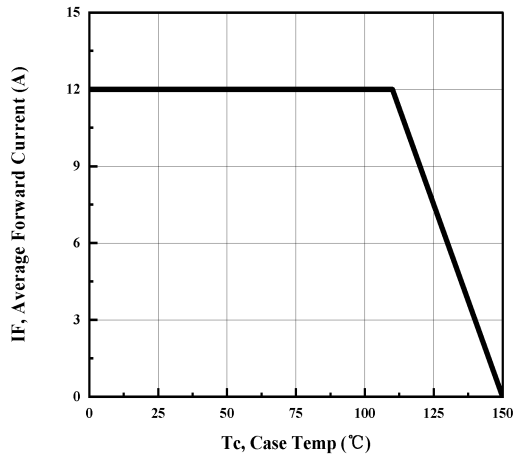


Fig. 1: Forward Current Derating Curve

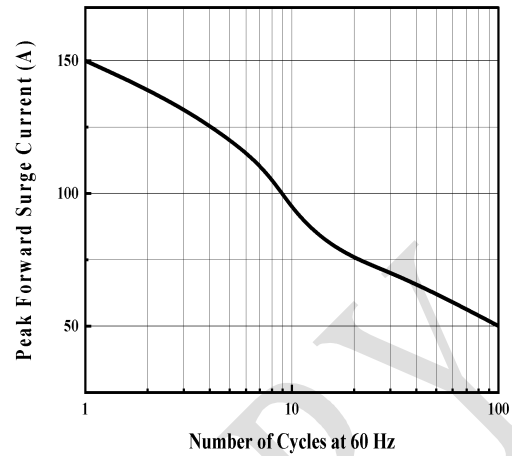


Fig. 2: Maximum Repetitive Surge Current

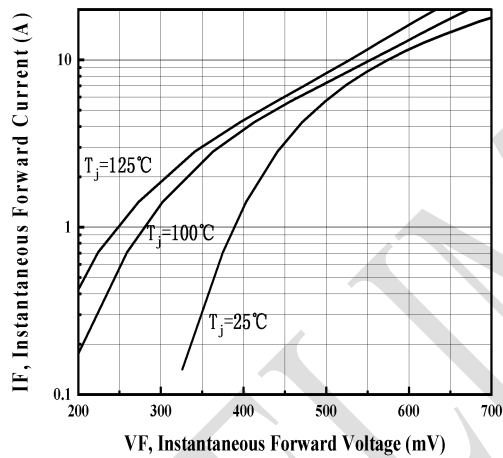


Fig. 3: Typical Forward Voltage

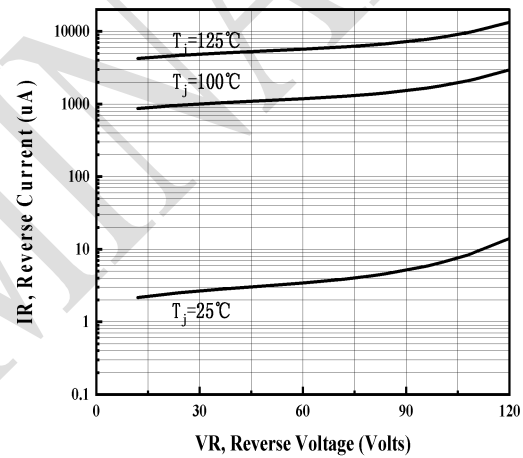


Fig. 4: Typical Reverse Current

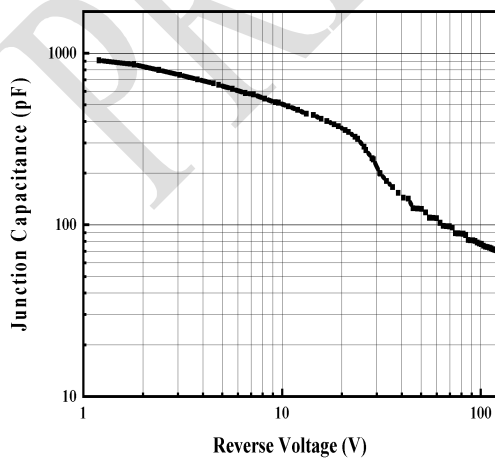
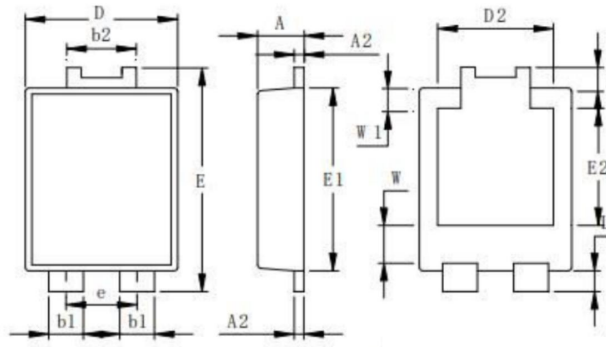


Fig. 5: Typical Junction Capacitance



PACKAGE OUTLINE DIMENSIONS in millimeters



TO-277B(TSP12U120S)

| NO | Min | Max | NO | Min | Max |
|----------------------|------|------|----|------|------|
| A | 0.95 | 1.25 | e | 1.78 | 1.98 |
| A2 | 0.25 | 0.35 | E1 | 5.28 | 5.48 |
| b1 | 0.85 | 0.95 | E2 | 3.39 | 3.69 |
| b2 | 1.75 | 1.85 | L | 0.41 | 0.71 |
| D | 3.93 | 4.13 | L1 | 0.41 | 0.71 |
| D2 | 2.85 | 3.15 | W | 1.44 | 1.74 |
| E | 6.30 | 6.70 | W1 | 0.05 | 0.45 |
| All Dimensions in mm | | | | | |

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