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# Ultra-Low VF Schottky Rectifier, 10 A, 100 V FSV10100V

**Features**

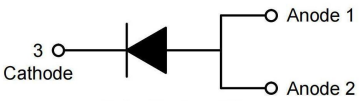
- Ultra−Low Forward Voltage Drop
- Low Thermal Resistance
- Very Low Profile: Typical Height of 1.1 mm
- Trench Schottky Technology

- Non−DAP Option Only
- These Devices are Pb−Free, Halogen Free Free and are RoHS Compliant

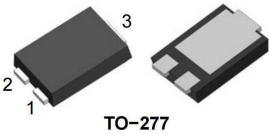
**Specifications**

**ABSOLUTE MAXIMUM RATINGS** ($T_A$ = 25°C unless otherwise noted)

| Symbol | Rating | Value | Unit |
|---|---|---|---|
| $V_{RRM}$ | Peak Repetitive Reverse Voltage | 100 | V |
| $V_{RWM}$ | Working Peak Reverse Voltage | 100 | V |
| $V_{RMS}$ | RMS Reverse Voltage | 70 | V |
| $V_R$ | DC Blocking Voltage | 100 | V |
| $I_{F(AV)}$ | Average Rectified Peak Forward Surge Current | 10 | A |
| $I_{FSM}$ | Non−Repetitive Peak Forward Surge Current | 180 | A |
| $T_J$ | Operating Junction Temperature Range | −55 to +150 | °C |
| $T_{STG}$ | Storage Temperature Range | −55 to +150 | °C |

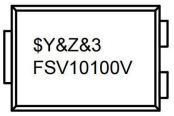



**Schottky Rectifier**




**TO−277**
**CASE 340BQ**

**MARKING DIAGRAM**




$Y = OM SENI
&Z = Assembly Plant Code
&3 = Date Code (Year & Week)
FSV10100V = Specific Device Code

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**THERMAL CHARACTERISTICS** ($T_A$ = 25°C unless otherwise noted) (Note 1)

| Symbol | Characteristic | Minimum Land Pattern | Maximum Land Pattern | Unit |
|---|---|---|---|---|
| $R_{\theta JA}$ | Junction−to−Ambient Thermal Resistance | 100 | 40 | °C/W |
| $\Psi_{JL}$ | Junction−to−Lead Thermal Characteristics, Thermocouple Soldered to Anode | 15 | 12 | °C/W |
| | Junction−to−Lead Thermal Characteristics, Thermocouple Soldered to Cathode | 6 | 5 | |

1. The thermal resistances ($R_{\theta JA}$ & $\Psi_{JL}$) are characterized with device mounted on the following FR4 printed circuit boards, as shown in Figure 1 and Figure 2. PCB size: 76.2 x 114.3 mm. Minimum land pattern size: 4.9 x 4.8 mm (big pattern, x1), 1.4 x 1.52 mm (small pattern, x2). Maximum land pattern size: 30 x 30 mm (pattern, x2). Force line trace size = 55 mils, sense line trace size = 4 mils.




**Figure 1. Minimum Land Pattern of 2 oz Copper**

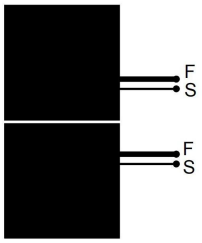


**Figure 2. Maximum Land Pattern of 2 oz Copper**

**ELECTRICAL CHARACTERISTICS** ($T_A$ = 25°C unless otherwise noted)

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| $BV_R$ | Breakdown Voltage | $I_R$ = 0.5 mA | 100 | − | − | V |
| $V_F$ | Forward Voltage Drop | $I_F$ = 5 A | − | 0.513 | − | V |
| | | $I_F$ = 5 A, $T_A$ = 125°C | − | 0.463 | − | |
| | | $I_F$ = 10 A | − | 0.625 | 0.670 | |
| | | $I_F$ = 10 A, $T_A$ = 125°C | − | 0.575 | 0.600 | |
| $I_R$ | Reverse Current | $V_R$ = 70 V | − | 0.0072 | − | mA |
| | | $V_R$ = 70 V, $T_A$ = 125°C | − | 6.486 | − | |
| | | $V_R$ = 100 V | − | 0.0165 | 0.060 | |
| | | $V_R$ = 100 V, $T_A$ = 125°C | − | 16.72 | 20 | |
| $C_J$ | Junction Capacitance | $V_R$ = 4 V, f = 1 MHz | − | 796 | − | pF |
| $T_{rr}$ | Reverse Recovery Time | $I_F$ = 0.5 A, $I_R$ = 1 A, $I_{rr}$ = 0.25 A | − | 22.94 | − | ns |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

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## TYPICAL PERFORMANCE CHARACTERISTICS

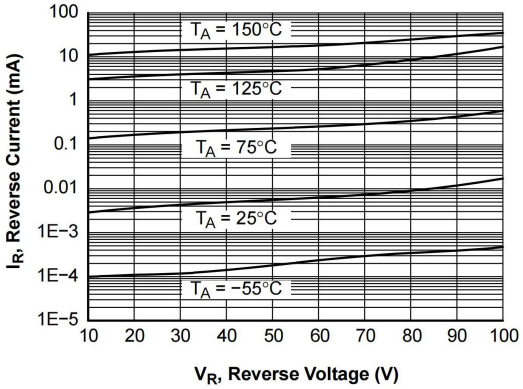


Figure 3. Typical Reverse Characteristics

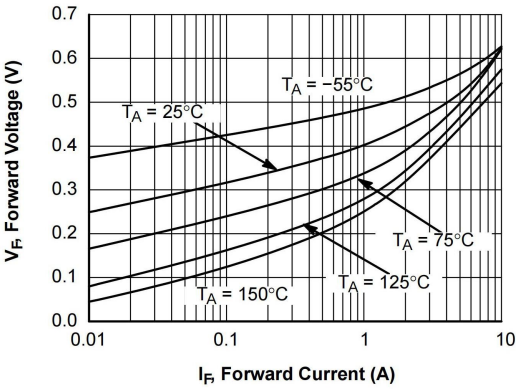


Figure 4. Typical Forward Characteristics

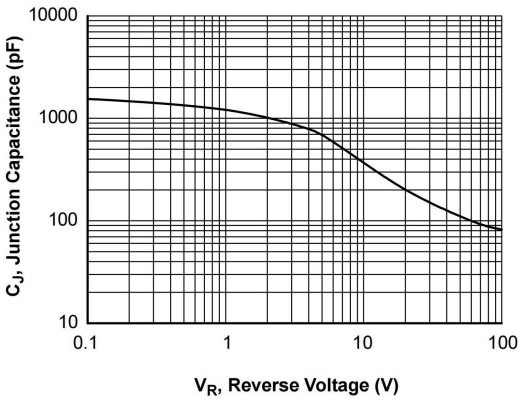


Figure 5. Typical Junction Capacitance

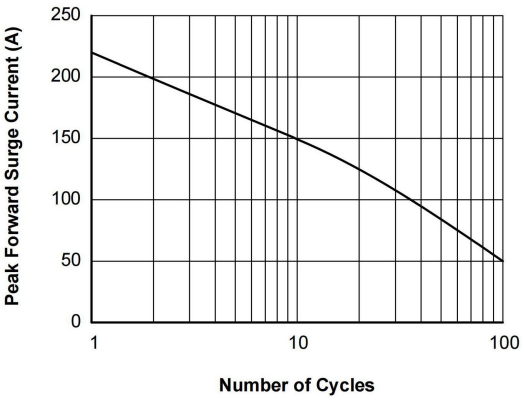


Figure 6. Maximum Non−Repetitive Peak Forward Surge Current

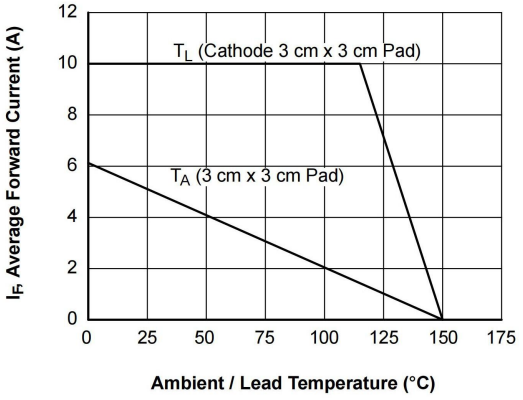


Figure 7. Forward Current Derating Curve

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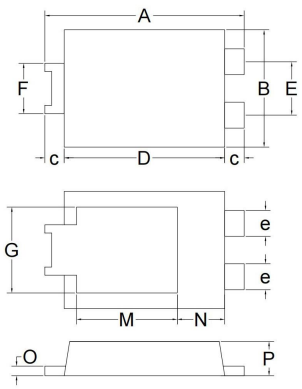
## Ordering Information

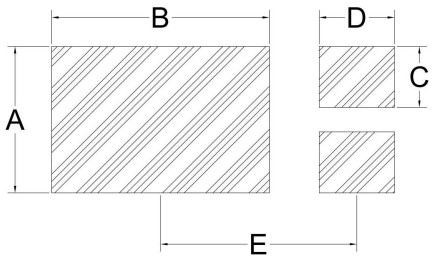
| PACKAGE | PACKAGE CODE | UNIT WEIGHT(g) | REEL(pcs) | BOX(pcs) | CARTON(pcs) | DELIVERY MODE |
|---|---|---|---|---|---|---|
| TO-277 | R3 | 0.090 | 5000 | 10000 | 100000 | 13'' |

## Package Outline Dimensions (TO-277)




| Symbol | Dimensions | | | |
|---|---|---|---|---|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| A | 6.300 | 6.700 | 0.248 | 0.264 |
| B | 3.950 | 4.300 | 0.156 | 0.169 |
| c | 0.410 | 0.710 | 0.016 | 0.028 |
| D | 5.280 | 5.880 | 0.208 | 0.231 |
| E | 1.760 | 1.960 | 0.069 | 0.077 |
| e | 0.850 | 0.960 | 0.033 | 0.038 |
| F | 1.750 | 1.850 | 0.069 | 0.073 |
| G | 2.850 | 3.150 | 0.112 | 0.124 |
| M | 3.390 | 3.690 | 0.133 | 0.145 |
| N | 1.440 | 1.740 | 0.057 | 0.069 |
| O | 0.250 | 0.350 | 0.010 | 0.014 |
| P | 0.950 | 1.250 | 0.037 | 0.049 |

## Suggested Pad Layout




| Symbol | Dimensions | | | |
|---|---|---|---|---|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| A | 3.400 | 3.800 | 0.134 | 0.150 |
| B | 4.500 | 4.900 | 0.177 | 0.193 |
| C | 1.200 | 1.600 | 0.047 | 0.063 |
| D | 0.600 | 1.00 | 0.024 | 0.039 |
| E | 3.670 | 4.070 | 0.144 | 0.160 |