

# FSV20120V

## Ultra-Low VF Schottky Rectifier, 20 A, 120 V

### Features

- Ultra-Low Forward Voltage Drop
- Low Thermal Resistance
- Very Low Profile: Typical Height of 1.1 mm
- Trench Schottky Technology
- Green Molding Compound as per IEC61249 Standard
- These Devices are Pb-Free, Halogen Free and are RoHS Compliant

### Specifications

#### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

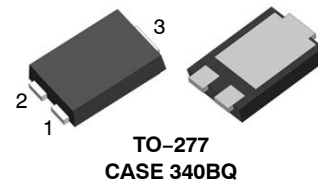
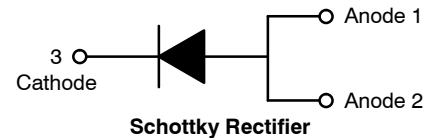
Symbol	Parameter	Value	Unit
$V_{RRM}$	Peak Repetitive Reverse Voltage	120	V
$V_{RWM}$	Working Peak Reverse Voltage	120	V
$V_{RMS}$	RMS Reverse Voltage	85	V
$V_R$	DC Blocking Voltage	120	V
$I_{F(AV)}$	Average Rectified Peak Forward Surge Current	20	A
$I_{FSM}$	Non-Repetitive Peak Forward Surge Current	270	A
$T_J$	Operating Junction Temperature Range	-55 to +150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature Range	-55 to +150	$^\circ\text{C}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

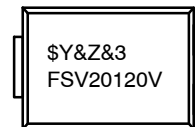


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### MARKING DIAGRAM



\$Y = ON Semiconductor Logo  
&Z = Assembly Plant Code  
&3 = Data Code (Year & Week)  
FSV20120V = Specific Device Code

### ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

# FSV20120V

## THERMAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted) (Note 1)

Symbol	Parameter	Minimum Land Pattern	Maximum Land Pattern	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance	100	40	$^\circ\text{C/W}$
$\Psi_{JL}$	Junction-to-Lead Thermal Characteristics, Thermocouple Soldered to Anode	15	12	$^\circ\text{C/W}$
	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

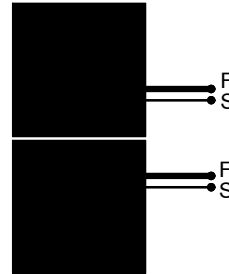


Figure 2. Maximum Land Pattern of 2 oz Copper

## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$BV_R$	Breakdown Voltage	$I_R = 0.5 \text{ mA}$	120	-	-	V
$V_F$	Forward Voltage Drop	$I_F = 20 \text{ A}$	-	-	0.79	V
$I_R$	Reverse Current	$V_R = 120 \text{ V}$	-	-	35	$\mu\text{A}$

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.

## ORDERING INFORMATION

Part Number	Top Mark	Package	Shipping†
FSV20120V	FSV20120V	TO-277 3L (Pb-Free/Halogen Free)	5000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

TYPICAL PERFORMANCE CHARACTERISTICS

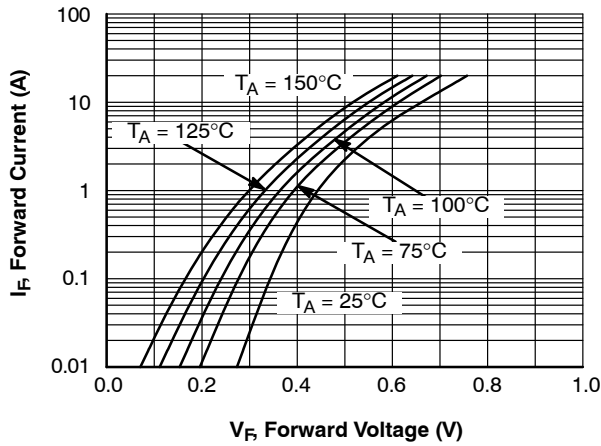


Figure 3. Typical Forward Characteristics

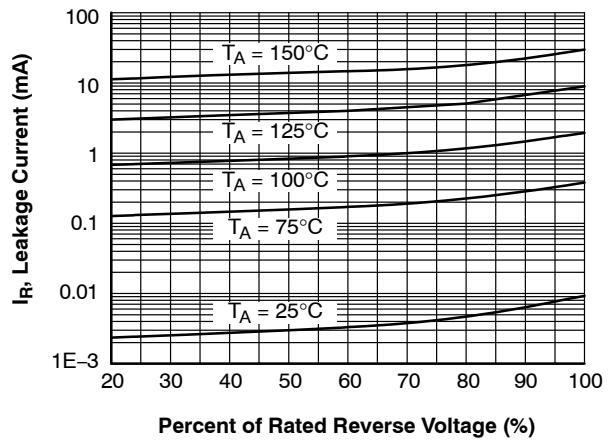


Figure 4. Typical Reverse Characteristics

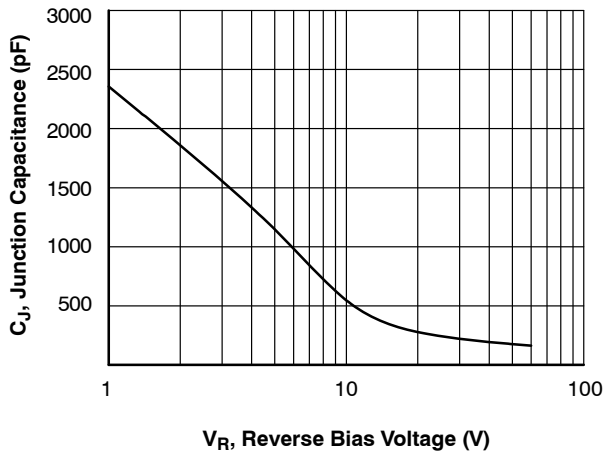


Figure 5. Typical Junction Capacitance

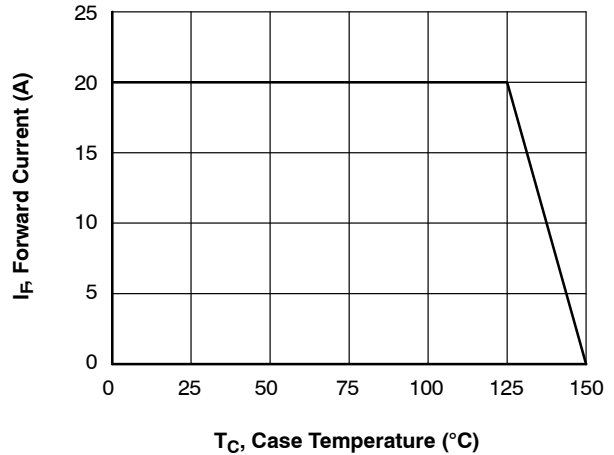
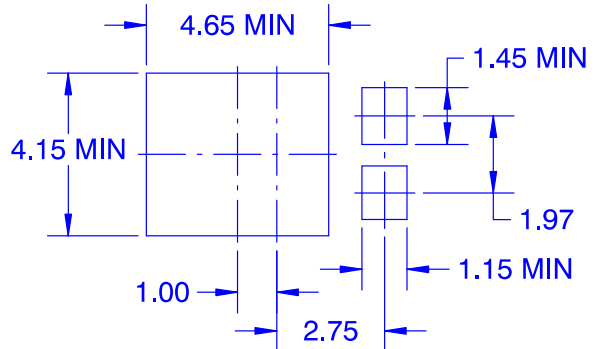
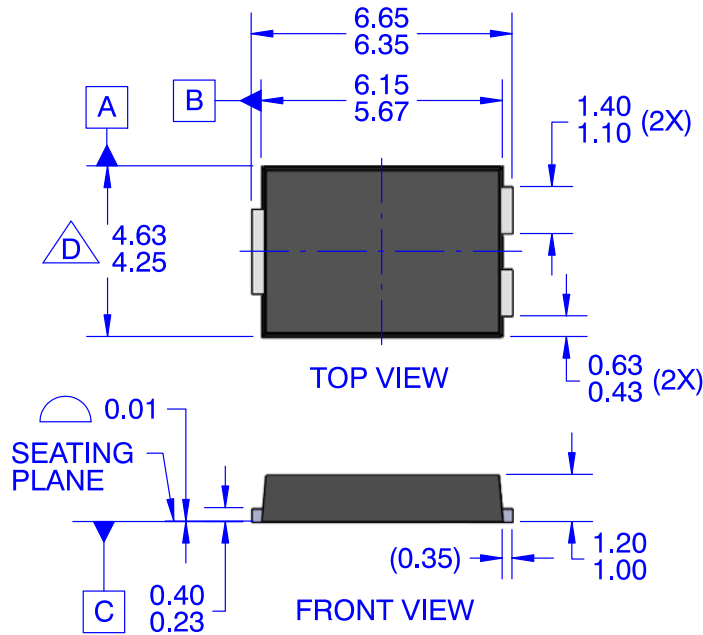


Figure 6. Forward Current Derating Curve

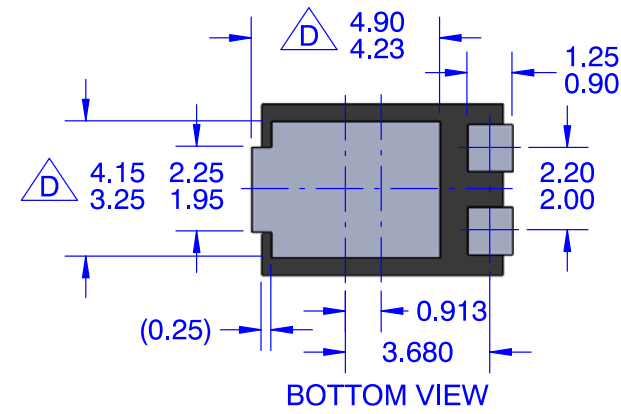
**MECHANICAL CASE OUTLINE**  
**PACKAGE DIMENSIONS**

TO-277-3LD  
CASE 340BQ  
ISSUE O

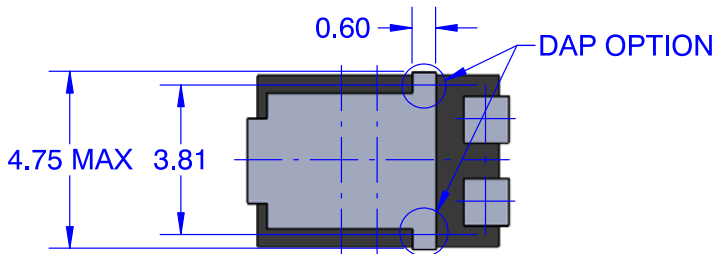
DATE 30 SEP 2016



LAND PATTERN RECOMMENDATION



BOTTOM VIEW



BOTTOM VIEW - DAP OPTION

- NOTES: UNLESS OTHERWISE SPECIFIED
- A. PACKAGE REFERENCE: JEDEC TO-277
  - B. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR EXTRUSIONS.
  - C. ALL DIMENSIONS ARE IN MILLIMETERS.
  - D** DOES NOT COMPLY TO JEDEC STANDARD VALUE.

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DESCRIPTION:	TO-277-3LD	PAGE 1 OF 2



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