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# S320

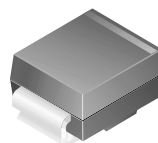
## 3 A, 200 V, Surface-Mount Package Schottky Rectifier

### Features

- Low-Profile, Mini-Surface-Mount Package:  
SMB / DO-214AA
- High-Reverse Voltage:  $V_{RRM} = 200\text{ V}$
- Low-Power Loss, High Efficiency
- High-Surge Current:  $I_{FSM} = 80\text{ A}$
- RoHS 2002/95/EC Compliant

### Description

The S320 is a high-efficiency, low power loss, general-purpose Schottky rectifier. The clip-bonded leg structure provides high thermal performance and low electrical resistance. This rectifier is suited for free wheeling, secondary rectification, and reverse polarity protection applications.



**SMB / DO-214AA**  
Color Band Denotes Cathode  
Mark: S320

### Ordering Information

Part Number	Marking	Package	Packing Method
S320	S320	DO-214AA	Tape and Reel

### Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Value	Units
$V_{RRM}$	Maximum Repetitive Peak Reverse Voltage	200	V
$V_{RMS}$	Maximum RMS Voltage	140	V
$V_{DC}$	Maximum DC Blocking Voltage	200	V
$I_{F(AV)}$	Maximum Average Forward Current	3.0	A
$I_{FSM}$	Non-Repetitive Peak Forward Surge Current: 8.3 ms Single Half-Sine Wave Superimposed on Rated Load (JEDEC Method)	80	A
$T_{STG}, T_J$	Operating Junction and Storage Temperature Range	-65 to +150	$^\circ\text{C}$

**Thermal Characteristics<sup>(1)</sup>**

Symbol	Parameter	Typ.	Units
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	160	°C/W
$\Psi_{JL}$	Junction to Lead Thermal Characteristics	20	°C/W

**Note:**

1. Test condition - test environment & PCB type: JESD51-2,3, board size: 76.2 x 114.3 mm, pad size: 2.5 x 2.2 mm, trace width: 30 mils.

**Electrical Characteristics**

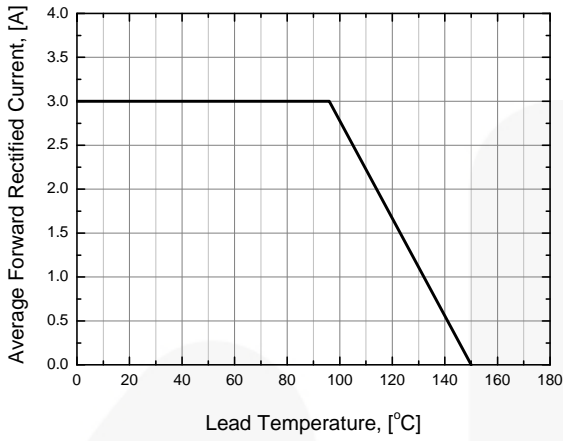
Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Test Condition	Typ.	Max.	Units
$V_F$	Forward Voltage <sup>(2)</sup>	3.0 A		0.9	V
$I_R$	DC Reverse Current at Rated $V_{DC}$	$T_A = 25^\circ\text{C}$		7	$\mu\text{A}$
		$T_A = 100^\circ\text{C}$		120	
$t_{rr}$	Reverse-Recovery Time <sup>(3)</sup>	$I_F = 0.5\text{ A}, I_R = 1\text{ A}, I_{RR} = 0.25\text{ A}$	14		ns
		$I_F = 1\text{ A}, V_R = -30\text{ V}, I_{RR} = 10\% I_{RM}, di/dt = 50\text{ A}/\mu\text{s}$	30		ns

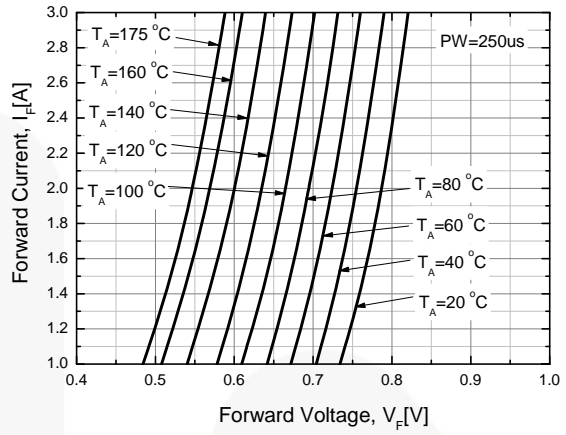
**Notes:**

2. Pulse test with  $PW = 250\ \mu\text{s}$ , 2% duty cycle.
3.  $I_R < 1\text{ A}$  due to fast reverse recovery.

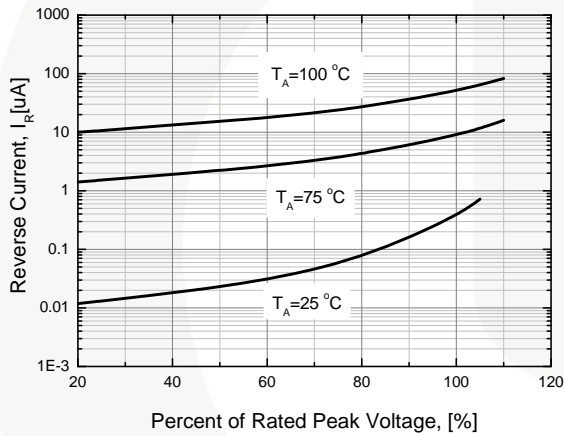
## Typical Performance Characteristics



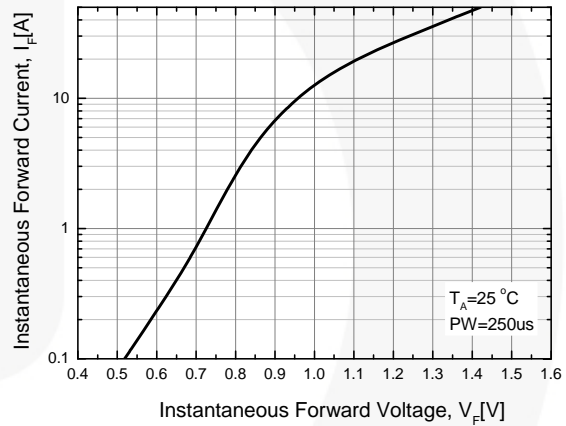
**Figure 1. DC Forward Current Derating Curve**



**Figure 2. Forward Current Characteristics**



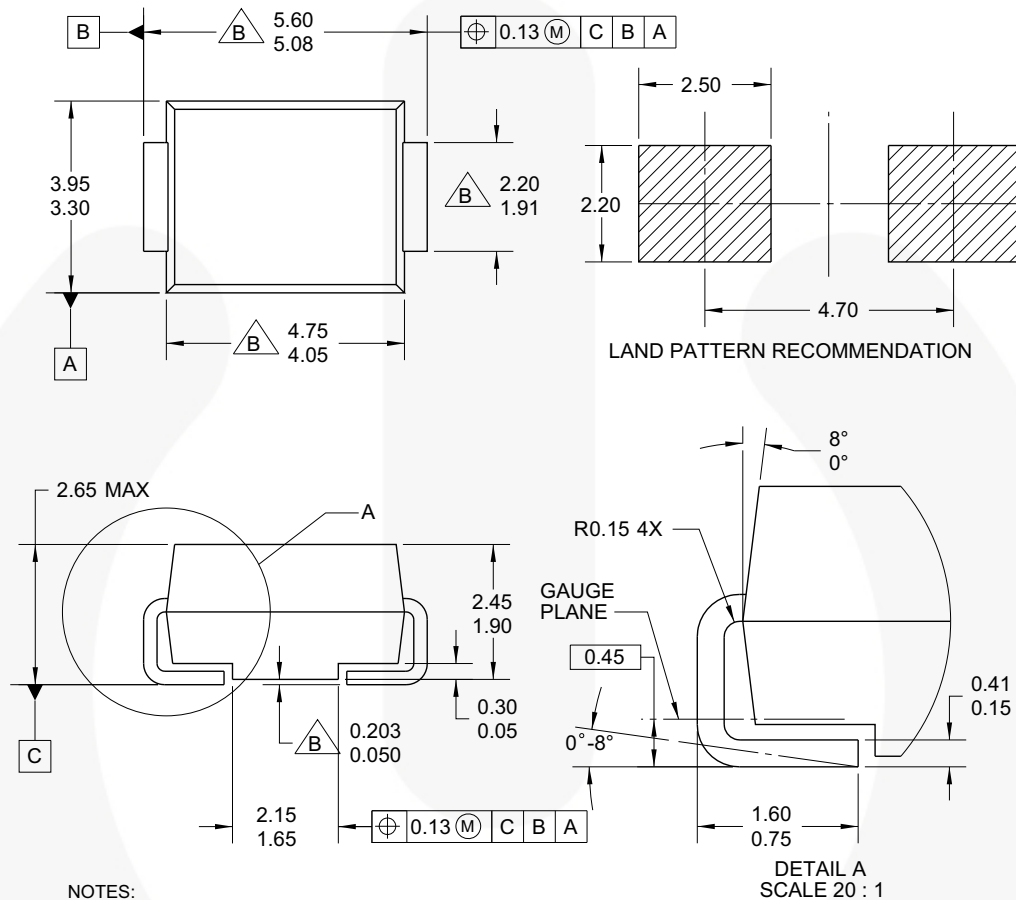
**Figure 3. Typical Reverse Characteristics**



**Figure 4. Typical Instantaneous Forward Characteristic**

Physical Dimensions

DO-214AA



NOTES:

- A. EXCEPT WHERE NOTED CONFORMS TO JEDEC DO214 VARIATION AA.
- B. DOES NOT COMPLY JEDEC STD. VALUE.
- C. ALL DIMENSIONS ARE IN MILLIMETERS.
- D. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
- E. DIMENSION AND TOLERANCE AS PER ASME Y14.5-1994.
- F. LAND PATTERN STD. DIOM5336X240M.
- G. DRAWING FILE NAME: DO214AAREV1

Figure 5. 2-LEAD, SMB, JEDEC DO-214, VARIATION AA (ACTIVE)

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| FPS™  |  | SyncFET™  |   |

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