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S320

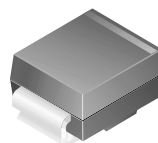
3 A, 200 V, Surface-Mount Package Schottky Rectifier

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⁽¹⁾

Symbol	Parameter	Typ.	Units
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	160	°C/W
Ψ_{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 ⁽²⁾	3.0 A		0.9	V
I_R	DC Reverse Current at Rated V_{DC}	$T_A = 25^\circ\text{C}$		7	μA
		$T_A = 100^\circ\text{C}$		120	
t_{rr}	Reverse-Recovery Time ⁽³⁾	$I_F = 0.5\text{ A}, I_R = 1\text{ A}, I_{RR} = 0.25\text{ A}$	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

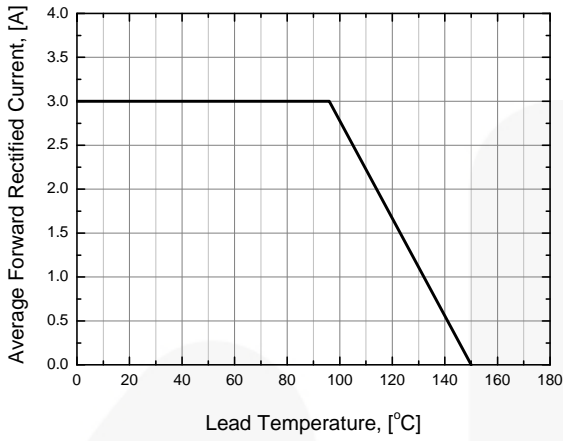


Figure 1. DC Forward Current Derating Curve

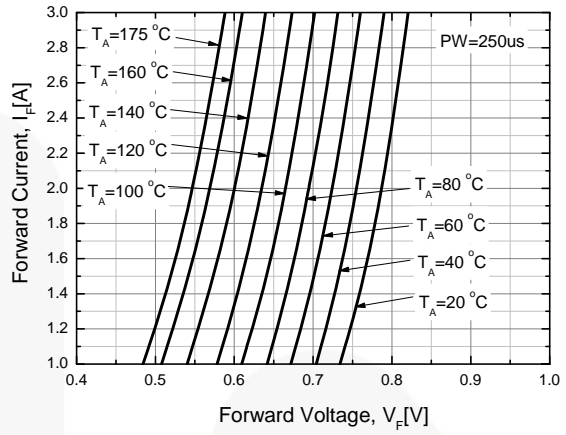


Figure 2. Forward Current Characteristics

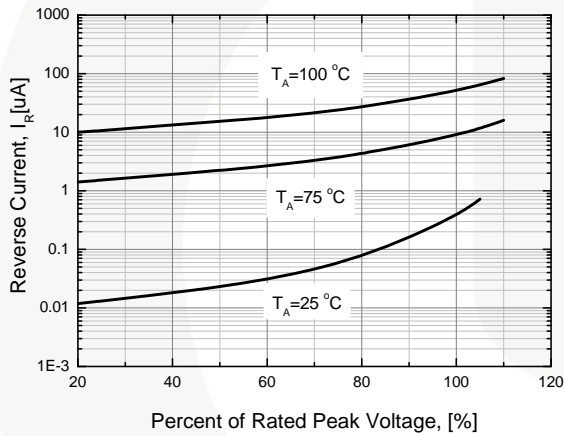


Figure 3. Typical Reverse Characteristics

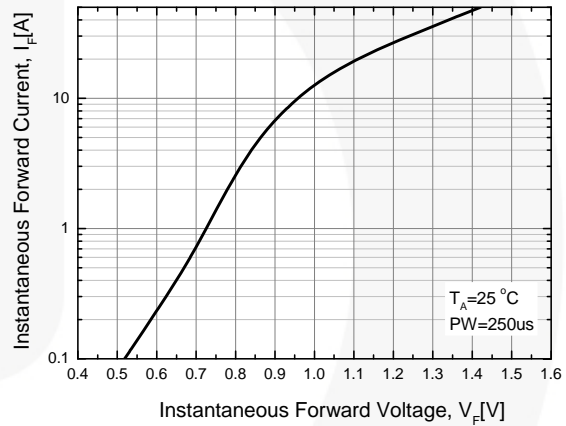
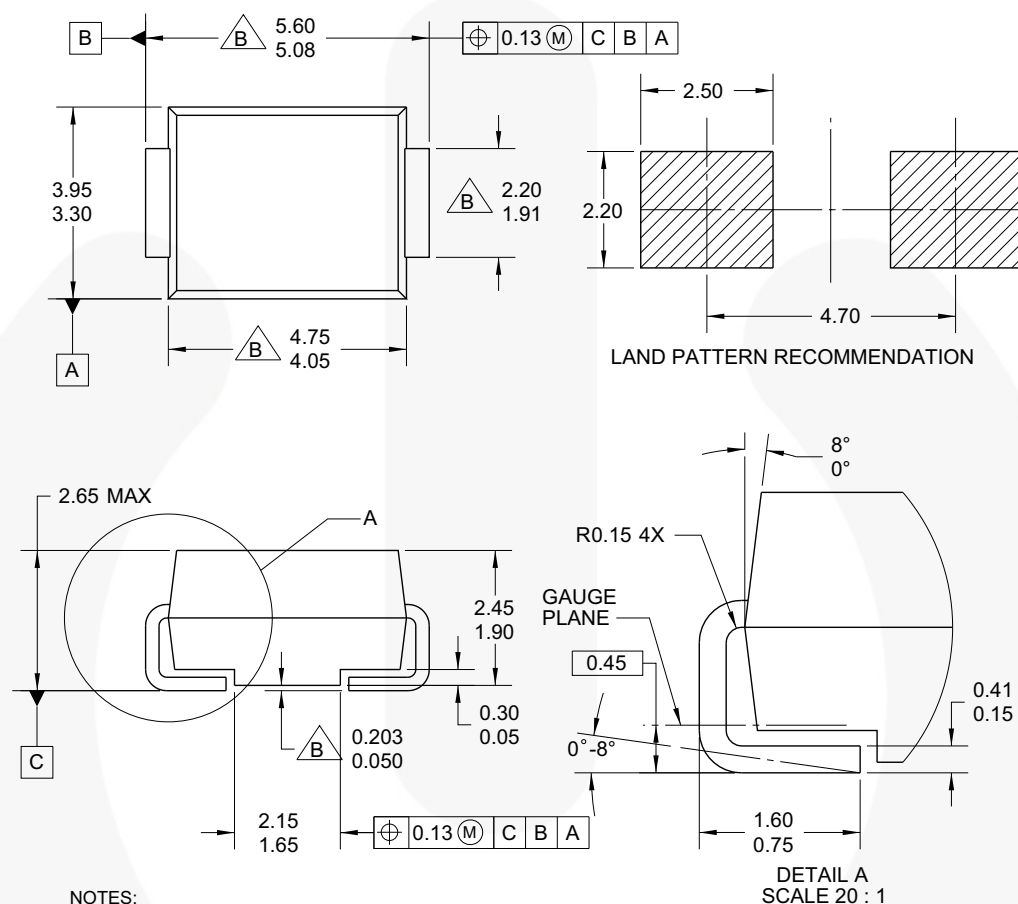


Figure 4. Typical Instantaneous Forward Characteristic

Physical Dimensions

DO-214AA



NOTES:

- A. EXCEPT WHERE NOTED CONFORMS TO JEDEC DO214 VARIATION AA.
- \triangle 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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No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
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