General-Purpose Rectifiers

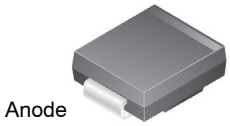
S3A-S3N

Features

- Low−Profile Package
- Glass−Passivated Junction
- UL Flammability Classification: 94V−0
- UL Certified, UL #E258596
- These are Pb−Free Devices

ON Semiconductor®

www.onsemi.com



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

Symbol	Parameter	Value								Unit
		S3A	S3B	S3D	S3G	S3J	S3K	S3M	S3N	
V_{RRM}	Maximum Repetitive Reverse Voltage	50	100	200	400	600	800	1000	1200	V
V_{RMS}	RMS Reverse Voltage	35	70	140	280	420	560	700	840	V
V_R	DC Blocking Voltage	50	100	200	400	600	800	1000	1200	V
$I_{F(AV)}$	Average Rectified Forward Current T_L = 105°C	3.0								A
I_{FSM}	Non-Repetitive Peak Forward Surge Current 8.3 ms Single Half-Sine-Wave	100								A
T_{STG}	Storage Temperature Range	−55 to +150								°C
T_J	Operating Junction Temperature Range	−55 to +150								°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.

THERMAL CHARACTERISTICS (Note 1)

Symbol	Parameter	Value	Unit
P_D	Power Dissipation	2.6	W
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	100	°C/W
$R_{\theta JL}$	Thermal Resistance, Junction-to-Lead	13	°C/W

1. Device is mounted on FR−4 PCB 0.013 mm. Land pattern size: refer to the package drawing. Trace size: force line = 50 mil & sense line = 4 mil.

MARKING DIAGRAM

$Y	= ON Semiconductor Logo
&Z	= Assembly Plant Code
&3	= Numeric Date Code
S3X	= Specific Device Code X = A−N

ORDERING INFORMATION

See detailed ordering and shipping information on page 3 of this data sheet.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted (per leg))

Symbol	Parameter	Conditions	Value								Unit
			S3A	S3B	S3D	S3G	S3J	S3K	S3M	S3N	
V_F	Maximum Forward Voltage	I_F = 3.0 A	1.2								V
t_{rr}	Typical Reverse Recovery Time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	2.5								μs
I_R	Maximum Reverse Current at Rated V_R	T_A = 25°C	5								μA
		T_A = 125°C	250								
C_T	Typical Total Capacitance	V_R = 4.0 V, f = 1.0 MHz	60								pF

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.

TYPICAL PERFORMANCE CHARACTERISTICS

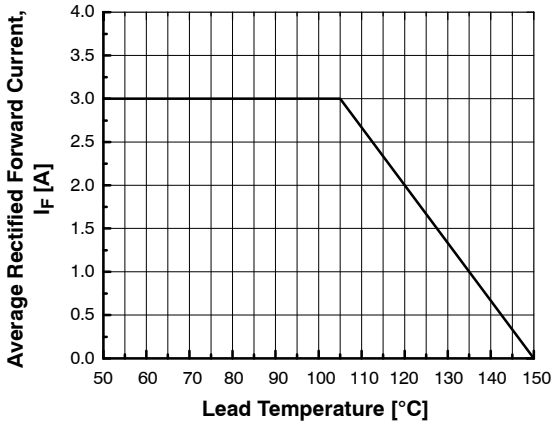

Figure 1. Forward Current Derating Curve

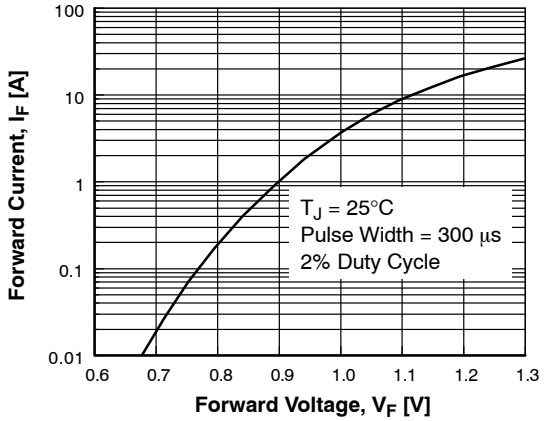

Figure 2. Forward Voltage Characteristics

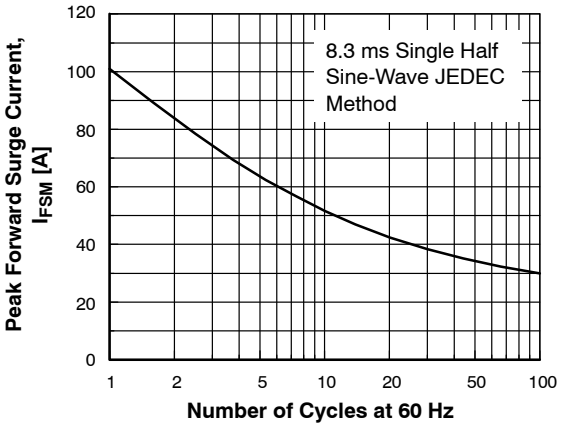

Figure 3. Non-Repetitive Surge Current

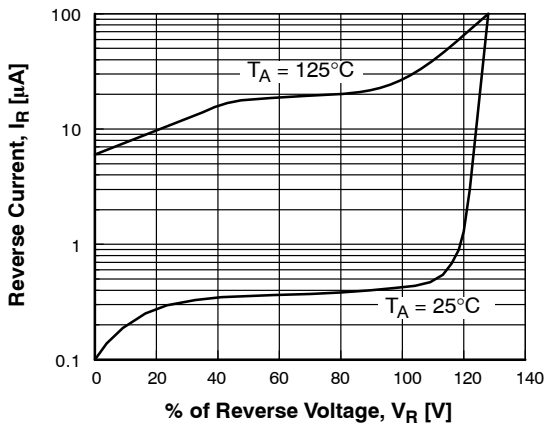

Figure 4. Reverse Current vs. Reverse Voltage

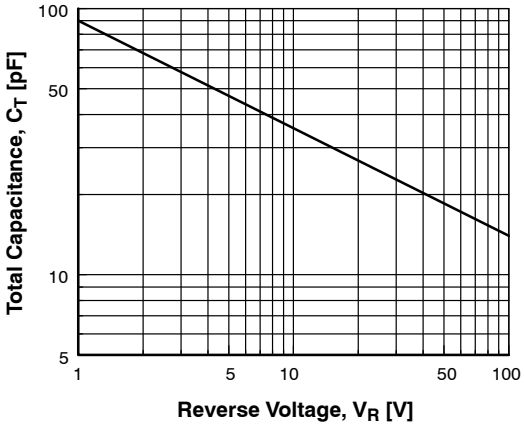

Figure 5. Total Capacitance

ORDERING INFORMATION

Part Number	Top Marking	Package	Shipping†
S3A	S3A	DO−214AB (SMC) (Pb−Free)	3000 / Tape & Reel
S3B	S3B		
S3D	S3D		
S3G	S3G		
S3J	S3J		
S3K	S3K		
S3M	S3M		
S3N	S3N		

†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.

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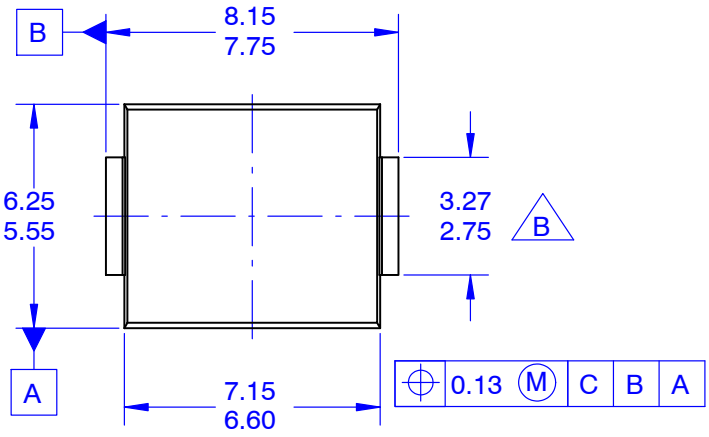
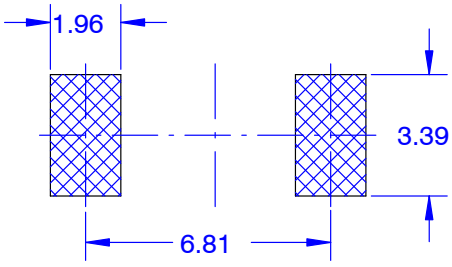
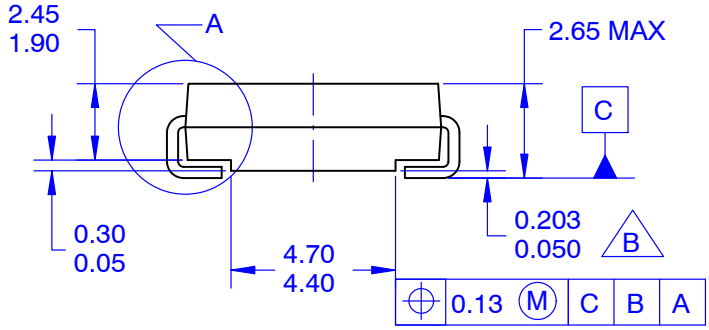


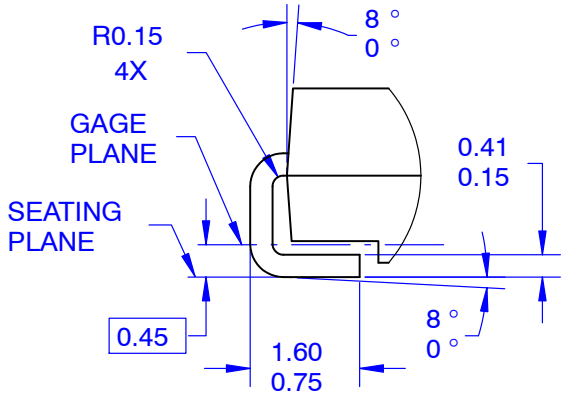
TOP VIEW



LAND PATTERN RECOMMENDATION



SIDE VIEW



DETAIL A
SCALE 2:1

NOTES:

A. EXCEPTWHERE NOTED, CONFORMS TO JEDEC DO−214, VARIATION AB

B DOES NOT COMPLY TO JEDEC STD. VALUE

C. ALL DIMENSIONS ARE IN MILLIMETERS

D. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR PROTRUSIONS.

E. DIMENSIONS AND TOLERANCING AS PER ASME Y14.5−2009

F. LAND PATTERN STANDARD: DIOM7957X241M

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PUBLICATION ORDERING INFORMATION

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