

# Fast Rectifiers

## ES1F-ES1J

### Features

- For Surface Mount Applications
- Glass Passivated Junction
- Low Profile Package
- Easy Pick and Place
- Built-in Strain Relief
- Superfast Recovery Times for High Efficiency

### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise noted)

Symbol	Parameter	Value				Unit
		ES1F	ES1G	ES1H	ES1J	
V <sub>RRM</sub>	Maximum Repetitive Reverse Voltage	300	400	500	600	V
I <sub>F(AV)</sub>	Average Rectified Forward Current	1.0				A
I <sub>FSM</sub>	Non-repetitive Peak Forward Surge Current 8.3 ms Single Half-Sine-Wave (JEDEC method)	30				A
T <sub>J</sub>	Operating Junction Temperature Range	-55 to 150				°C
T <sub>STG</sub>	Storage Temperature Range	-55 to 150				°C
P <sub>D</sub>	Power Dissipation	1.47				W

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

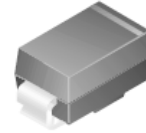
Symbol	Characteristics	Value	Unit
R <sub>θJA</sub>	Thermal Resistance, Junction-to-Ambient (Note 1)	85	°C/W
R <sub>θJC</sub>	Thermal Resistance, Junction-to-Case (Note 1)	61	°C/W
R <sub>θJL</sub>	Thermal Resistance, Junction-to-Lead (Note 1)	35	°C/W

1. P. C. B mounted on 0.2" × 0.2" (5 × 5 mm) copper Pad Area.

### ELECTRICAL CHARACTERISTICS (T<sub>C</sub> = 25°C, unless otherwise noted)

Symbol	Characteristics	Value				Unit
		ES1F	ES1G	ES1H	ES1J	
V <sub>F</sub>	Maximum Forward Voltage @ I <sub>F</sub> = 1.0 A	1.3		1.7		V
T <sub>rr</sub>	Maximum Reverse Recovery Time, I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>RR</sub> = 0.25 A	35				ns
I <sub>R</sub>	Maximum Reverse Current @ rated V <sub>R</sub> T <sub>A</sub> = 25°C T <sub>A</sub> = 100°C	5.0 100				μA
C <sub>j</sub>	Typical Junction Capacitance, V <sub>R</sub> = 4.0 V, f = 1.0 MHz	10.0		8.0		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.



SMA (DO-214AC)  
Color Band Denotes Cathode  
CASE 403AE

### ORDERING INFORMATION

Device	Package	Shipping <sup>†</sup>
ES1F	SMA (Pb-Free)	7500 / Tape & Reel
ES1G	SMA (Pb-Free)	7500 / Tape & Reel
ES1H	SMA (Pb-Free)	7500 / Tape & Reel
ES1J	SMA (Pb-Free)	7500 / Tape & Reel

<sup>†</sup>For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, [BRD8011/D](#).

# ES1F-ES1J

## TYPICAL PERFORMANCE CHARACTERISTICS

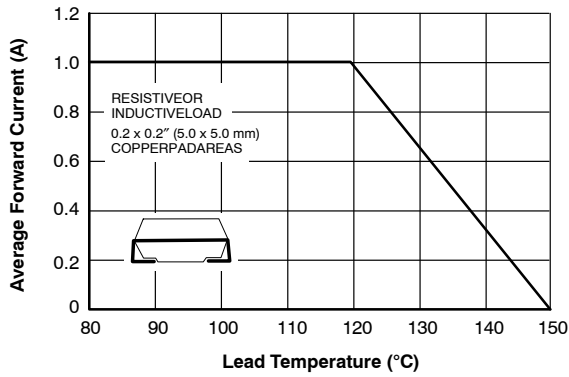


Figure 1. Maximum Forward Current Derating Curve



Figure 2. Maximum Non-repetitive Peak Forward Surge Current

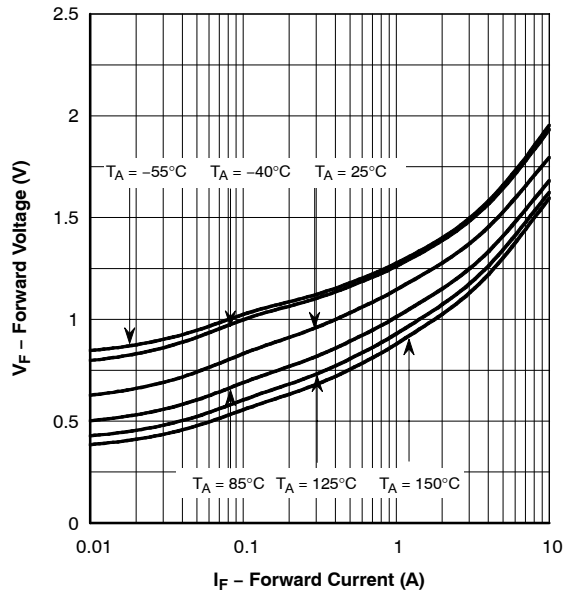


Figure 3. Forward Current vs. Forward Voltage

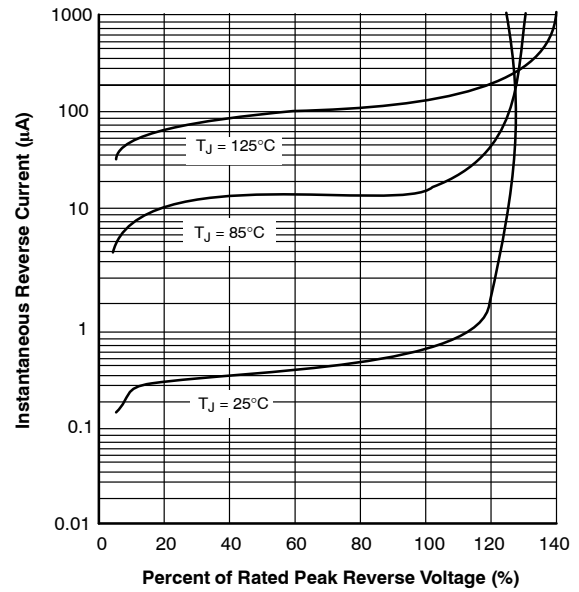


Figure 4. Typical Reverse Characteristics

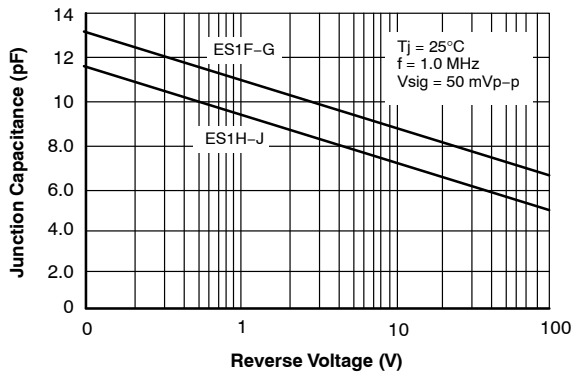
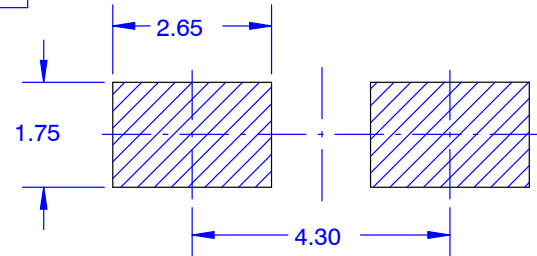
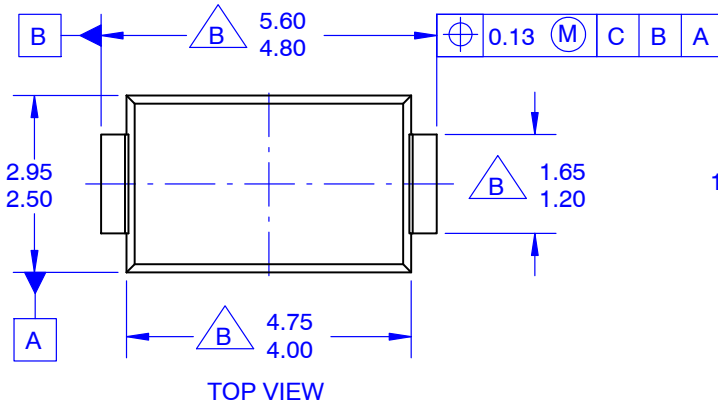


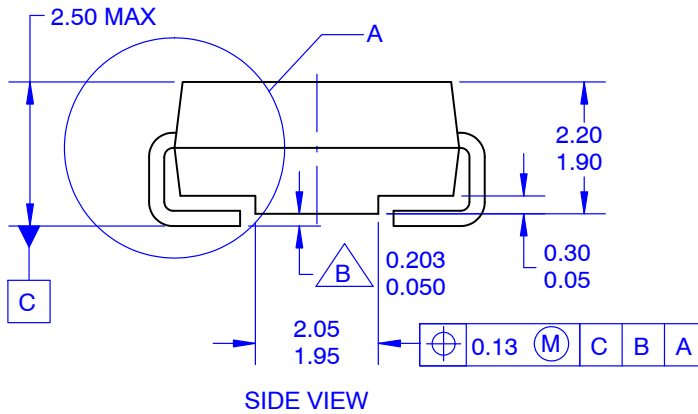
Figure 5. Typical Junction Capacitance

**SMA**  
**CASE 403AE**  
**ISSUE O**

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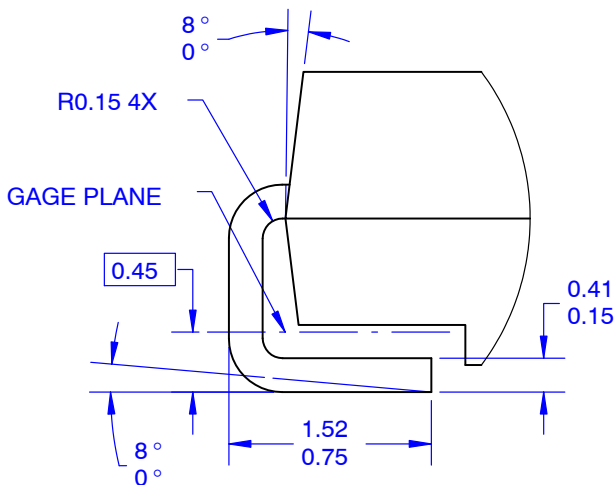


LAND PATTERN RECOMMENDATION



NOTES:

- A. EXCEPT WHERE NOTED, CONFORMS TO JEDEC DO214 VARIATION AC.
- B. DOES NOT COMPLY JEDEC STANDARD VALUE.
- C. ALL DIMENSIONS ARE IN MILLIMETERS.
- D. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
- E. DIMENSIONS AND TOLERANCE AS PER ASME Y14.5-2009.
- E. LAND PATTERN STD. DIOM5025X231M



DETAIL A  
SCALE 20 : 1

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