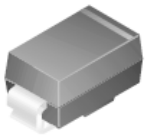
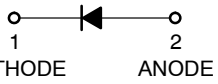
Fast Rectifiers

ES1F-ES1J





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

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

ORDERING INFORMATION

Device	Package	Shipping†
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

†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.

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

Symbol	Parameter	Value				Unit
		ES1F	ES1G	ES1H	ES1J	
V_{RRM}	Maximum Repetitive Reverse Voltage	300	400	500	600	V
$I_{F(AV)}$	Average Rectified Forward Current	1.0				A
I_{FSM}	Non-repetitive Peak Forward Surge Current 8.3 ms Single Half-Sine-Wave (JEDEC method)	30				A
T_J	Operating Junction Temperature Range	−55 to 150				°C
T_{STG}	Storage Temperature Range	−55 to 150				°C
P_D	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
$R_{\theta JA}$	Thermal Resistance, Junction−to−Ambient (Note 1)	85	°C/W
$R_{\theta JC}$	Thermal Resistance, Junction−to−Case (Note 1)	61	°C/W
$R_{\theta JL}$	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_C = 25°C, unless otherwise noted)

Symbol	Characteristics	Value				Unit
		ES1F	ES1G	ES1H	ES1J	
V_F	Maximum Forward Voltage @ I_F = 1.0 A	1.3		1.7		V
T_{rr}	Maximum Reverse Recovery Time, I_F = 0.5 A, I_R = 1.0 A, I_{RR} = 0.25 A	35				ns
I_R	Maximum Reverse Current @ rated V_R T_A = 25°C T_A = 100°C	5.0 100				μA
C_j	Typical Junction Capacitance, V_R = 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.

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TYPICAL PERFORMANCE CHARACTERISTICS

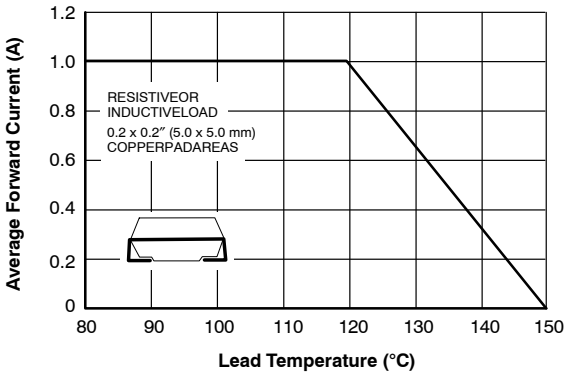

Figure 1. Maximum Forward Current Derating Curve

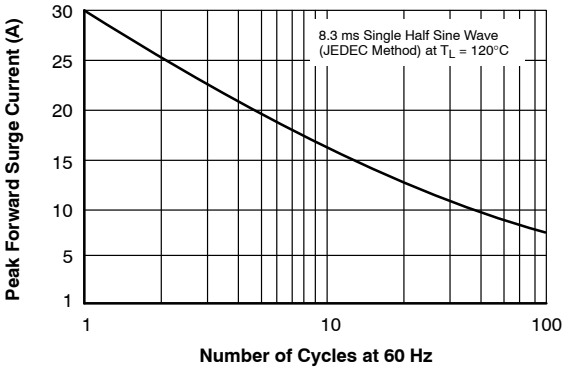

Figure 2. Maximum Non-repetitive Peak Forward Surge Current

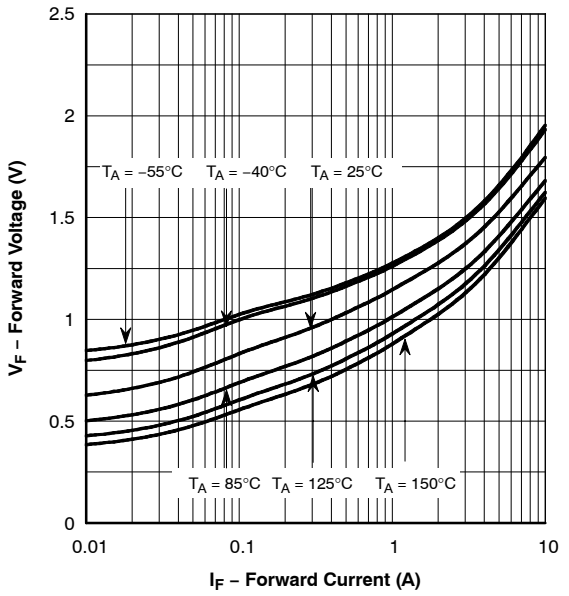

Figure 3. Forward Current vs. Forward Voltage

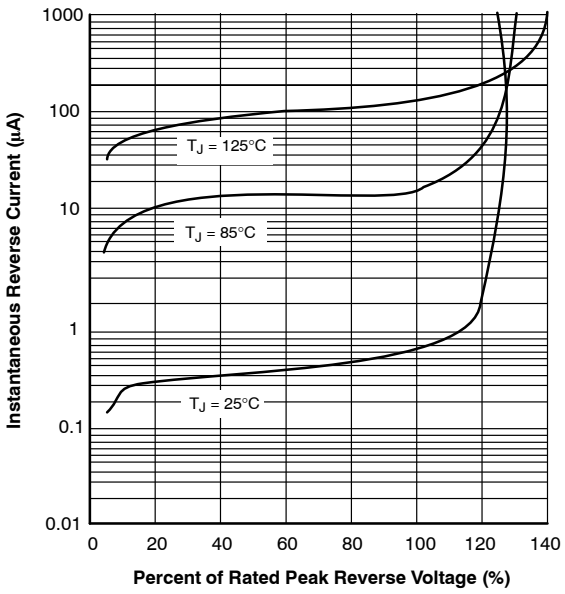

Figure 4. Typical Reverse Characteristics

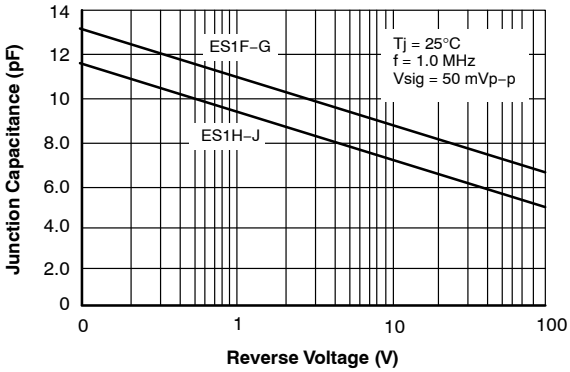

Figure 5. Typical Junction Capacitance

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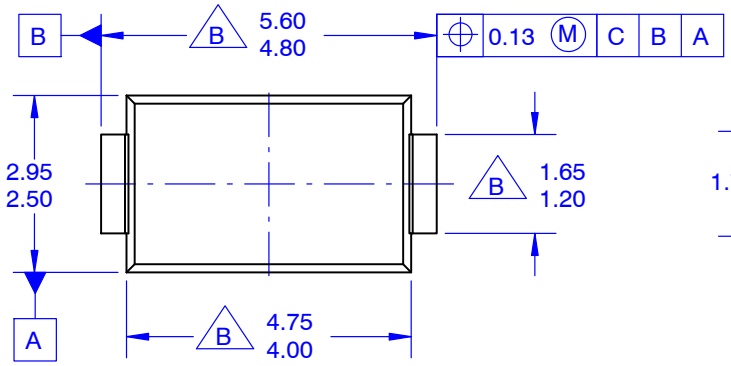
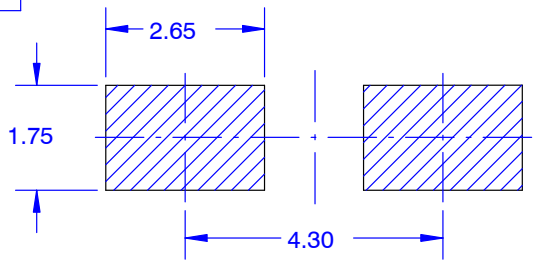
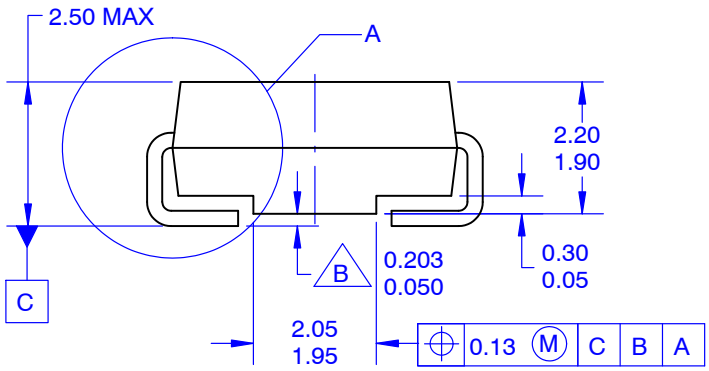


TOP VIEW



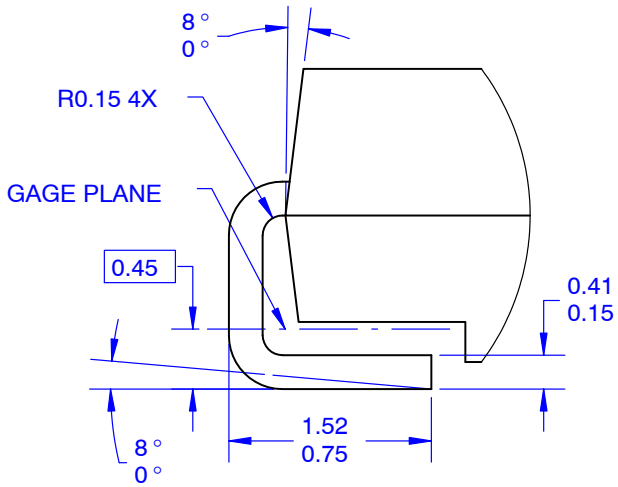
LAND PATTERN RECOMMENDATION



SIDE VIEW

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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