# onsemi

# **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

		Value				
Symbol	Parameter	ES1F	ES1G	ES1H	ES1J	Unit
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	
ΤJ	Operating Junction Temperature Range	-55 to 150			°C	
T <sub>STG</sub>	Storage Temperature Range	–55 to 150			°C	
PD	Power Dissipation	1.47			W	

ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> =  $25^{\circ}$ C unless otherwise noted)

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

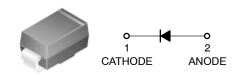
Symbol	Characteristics	Value	Unit
$R_{\thetaJA}$	Thermal Resistance, Junction-to-Ambient (Note 1)	85	°C/W
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case (Note 1)	61	°C/W
$R_{ extsf{ heta}JL}$	Thermal Resistance, Junction-to-Lead (Note 1)	35	°C/W

1. P. C. B mounted on  $0.2'' \times 0.2''$  (5 × 5 mm) copper Pad Area.

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

		Value				
Symbol	Characteristics	ES1F	ES1G	ES1H	ES1J	Unit
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, $I_{\rm F}$ = 0.5 A, $I_{\rm R}$ = 1.0 A, $I_{\rm RR}$ = 0.25 A	35		ns		
I <sub>R</sub>	Maximum Reverse Current @ rated $V_R$ $T_A = 25^{\circ}C$ $T_A = 100^{\circ}C$	5.0 100		μΑ		
$C_j$ 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.



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

+For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, <u>BRD8011/D</u>.

### ES1F-ES1J

### **TYPICAL PERFORMANCE CHARACTERISTICS**

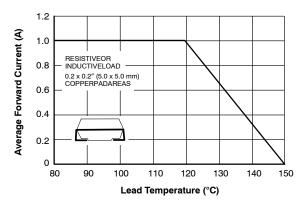


Figure 1. Maximum Forward Current Derating Curve

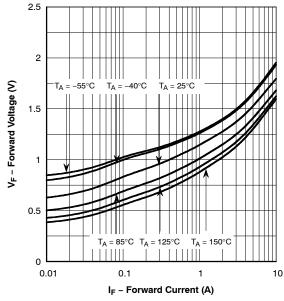


Figure 3. Forward Current vs. Forward Voltage

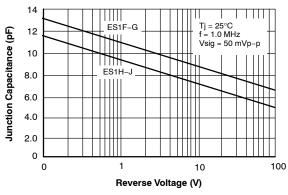


Figure 5. Typical Junction Capacitance

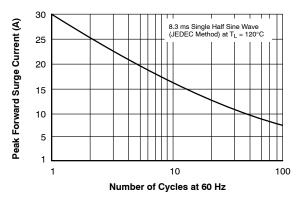
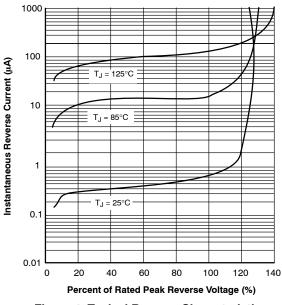


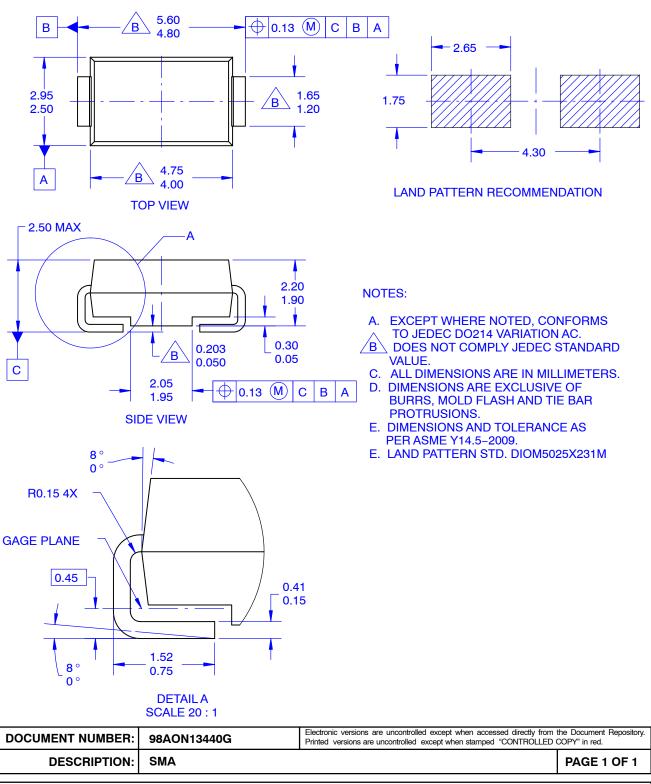
Figure 2. Maximum Non-repetitive Peak Forward Surge Current



**Figure 4. Typical Reverse Characteristics** 

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