



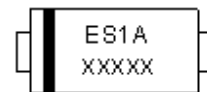
## ES1A-ES1M SURFACE MOUNT SUPER FAST RECTIFIER

### Features:

- Glass Passivated Die Construction
- Ideally Suited for Automatic Assembly
- Low Forward Overload Drop, High Efficiency
- Surge Overload Rating to 30A Peak
- Low Power Loss
- Super-Fast Recovery Time
- Plastic Case Material has UL Flammability Classification Rating 94V-0
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

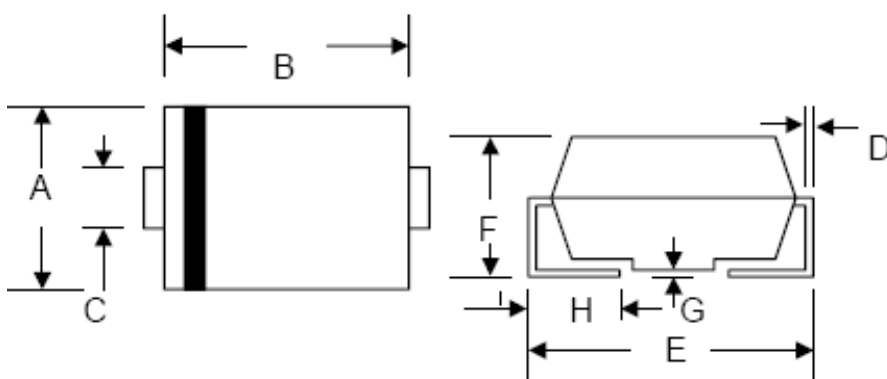
### Mechanical Data:

- Case: Low Profile Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number
- Weight: 0.06 grams(approx)



ES1A

### Mechanical Dimensions: In mm/ Inches



SMA

Dim.	SMA/DO-214AC			
	Min.	Max.	Min.	Max.
A	2.18	2.90	0.086	0.114
B	3.99	4.60	0.157	0.181
C	1.29	1.70	0.508	0.067
D	0.152	0.305	0.006	0.012
E	4.70	5.31	0.185	0.209
F	1.70	2.50	0.067	0.098
G	0.051	0.203	0.002	0.008
H	0.76	1.55	0.030	0.610
	In mm		In inch	

### MARKING, MOLDING RESIN

Marking for ES1A/B/C/D/E/G/J/K/M, 1<sup>st</sup> row ES1A/B/C/D/E/G/J/K/M, 2<sup>nd</sup> row YYWWL

Where YY is the manufacture year

WW is the manufacture week code

L is the wafer's Lot Number

Technical Data  
Data Sheet N0159, Rev. D

*Green Products*

**Ordering Information:**

Device	Package	Shipping
ES1(A-M)	SMA (Pb-Free)	5000pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

**Maximum Ratings and Electrical Characteristics**

Rating at 25°C ambient temperature unless otherwise specified

Single Phase half wave 60Hz, resistive or inductive load. For capacitive load current derate by 20%.

Characteristic	Symbol	ES1A	ES1B	ES1C	ES1D	ES1E	ES1G	ES1J	ES1K	ES1M	Units	
Peak Repetitive Reverse Voltage	$V_{RRM}$	50	100	150	200	300	400	600	800	1000	V	
RMS Reverse Voltage	$V_{R(RMS)}$	34	70	105	140	210	280	420	560	700		
Average Rectified Output Current @ $T_L = 120^\circ C$	$I_o$	1.0									A	
Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	50									A	
Forward voltage @ $I_F = 1.0A$	$V_F$	0.95			1.3		1.7			V		
Peak Reverse Current @ $T_A = 25^\circ C$ At Rated DC Blocking Voltage @ $T_A = 100^\circ C$	$I_R$	10					350					$\mu A$
Typical junction capacitance (Note 1)	$C_J$	45.0										pF
Reverse Recovery Time (Note 2)	$T_{rr}$	35										ns
Electro-Static Discharge	ESD	2000										V
Typical thermal resistance (Note 3)	$R_{\theta JL}$	35										K/W
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150									$^\circ C$	
Case Style		SMA										

**Note:** 1. Measured at 1.0 MHz and applied reverse voltage of 4.0 VDC  
 2. Measured with  $I_F = 0.5A$ ,  $I_R = 1.0A$ ,  $I_{rr} = 0.25A$ ,  
 3. Mounted on P.C. Board with 8.0mm<sup>2</sup> lead area

**Technical Data**  
**Data Sheet N0159, Rev. D**

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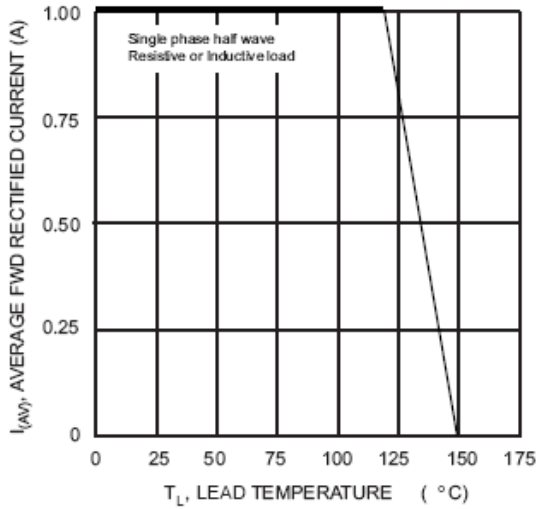


Fig. 1 Forward Current Derating Curve

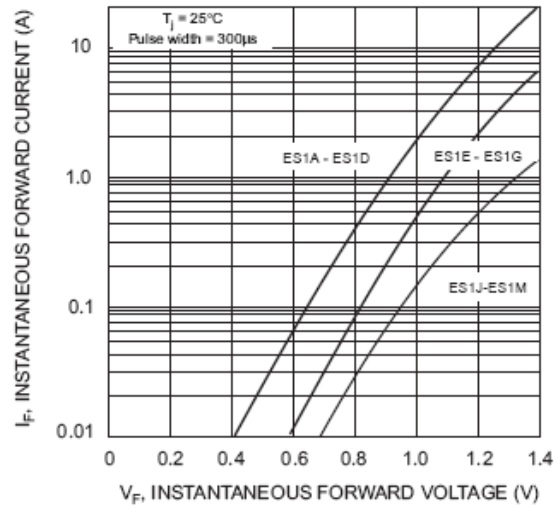


Fig. 2 Typical Forward Characteristics

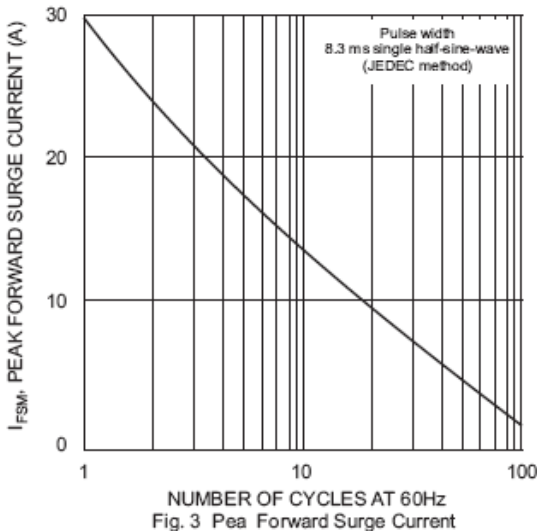


Fig. 3 Peak Forward Surge Current

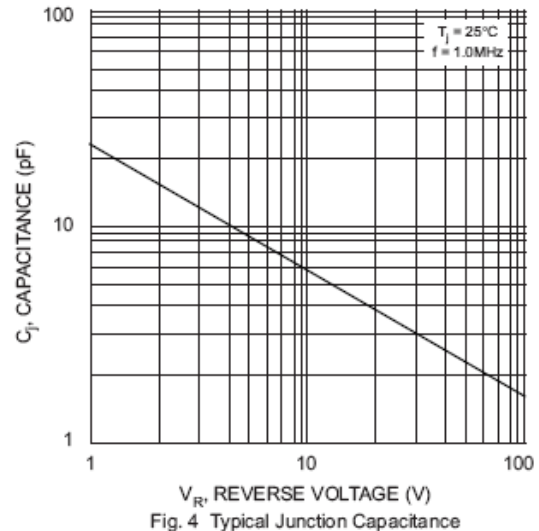
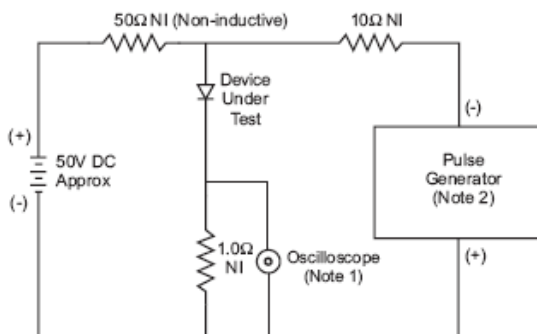


Fig. 4 Typical Junction Capacitance



- Notes:  
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.  
2. Rise Time = 10ns max. Input Impedance = 50Ω.

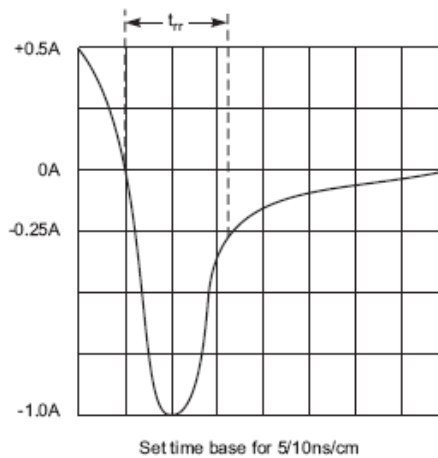


Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

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