Technical Data
Data Sheet N0159, Rev. D

Green Products

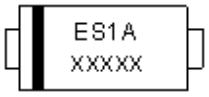
ES1A-ES1M SURFACE MOUNT SUPER FAST RECTIFIER

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-O**
- **This is a Pb − Free Device**
- **All SMC parts are traceable to the wafer lot**
- **Additional testing can be offered upon request**

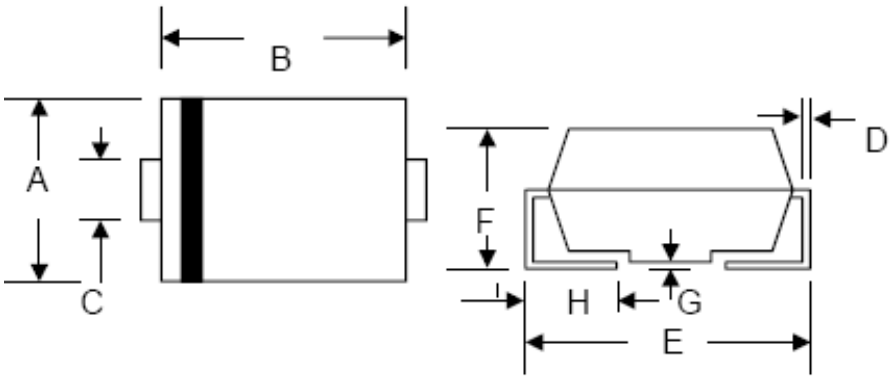
Mechanical Data:

- **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

	SMA/DO-214AC			
Dim.	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, 1st row ES1A/B/C/D/E/G/J/K/M, 2nd row YYWWL
Where YY is the manufacture year
WW is the manufacture week code
L is the wafer's Lot Number

ES1A-ES1M

1.0A SURFACE MOUNT SUPER FAST RECTIFIER

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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°C	Io	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°C At Rated DC Blocking Voltage @T_A = 100°C	I_R	10 350									μA
Typical junction capacitance (Note 1)	C_J	45.0									pF
Reverse Recovery Time (Note 2)	Trr	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									°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^2 lead area

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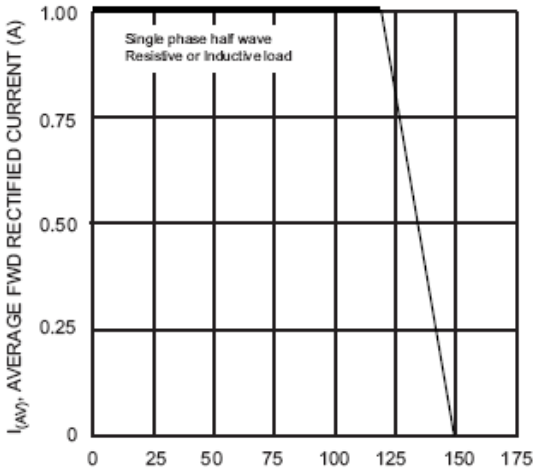


Fig. 1 Forward Current Derating Curve

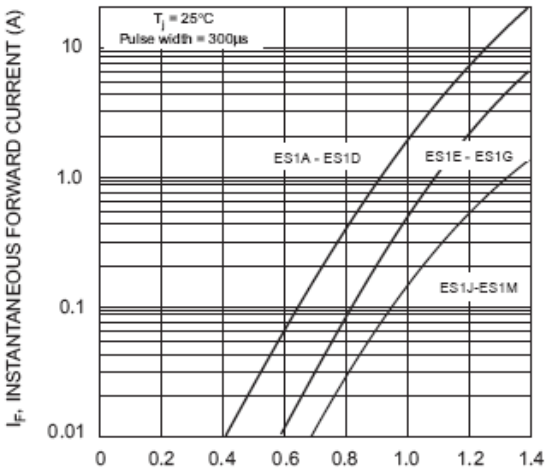


Fig. 2 Typical Forward Characteristics

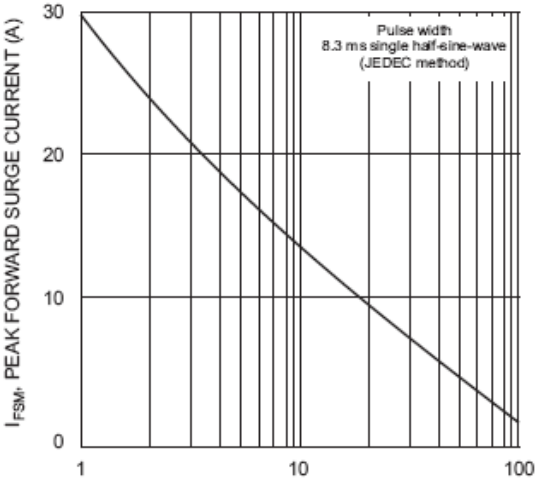


Fig. 3 Pea Forward Surge Current

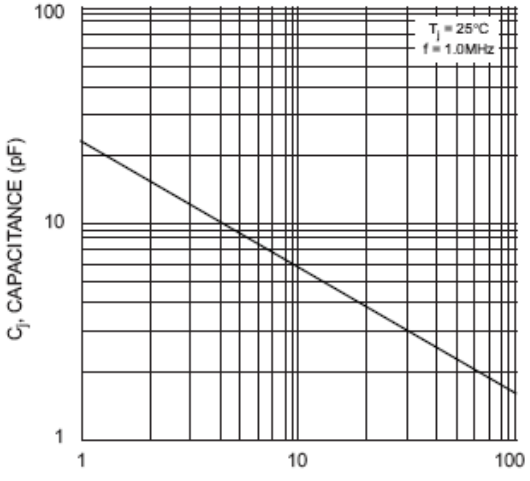
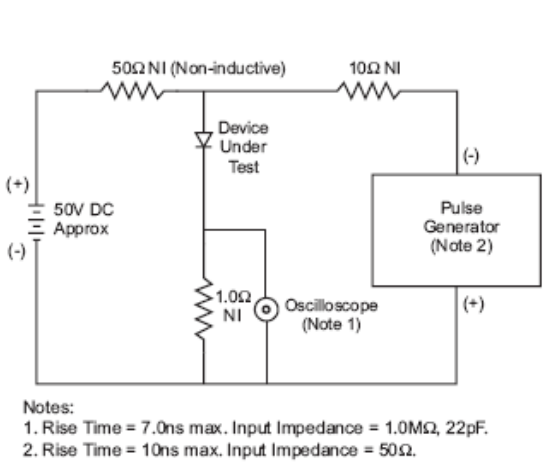


Fig. 4 Typical Junction Capacitance



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

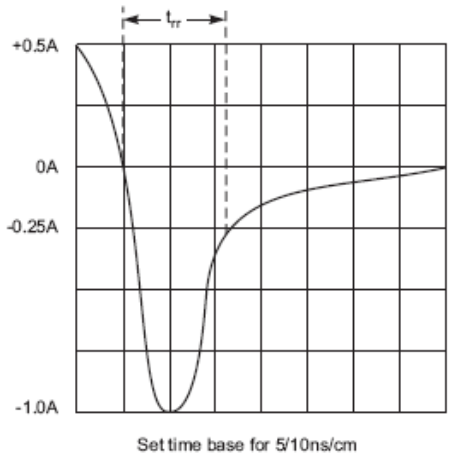


Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

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