



## Surface Mount Superfast Recovery Rectifier

Reverse Voltage – 1000 V

Forward Current – 1 A

### FEATURES

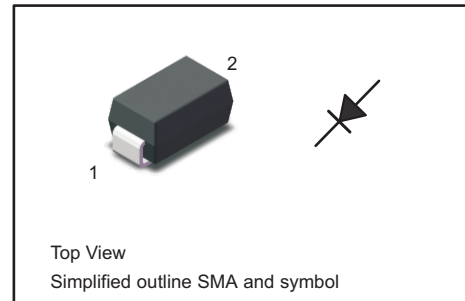
- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Superfast reverse recovery time
- Lead free in comply with EU RoHS 2011/65/EU directives

### MECHANICAL DATA

- Case: SMA
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.055g / 0.002oz

### PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



### Absolute Maximum Ratings and Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

Parameter	Symbols	ES1M	Units
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	1000	V
Maximum RMS voltage	$V_{RMS}$	700	V
Maximum DC Blocking Voltage	$V_{DC}$	1000	V
Maximum Average Forward Rectified Current @ Fig.1	$I_{F(AV)}$	1	A
Peak Forward Surge Current,8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	$I_{FSM}$	30	A
Peak Forward Surge Current,1.0ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	$I_{FSM}$	60	A
$I^2t$ Rating for fusing (3ms≤t≤8.3ms)	$I^2t$	3.7	A <sup>2</sup> S
Max Instantaneous Forward Voltage at 1 A	$V_F$	3.2	V
Maximum DC Reverse Current at Rated DC Reverse Voltage	$I_R$	5 100	μA
Typical Junction Capacitance <sup>(1)</sup>	$C_j$	8	pF
Maximum Reverse Recovery Time <sup>(2)</sup>	$t_{rr}$	35	ns
Typical Thermal Resistance <sup>(3)</sup>	$R_{\theta JA}$ $R_{\theta JC}$ $R_{\theta JL}$	100 20 25	°C/W
Operating and Storage Temperature Range	$T_j, T_{stg}$	-55 ~ +150	°C

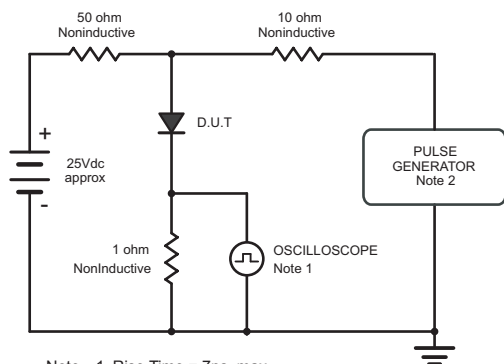
(1) Measured at 1 MHz and applied reverse voltage of 4 V D.C

(2) Measured with  $I_F = 0.5 A, I_R = 1 A, I_{rr} = 0.25 A$ .

(3) P.C.B. mounted with 0.2" X 0.2" (5 X 5 mm) copper pad areas.



Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram



Note: 1. Rise Time = 7ns, max.  
Input Impedance = 1megohm, 22pF.  
2. Rises Time = 10ns, max.  
Source Impedance = 50 ohms.

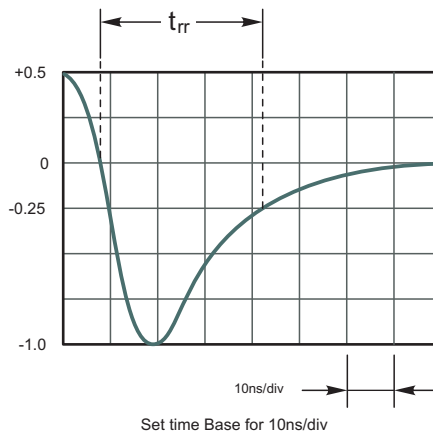


Fig.2 Maximum Average Forward Current Rating

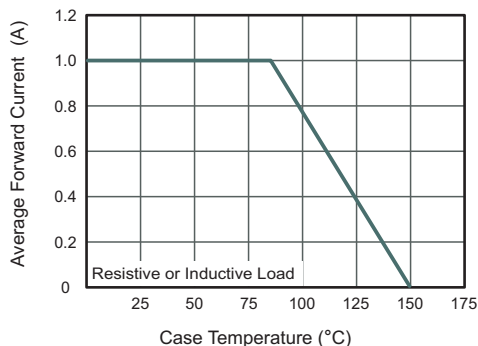


Fig.3 Typical Reverse Characteristics

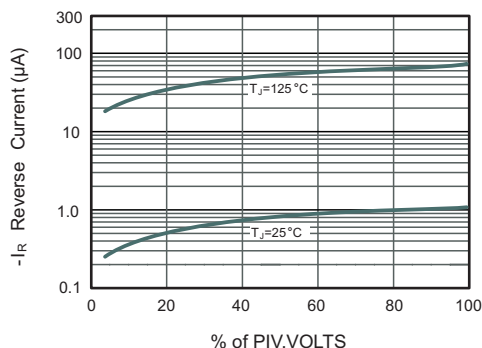


Fig.4 Typical Forward Characteristics

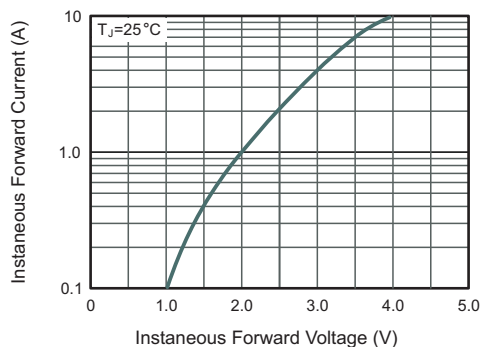


Fig.5 Typical Junction Capacitance

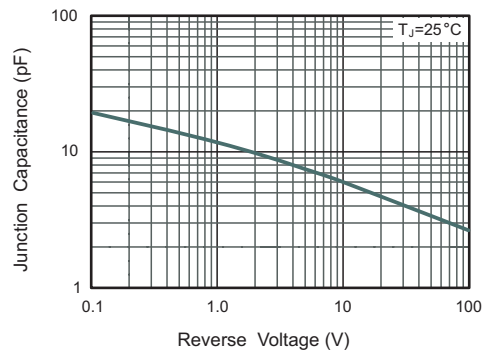
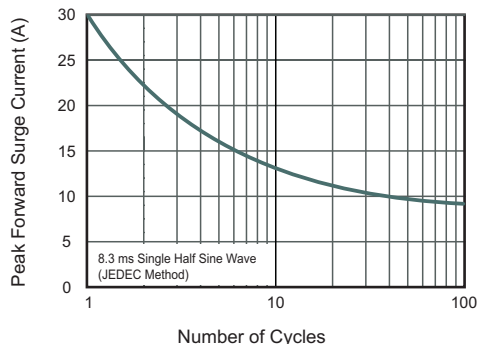


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current

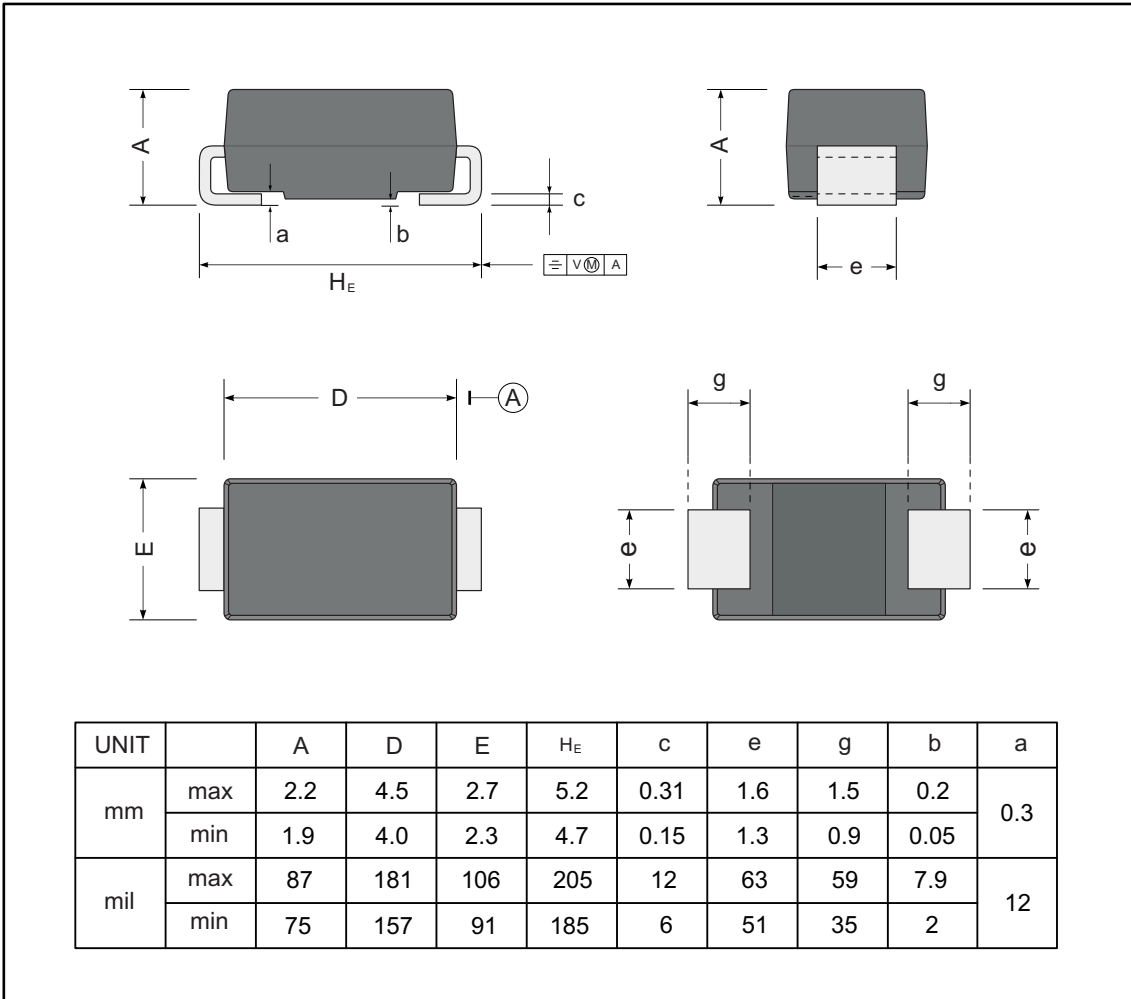




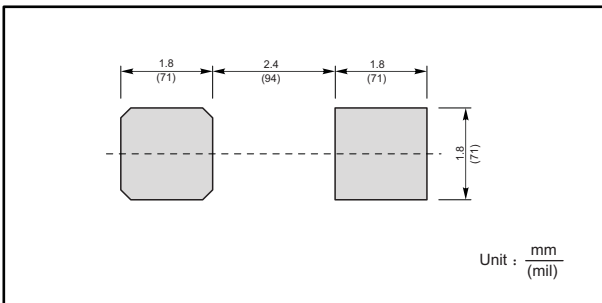
**PACKAGE OUTLINE**

Plastic surface mounted package; 2 leads

SMA



**The recommended mounting pad size**



**Marking**

Type number	Marking code
ES1M	ES1M



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