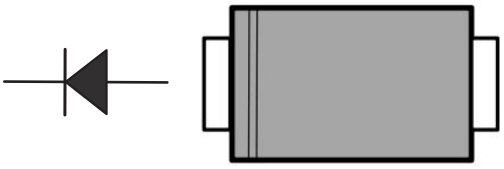
Surface Mount Superfast Recovery Rectifier

Parameter	Value	Unit
V_{RRM}	50~600	V
$I_{F(AV)}$	1.0	A
T_{RR}	35	ns



SMAF

Features

- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Super fast reverse recovery time

Applications

- For use in high-frequency rectification and free-wheeling applications in switching-mode converters and inverters for consumer electronics, computer systems, and telecommunications.

Absolute Maximum Ratings and Characteristics (at TJ = 25°C unless otherwise specified)

Parameter	Symbol	ES1AF	ES1BF	ES1CF	ES1DF	ES1EF	ES1GF	ES1JF	Units
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	50	100	150	200	300	400	600	V
Maximum RMS voltage	V_{RMS}	35	70	105	140	210	280	420	V
Maximum DC Blocking Voltage	V_{DC}	50	100	150	200	300	400	600	V
Maximum Average Forward Rectified Current at Tc=125℃	$I_{F(AV)}$	1.0							A
Peak Forward Surge Current 8.3ms Single Half Sine Wave Superimposed on Rated Load	I_{FSM}	30							A
Maximum Forward Voltage at 1A	V_F	1.0				1.25		1.68	V
Maximum DC Reverse Current Ta=25℃ at Rated DC Blocking Voltage Ta=125℃	I_R	5 100							μA
Typical Junction Capacitance at VR=4V, f=1MHz	C_j	15							pF
Maximum Reverse Recovery Time(1)	t_{rr}	35							ns
Typical Thermal Resistance(2)	$R_{\theta JA}$	80							℃/W
Operating and Storage Temperature Range	T_j , T_{stg}	-55 ~ +150							℃

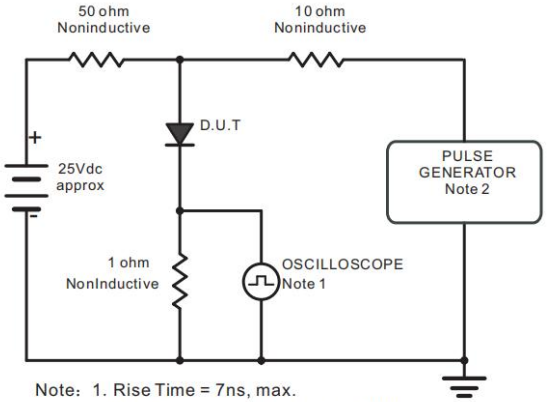
Notes:

（1）Measured with IF = 0.5A, IR = 1A, Irr = 0.25A.

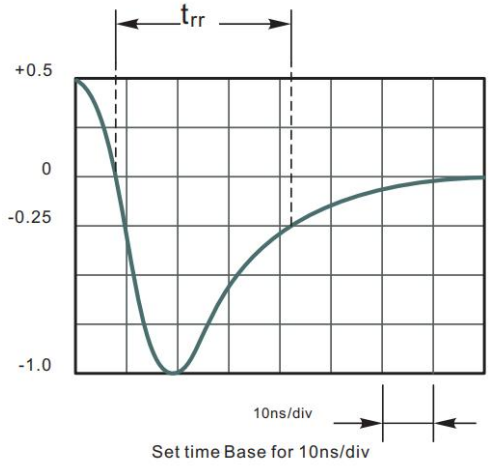
（2）P.C.B. mounted with 2.0" X 2.0" (5 X 5cm) copper pad areas.

Typical Characteristics

Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram



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



Set time Base for 10ns/div

Fig.2 Maximum Average Forward Current Rating

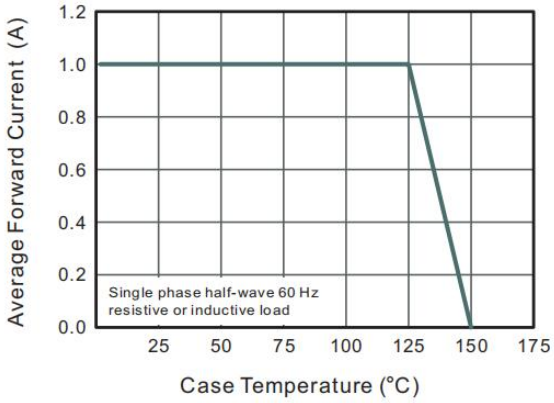


Fig.3 Typical Reverse Characteristics

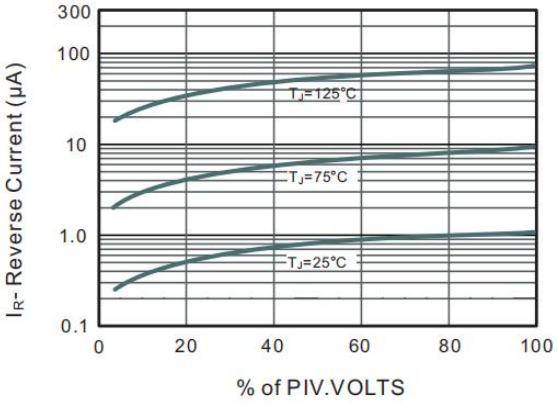


Fig.4 Typical Forward Characteristics

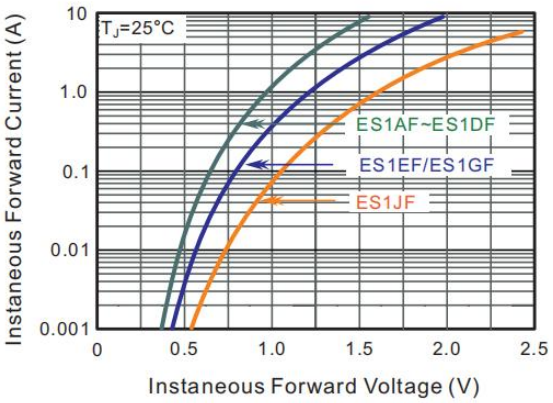


Fig.5 Typical Junction Capacitance

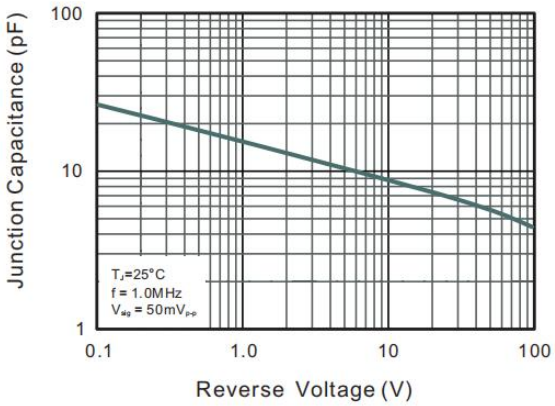
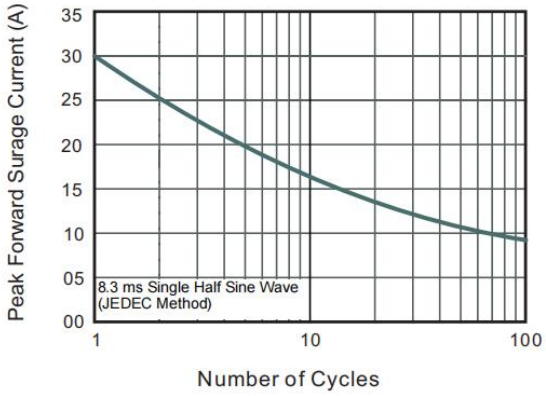


Fig.6 Maximum Non-Repetitive Peak Forward Surage Current



Package Outlines

Plastic surface mounted package; 2 leads

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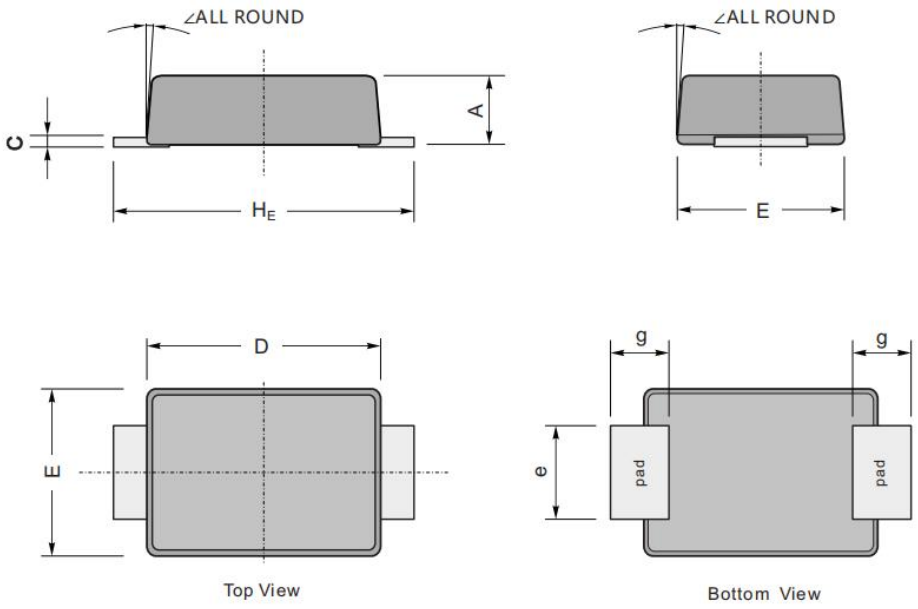
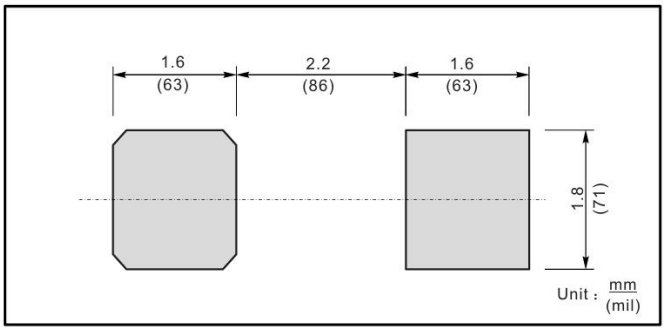


UNIT		A	C	D	E	e	g	H_E	∠
mm	max	1.2	0.20	3.7	2.7	1.6	1.2	4.9	5°
	min	0.9	0.12	3.3	2.4	1.3	0.8	4.4	
mil	max	47	7.9	146	106	63	47	193	
	min	35	4.7	130	94	51	31	173	

The recommended mounting pad size



Marking

Type number	Marking code
ES1AF	ES1A
ES1BF	ES1B
ES1CF	ES1C
ES1DF	ES1D
ES1EF	ES1E
ES1GF	ES1G
ES1JF	ES1J

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