Surface Mount Superfast Recovery Rectifier

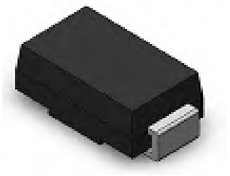
FEATURES:

- 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

Marking

Type number	Marking code
ES3A	ES3A
ES3B	ES3B
ES3C	ES3C
ES3D	ES3D
ES3E	ES3E
ES3G	ES3G
ES3J	ES3J

Circuit Diagram & Pin Configuration:



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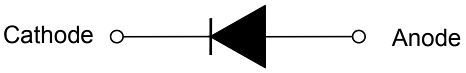


Absolute Maximum Ratings and Characteristics

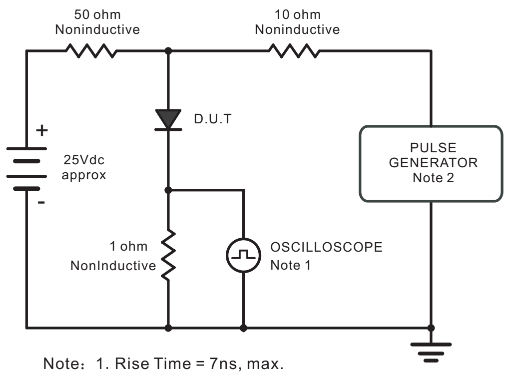
Ratings at 25 °C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Parameter	Symbols	ES3A	ES3B	ES3C	ES3D	ES3E	ES3G	ES3J	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 T_c = 125 °C	$I_{F(AV)}$	3							A
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load	I_{FSM}	80							A
Maximum Forward Voltage at 3 A	V_F	1				1.25		1.68	V
Maximum DC Reverse Current T_a = 25 °C at Rated DC Blocking Voltage T_a =125 °C	I_R	5 100							μA
Typical Junction Capacitance at V_R=4V, f=1MHz	C_j	40							pF
Maximum Reverse Recovery Time (1)	t_{rr}	35							ns
Typical Thermal Resistance (2)	$R_{\theta JA}$ $R_{\theta JC}$	50 16							°C/W
Operating and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150							°C

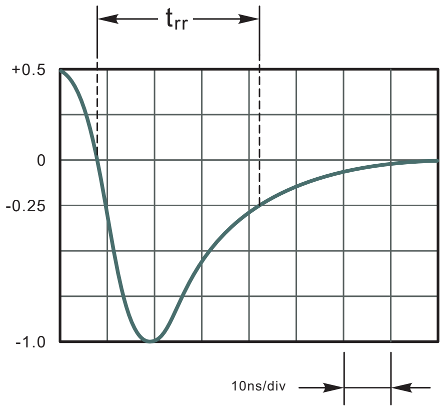
(1) Measured with I_F = 0.5 A, I_R = 1 A, I_{rr} = 0.25 A.

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

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

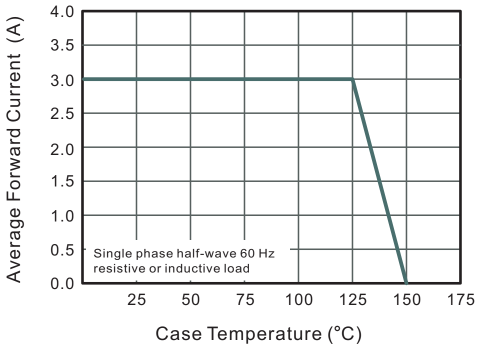


Fig.3 Typical Reverse Characteristics

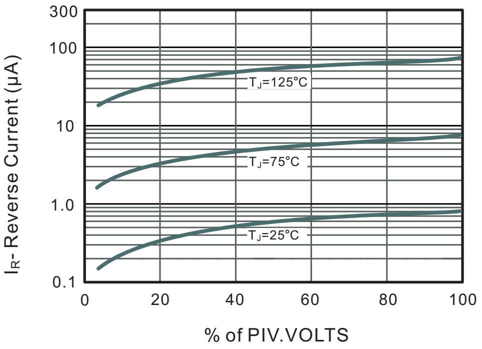


Fig.4 Typical Forward Characteristics

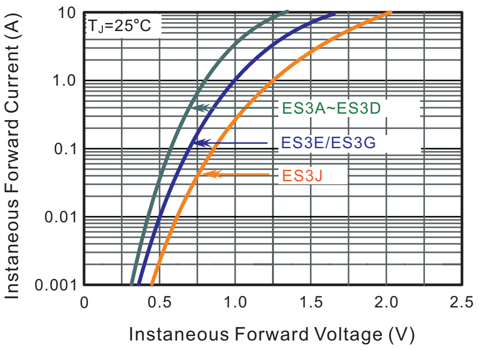


Fig.5 Typical Junction Capacitance

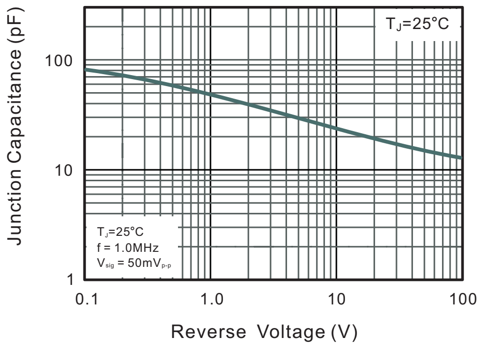


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current

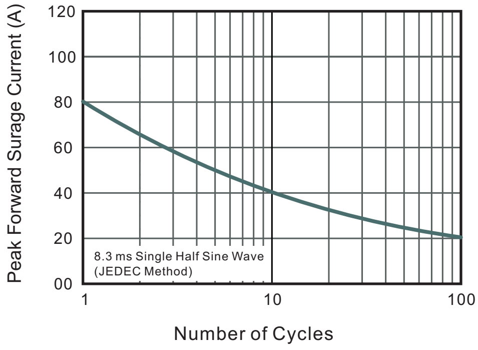
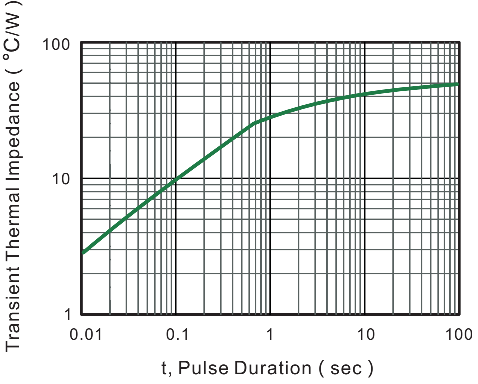


Fig.7- Typical Transient Thermal Impedance



PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

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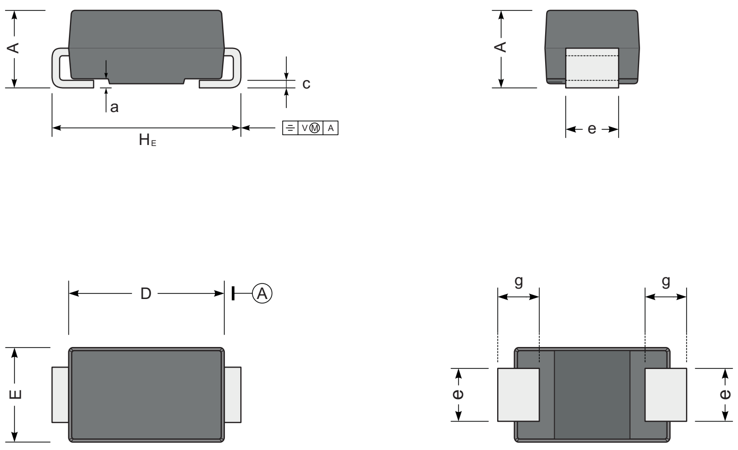
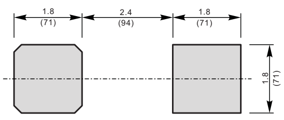


UNIT		A	D	E	HE	c	e	g	a
mm	max	2.2	4.5	2.7	5.2	0.31	1.6	1.5	0.3
	min	1.9	4.0	2.3	4.7	0.15	1.3	0.9	
mil	max	87	181	106	205	12	63	59	12
	min	75	157	91	185	6	51	35	

The recommended mounting pad size



Unit : mm / (mil)

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