

**SURFACE MOUNT GLASS PASSIVATED
SUPER FAST SILICON RECTIFIER**
VOLTAGE RANGE 50 to 600 Volts CURRENT 3.0 Ampere

FEATURES

- * Glass passivated device
- * Ideal for surface mounted applications
- * Low leakage current
- * Metallurgically bonded construction
- * Mounting position: Any

MECHANICAL DATA

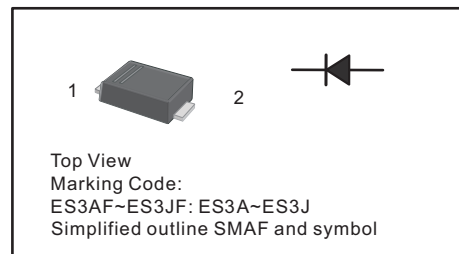
- * Epoxy : Device has UL flammability classification 94V-0

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.
Resistive or inductive load.

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



MAXIMUM RATINGS (@ TA=25 °C unless otherwise noted)

RATINGS	SYMBOL	ES3AF	ES3BF	ES3CF	ES3DF	ES3EF	ES3GF	ES3JF	UNITS
Maximum Recurrent Peak Reverse Voltage	V _{RRM}	50	100	150	200	300	400	600	Volts
Maximum RMS Voltage	V _{RMS}	35	70	105	140	210	280	420	Volts
Maximum DC Blocking Voltage	V _{DC}	50	100	150	200	300	400	600	Volts
Maximum Average Forward Rectified Current at T _C = 125 °C	I _O	3.0							Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I _{FSM}	80							Amps
Typical Current Square Time	I ² T	26.56							A ² S
Typical Thermal Resistance	R _{θJA}	50							°C/W
	R _{θJC}	16							
Typical Junction Capacitance (Note 2)	C _J	40							pF
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to + 150							°C

ELECTRICAL CHARACTERISTICS (@ TA=25 °C unless otherwise noted)

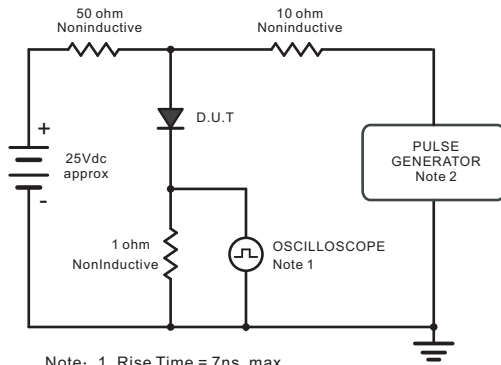
CHARACTERISTICS		SYMBOL	ES3AF	ES3BF	ES3CF	ES3DF	ES3EF	ES3GF	ES3JF	UNITS
Maximum Instantaneous Forward Voltage at 3.0ADC		V _F	1.0				1.25		1.68	Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	@T _A = 25°C	I _R	5.0							μAmps
	@T _A = 150°C		1.0							mAmps
Maximum Reverse Recovery Time (Note 1)		t _{rr}	35							nSec

- NOTES: 1. Reverse Recovery Test Conditions: $I_F = 0.5A$, $I_R = -1.0A$, $I_{RR} = -0.25A$
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts
3. Thermal Resistance : Mounted on PCB.

2019-01/08
REV: 0

RATING AND CHARACTERISTICS CURVES (ES3AF THRU ES3JF)

Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram



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

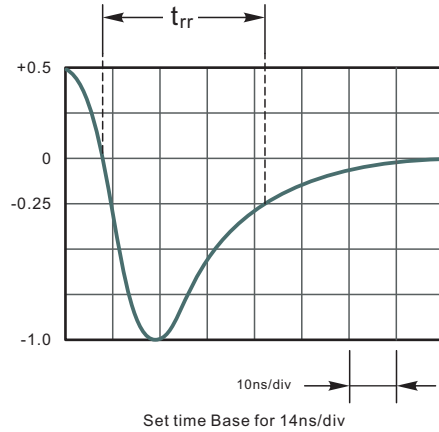


Fig.2 Maximum Average Forward Current Rating

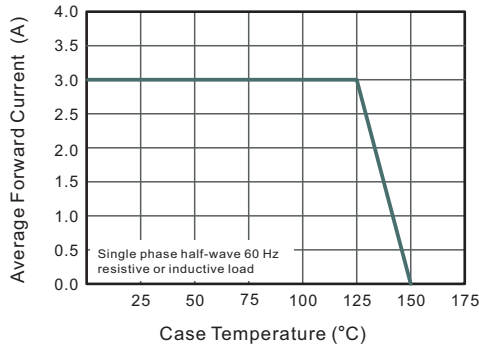


Fig.3 Typical Reverse Characteristics

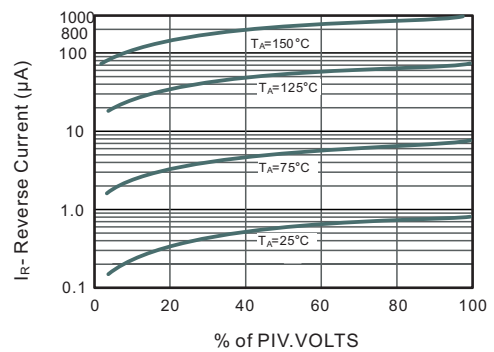


Fig.4 Typical Forward Characteristics

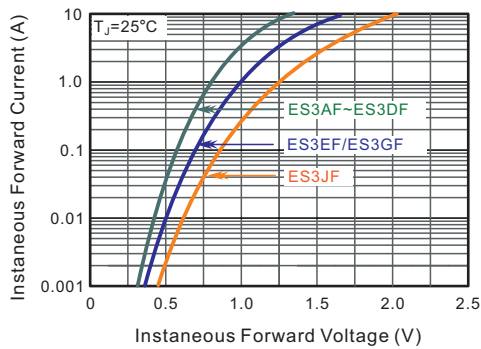


Fig.5 Typical Junction Capacitance

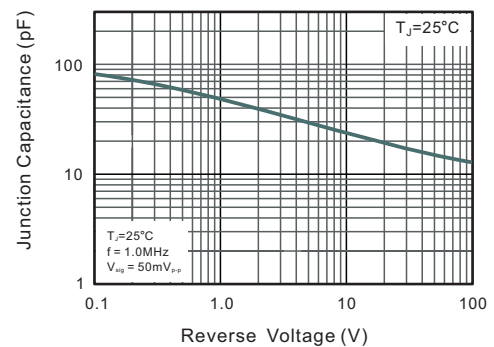
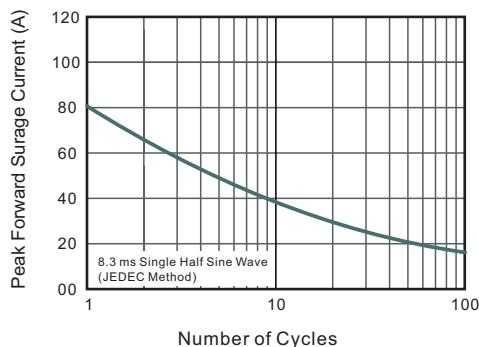


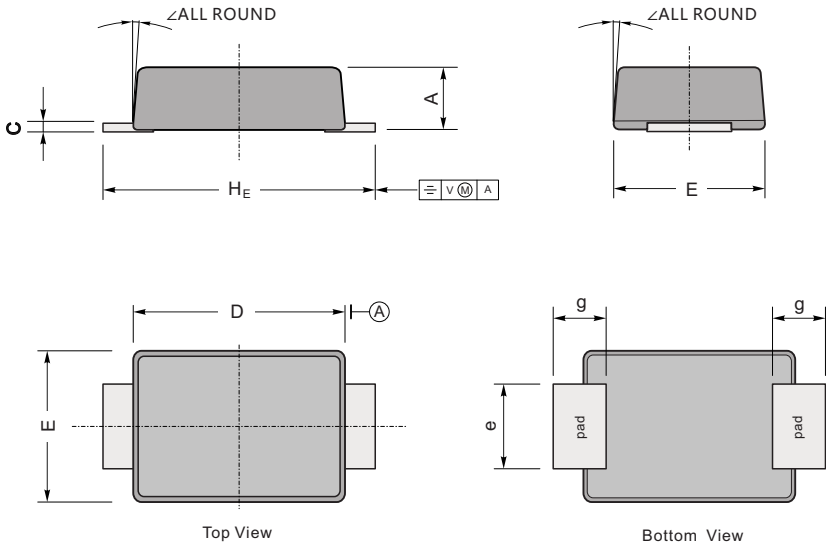
Fig.6 Maximum Non-Repetitive Peak Forward Surge Current



PACKAGE OUTLINE

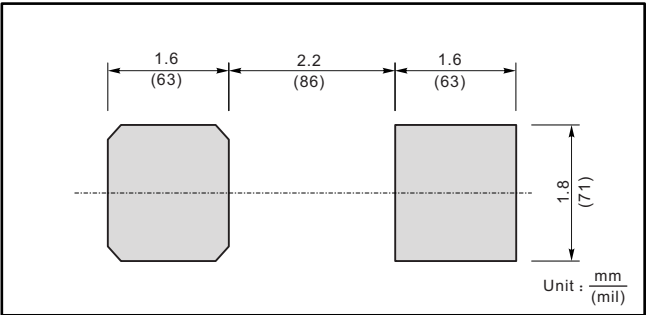
Plastic surface mounted package; 2 leads

SMAF



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	7°
	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
ES3AF	ES3A
ES3BF	ES3B
ES3CF	ES3C
ES3DF	ES3D
ES3EF	ES3E
ES3GF	ES3G
ES3JF	ES3J

PACKAGING OF DIODE AND BRIDGE RECTIFIERS

REEL PACK

PACKAGE	PACKING CODE	EA PER REEL	EA PER INNER BOX	COMPONENT SPACE (mm)	TAPE SPACE (mm)	REEL DIA (mm)	CARTON SIZE (mm)	EA PER CARTON	GROSS WEIGHT(Kg)
SMAF	-T	3,000	12,000	---	---	178	390*205*310	96,000	---

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