RECTRON SEMICONDUCTOR
TECHNICAL SPECIFICATION

ES3AF THRU ES3JF

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

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode

Top View
Marking Code:
ES3AF~ES3JF: ES3A~ES3J
Simplified outline SMAF and symbol

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

MAXIMUM RATINGS (@ T_A=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^2T	26.56							A^2S
Typical Thermal Resistance	$R_{\theta JA}$	50							°C/W
	$R_{\theta JC}$	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(@T_A=25 °C unless otherwise noted)

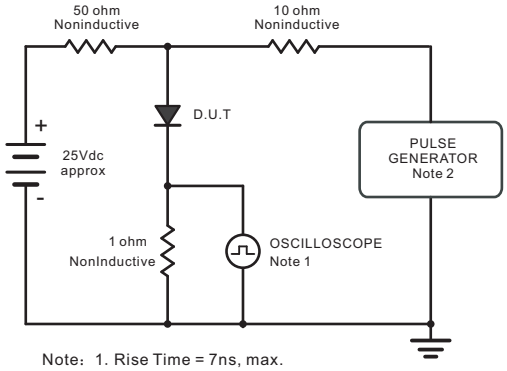
CHARACTERISTICS		SYMBOL	ES3AF	ES3BF	ES3CF	ES3DF	ES3EF	ES3GF	ES3JF	UNITS
Maximum Instantaneous Forward Voltage at 3.0A DC		V_F	1.0				1.25		1.68	Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	@T_A = 25°C	I_R	5.0							µAmps
	@T_A = 150°C		1.0							mAmps
Maximum Reverse Recovery Time (Note 1)		trr	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.

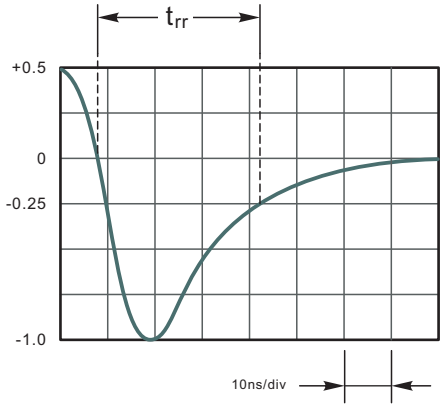
2019-01/08
REV: O

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. Ries Time =10ns, max.
Source Impedance = 50 ohms.



Set time Base for 14ns/div

Fig.2 Maximum Average Forward Current Rating

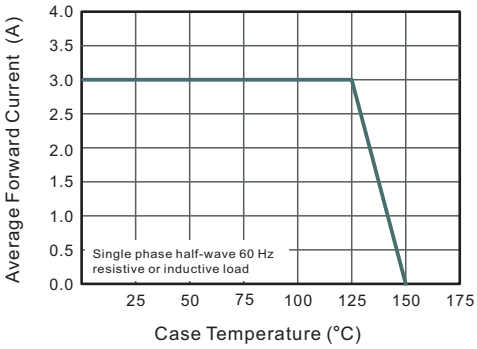


Fig.3 Typical Reverse Characteristics

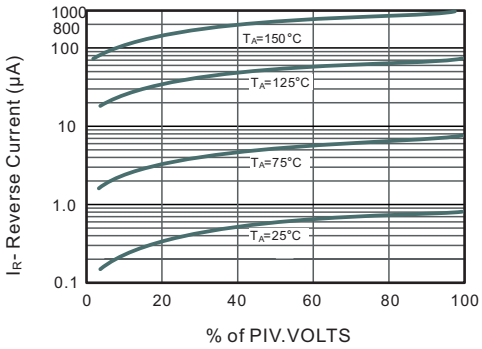


Fig.4 Typical Forward Characteristics

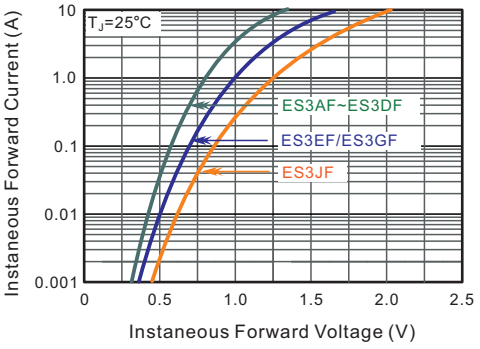


Fig.5 Typical Junction Capacitance

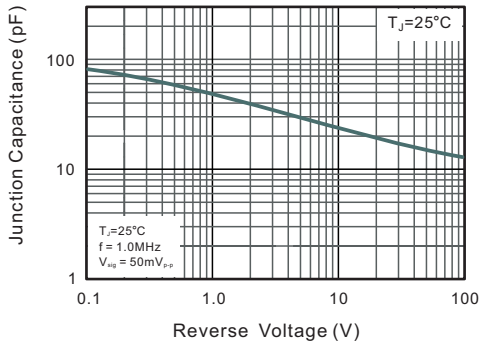
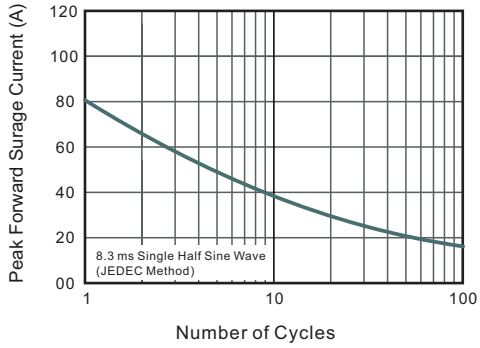
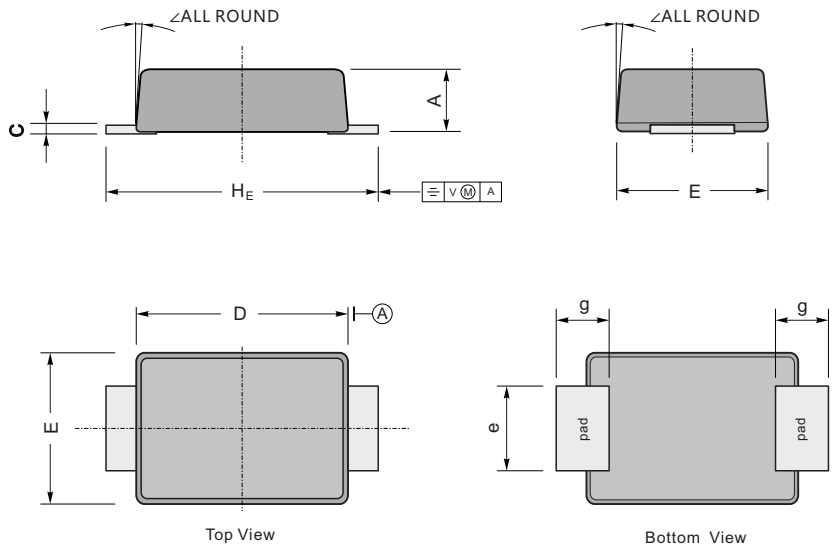


Fig.6 Maximum Non-Repetitive Peak Forward Surage Current



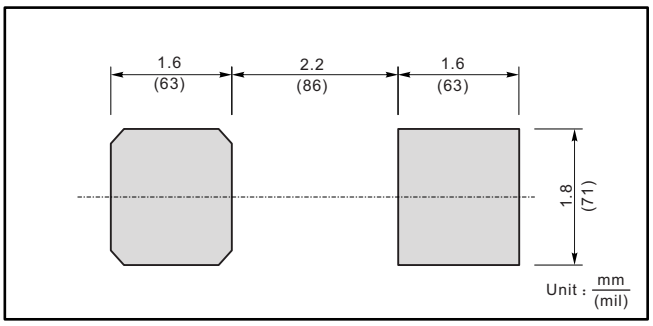
PACKAGE OUTLINE

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	---

DISCLAIMER NOTICE

Rectron Inc reserves the right to make changes without notice to any product specification herein, to make corrections, modifications, enhancements or other changes. Rectron Inc or anyone on its behalf assumes no responsibility or liability for any errors or inaccuracies. Data sheet specifications and its information contained are intended to provide a product description only. "Typical" parameters which may be included on RECTRON data sheets and/ or specifications can and do vary in different applications and actual performance may vary over time. Rectron Inc does not assume any liability arising out of the application or use of any product or circuit.

Rectron products are not designed, intended or authorized for use in medical, life-saving implant or other applications intended for life-sustaining or other related applications where a failure or malfunction of component or circuitry may directly or indirectly cause injury or threaten a life without expressed written approval of Rectron Inc. Customers using or selling Rectron components for use in such applications do so at their own risk and shall agree to fully indemnify Rectron Inc and its subsidiaries harmless against all claims, damages and expenditures.