



DC COMPONENTS CO., LTD.

RECTIFIER SPECIALISTS

ES3AF
THRU
ES3JF

TECHNICAL SPECIFICATIONS OF SURFACE MOUNT SUPER FAST RECOVERY RECTIFIER

VOLTAGE RANGE 50 to 600 Volts

CURRENT 3.0 Amperes

FEATURES

- * Ideal for surface mounted applications
- * Low leakage current
- * Glass passivated junction
- * High efficiency
- * Superfast reverse recovery time

MECHANICAL DATA

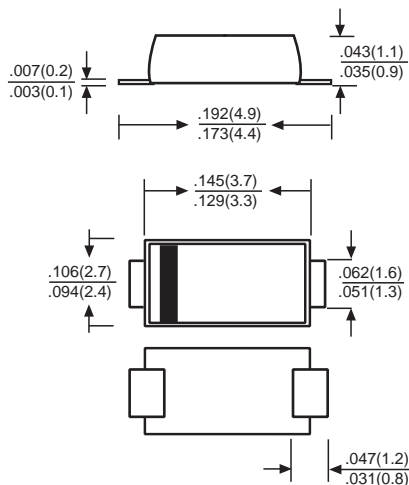
- * Case: Molded plastic
- * Epoxy: UL 94V-0 rate flame retardant
- * Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- * Polarity: As marked
- * Mounting position: Any
- * Weight: 0.03 gram

MAXIMUM RATINGS AND ELECTRICAL 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%.



SMAFL



Dimensions in inches and (millimeters)

		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 _A = 100°C		I _O	3.0						Amps	
Peak Forward Surge Current I _{FM} (surge): 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)		I _{FSM}	100						Amps	
Maximum 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 = 125°C		100							
Maximum Reverse Recovery Time (Note 1)		t _{rr}	35							nSec
Typical Thermal Resistance (Note 2)		R _{θJA}	60							°C/W
Typical Junction Capacitance (Note 3)		C _j	45							pF
Operating and Storage Temperature Range		T _J , T _{STG}	-55 to +150							°C

NOTES : 1. Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A.

2. P.C.B. mounted with 0.5x0.5 in² (12.7x12.7mm²) copper pads to each terminal.

3. Measured at 1.0 MHz and applied reverse voltage of 4.0 VDC.

RATING AND CHARACTERISTIC CURVES (ES3AF THRU ES3JF)

FIG. 1 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

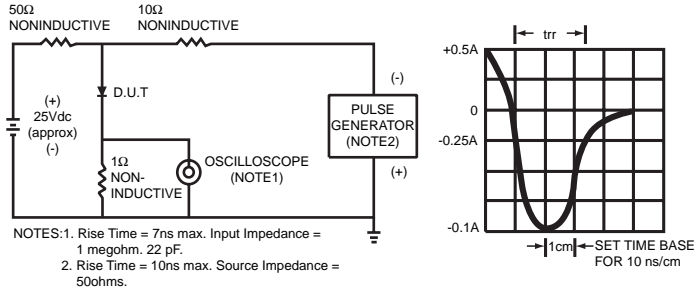


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

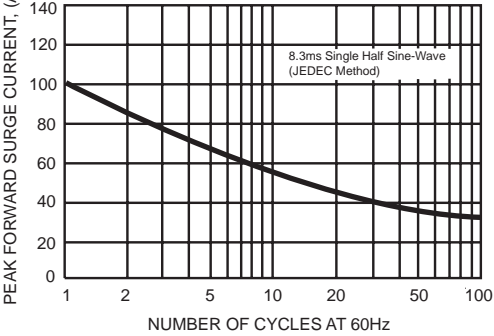


FIG. 3 - TYPICAL FORWARD CURRENT DERATING CURVE

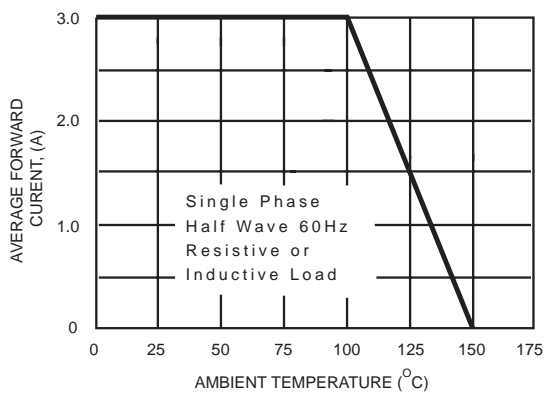


FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

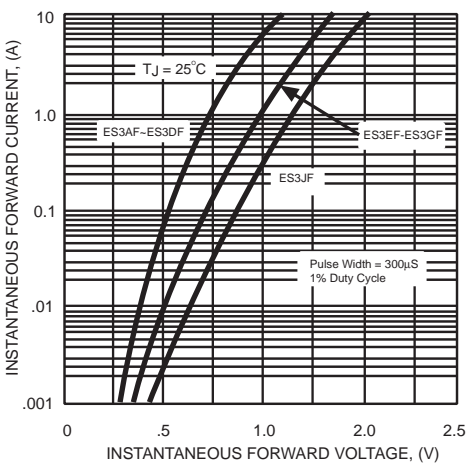


FIG. 5 - TYPICAL REVERSE CHARACTERISTICS

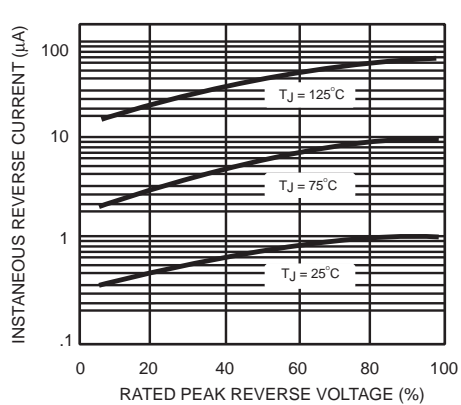
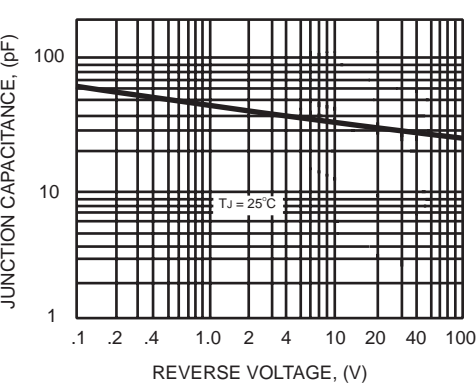


FIG. 6 - TYPICAL JUNCTION CAPACITANCE



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