DC COMPONENTS CO., LTD.

RECTIFIER SPECIALISTS

ES1AF THRU ES1JF

TECHNICAL SPECIFICATIONS OF SUPER FAST RECOVERY RECTIFIER

VOLTAGE RANGE - 50 to 600 Volts *CURRENT - 1.0 Ampere*

FEATURES

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

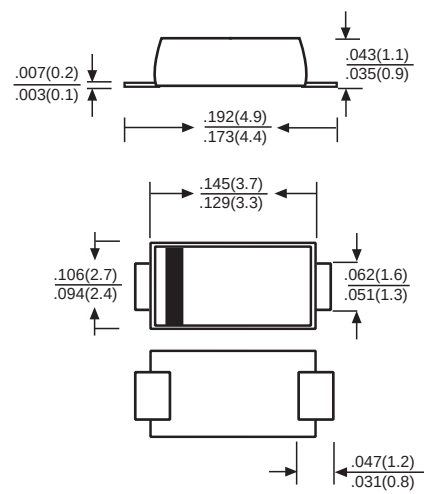
MECHANICAL DATA

* 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	ES1AF	ES1BF	ES1CF	ES1DF	ES1EF	ES1GF	ES1JF	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 = 75°C		I_O	1.0							Amps
Peak Forward Surge Current I_{FM}(surge): 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)		I_{FSM}	30							Amps
Maximum Forward Voltage at 1.0A DC		V_F	0.95				1.25		1.7	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)		trr	35							nSec
Typical Thermal Resistance (Note 2)		$R_{\theta JA}$	115							°C/W
Typical Junction Capacitance (Note 3)		C_J	10							pF
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150							°C

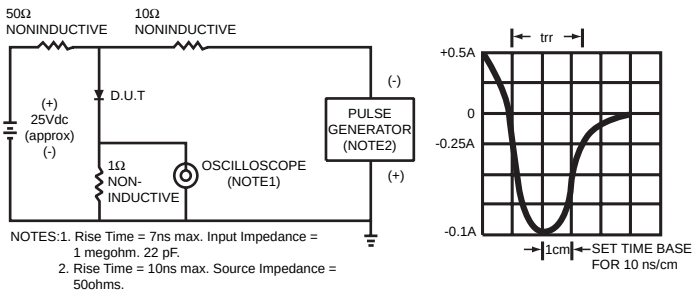
NOTES : 1. Test Conditions: IF=0.5A, IR=1.0A, IRR=0.25A.

2. P.C.B. mounted with 0.2x0.2 in^2 (5x5mm^2) copper pads to each terminal.

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

RATING AND CHARACTERISTIC CURVES (ES1AF THRU ES1JF)

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



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

FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

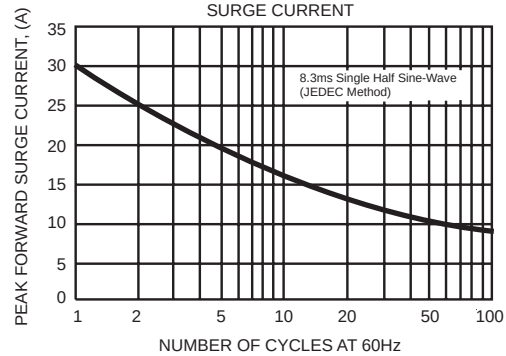


FIG. 3 - TYPICAL FORWARD CURRENT DERATING CURVE

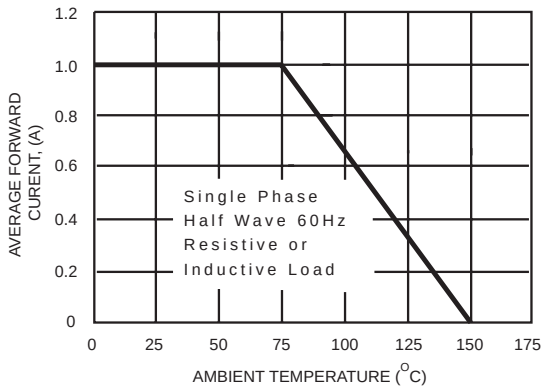


FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

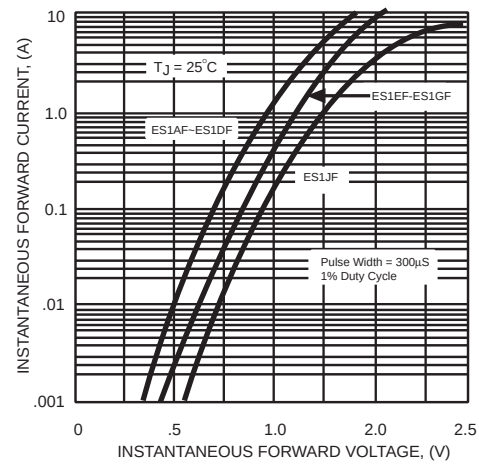


FIG. 5 - TYPICAL REVERSE CHARACTERISTICS

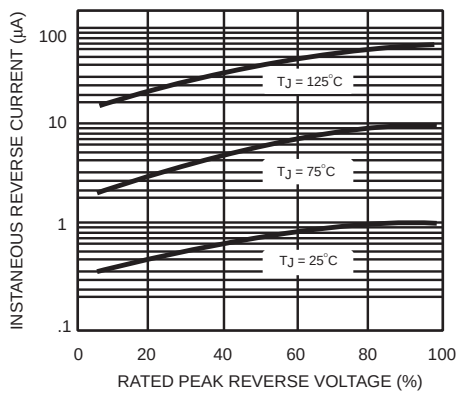
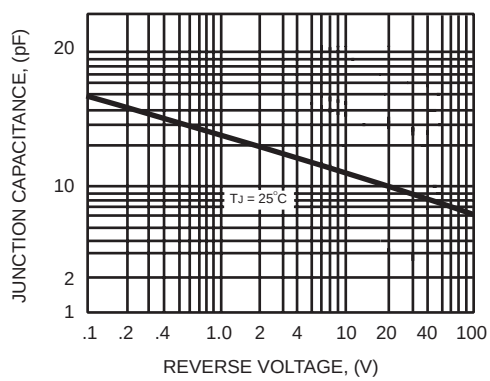


FIG. 6 - TYPICAL JUNCTION CAPACITANCE



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