



ES1AFL THRU ES1JFL

SURFACE MOUNT SUPERFAST RECOVERY RECTIFIER

REVERSE VOLTAGE: 50 to 600 VOLTS

FORWARD CURRENT: 1.0 AMPERE

FEATURES

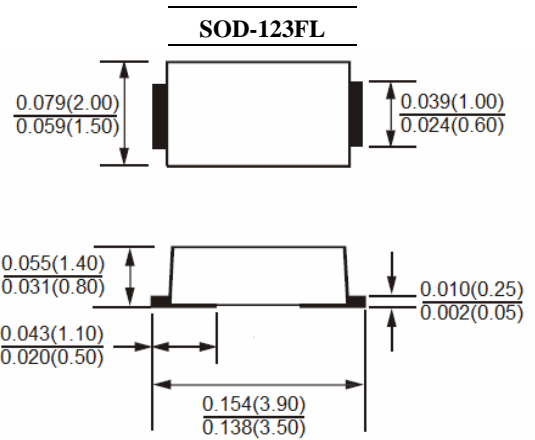
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- For surface mounted applications
- Low profile package
- Easy pick and place
- Built-in strain relief
- Superfast recovery times for high efficiency
- Glass Passivated Die Construction
- Suffix "H" indicates Halogen-free parts, ex. ES1AFLH

MECHANICAL DATA

Case : Molded plastic, SOD-123FL

Terminals : Solder plated, solderable per MIL-STD-750, method 2026 guaranteed

Polarity : Color band denotes cathode end



Dimensions in inches and (millimeters)

Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

Parameter	Symbols	ES1AFL	ES1BFL	ES1CFL	ES1DFL	ES1EFL	ES1GFL	ES1JFL	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 $T_A=50^\circ\text{C}$	$I_{(AV)}$	1.0							Amp
Peak Forward Surge Current, 8.3ms single half-sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	30							Amp
Maximum Forward Voltage at 1.0A	V_F	0.95				1.25		1.70	Volts
Maximum Reverse Current at $T_A=25^\circ\text{C}$ at Rated DC Blocking Voltage $T_A=100^\circ\text{C}$	I_R	5.0				100			uAmp
Typical Junction Capacitance (Note 1)	C_J	16				18			pF
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$	130							°C/W
Maximum Reverse Recovery Time (Note 3)	T_{RR}	35							nS
Operating Junction Temperature Range	T_J	-65 to +150							°C
Storage Temperature Range	T_{stg}	-65 to +150							°C

NOTES:

1- Measured at 1 MHz and applied reverse voltage of 4.0 VDC.

2- Thermal resistance from junction to lead mounted on P.C.B. with 0.3 x 0.3" (8.0 x 8.0mm) copper pad areas

3- Reverse Recovery Test Conditions: $I_F=0.5A$, $I_R=1A$, $I_{RR}=0.25A$.



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RATINGS AND CHARACTERISTIC CURVES

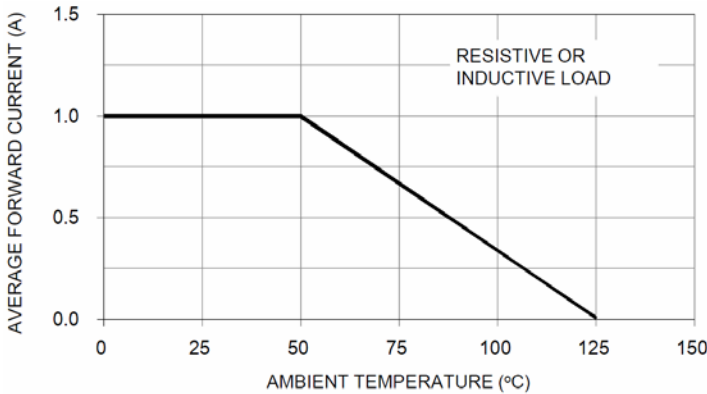


FIG. 1- MAXIMUM AVERAGE FORWARD CURRENT DERATING

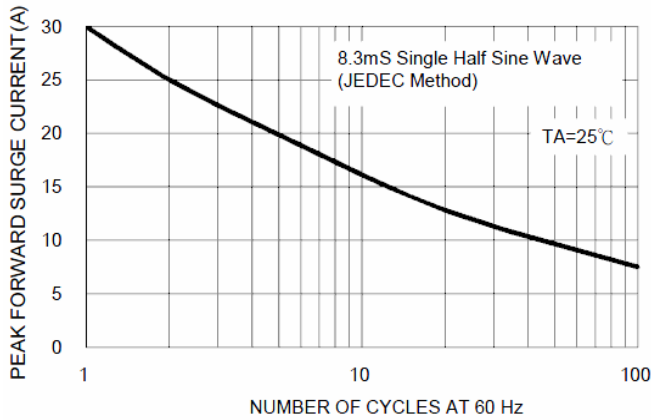


FIG. 3- MAXIMUM NON-REPETITIVE FORWARD PEAK SURGE CURRENT

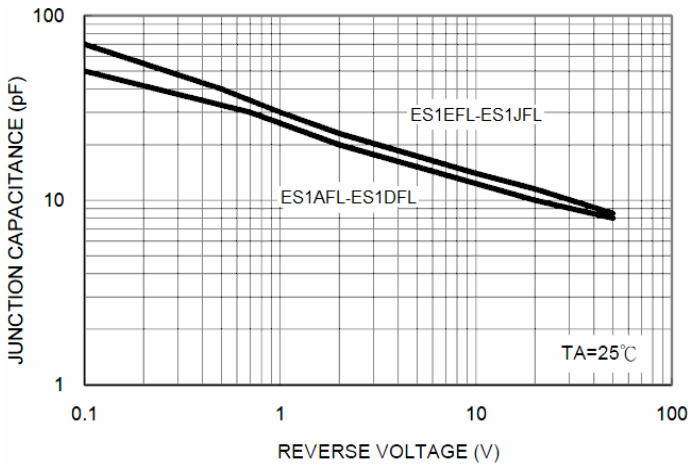


FIG. 4- TYPICAL JUNCTION CAPACITANCE

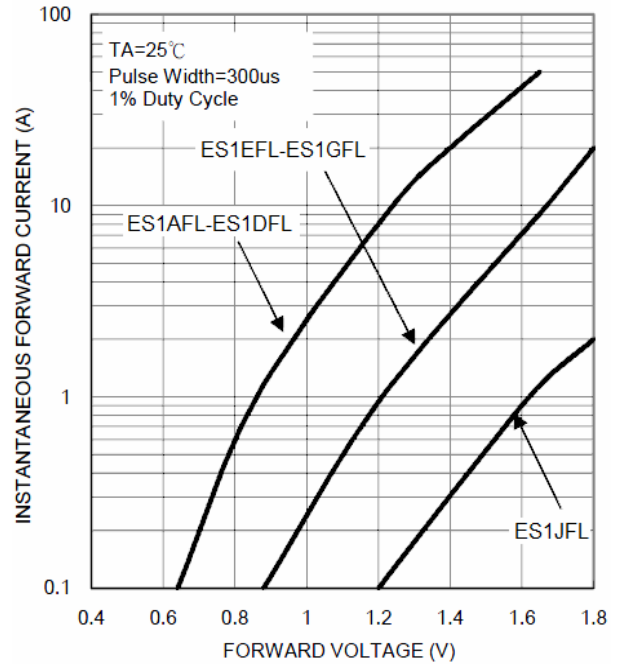


FIG. 2- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

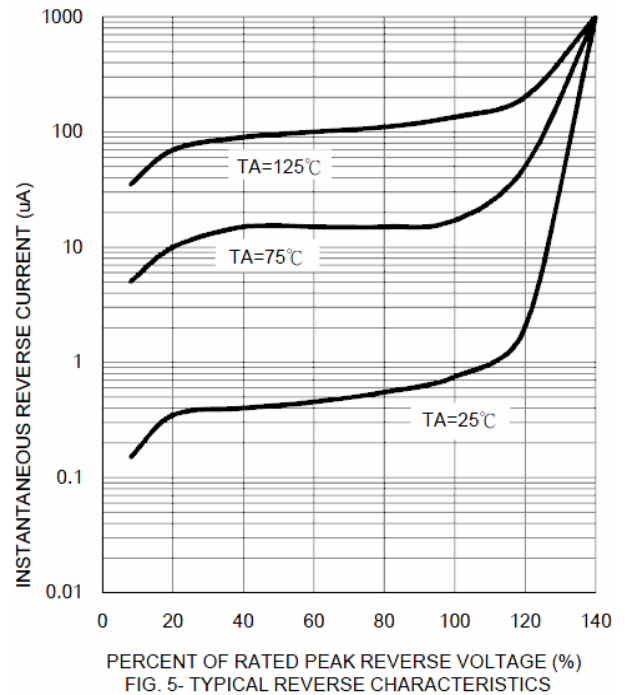


FIG. 5- TYPICAL REVERSE CHARACTERISTICS