SURFACE MOUNT ULTRA FAST RECTIFIER

FEATURES

- For surface mounted applications
- Ultra fast switching for high efficiency
- Low reverse leakage
- Glass passivated chip junction
- Built-in strain relief, ideal for automated placement
- High forward surge current capability
- Plastic material used carries Underwriters Laboratory Classification 94V-0



SOD-123FL



Cathode

MECHANICAL DATA

- Case: SOD-123FL Molded plastic
- Terminals: Pure tin plated, lead free
- Polarity: Indicated by cathode band
- Weight: 11.5 mg (approx.)

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%.

Parameter		Symbol	US2AL	US2BL	US2DL	US2GL	US2JL	US2KL	US2ML	Unit
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS Voltage		V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage		V_{DC}	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current at T_A =75 °C		$I_{F(AV)}$	2.0							A
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC)		I_{FSM}	50.0							A
Maximum Instantaneous Forward Voltage at 2 A		V_F	1.0			1.3	1.68			V
Maximum DC Reverse Current at Rated DC Blocking Voltage	T_A = 25 °C T_A =100 °C	I_R	5.0 50.0							μA
Maximum reverse recovery time (NOTE1)		t_{rr}	50				75			nS
Typical Junction Capacitance (NOTE2)		C_J	15							pF
Maximum Thermal Resistance (NOTE3)		$R_{\Theta jl}$ Rajc	75.0 22.0							°C/W
Operating and Storage Temperature Range		$T_{J, TS}$	- 50 + 150							°C

Note: 1.Reverse recovery condition I_F=0.5A,I_R=1.0A,Irr=0.25A
2.Measured at 1MHz and applied reverse voltage of 4.0V D.C.
3.P.C.B. mounted with 0.2x0.2”(5.0x5.0mm) copper pad areas

Typical Characteristics

FIG. 1- FORWARD CURRENT DERATING CURVE

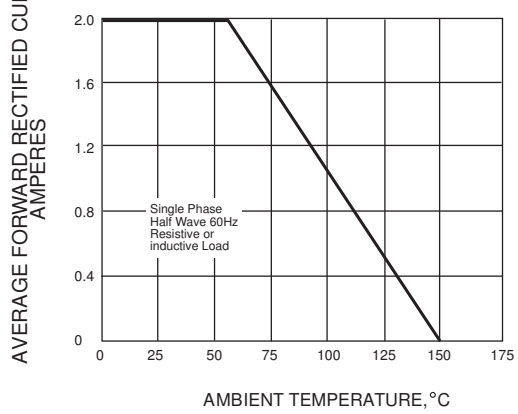


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

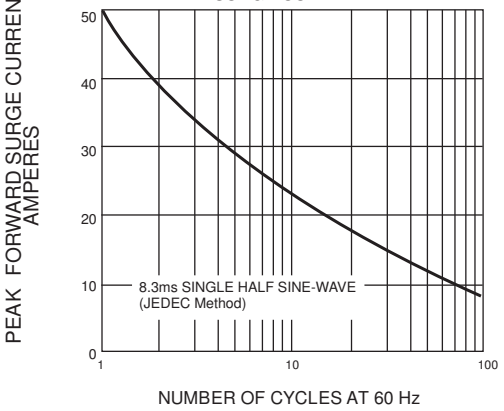


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

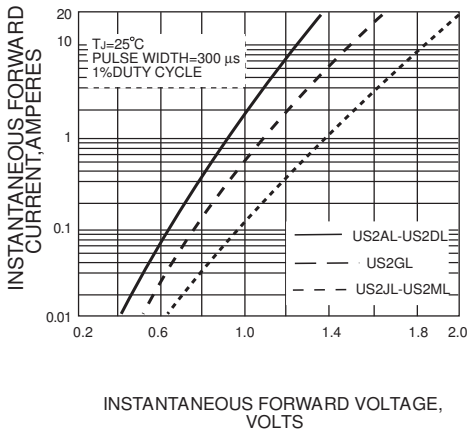


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

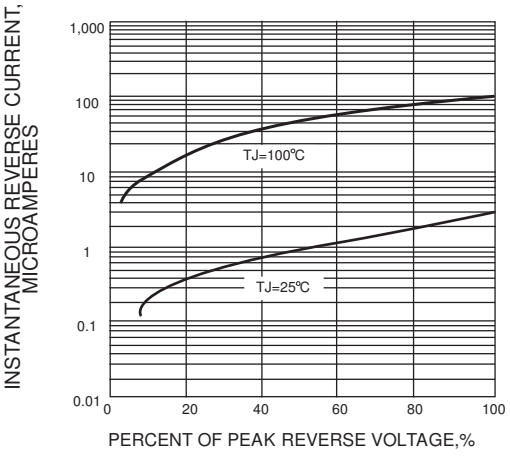


FIG. 5-TYPICAL JUNCTION CAPACITANCE

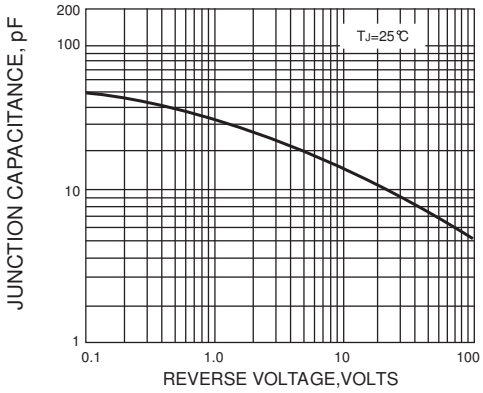
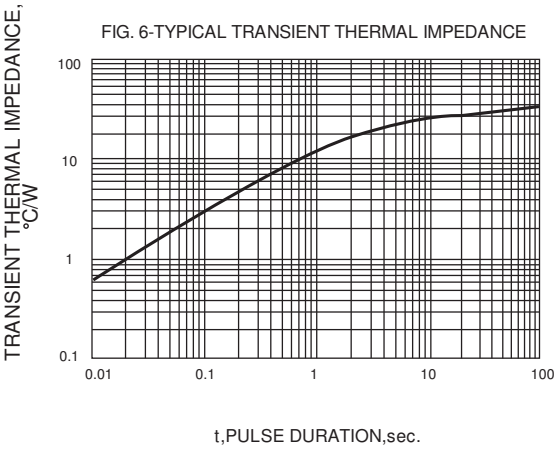
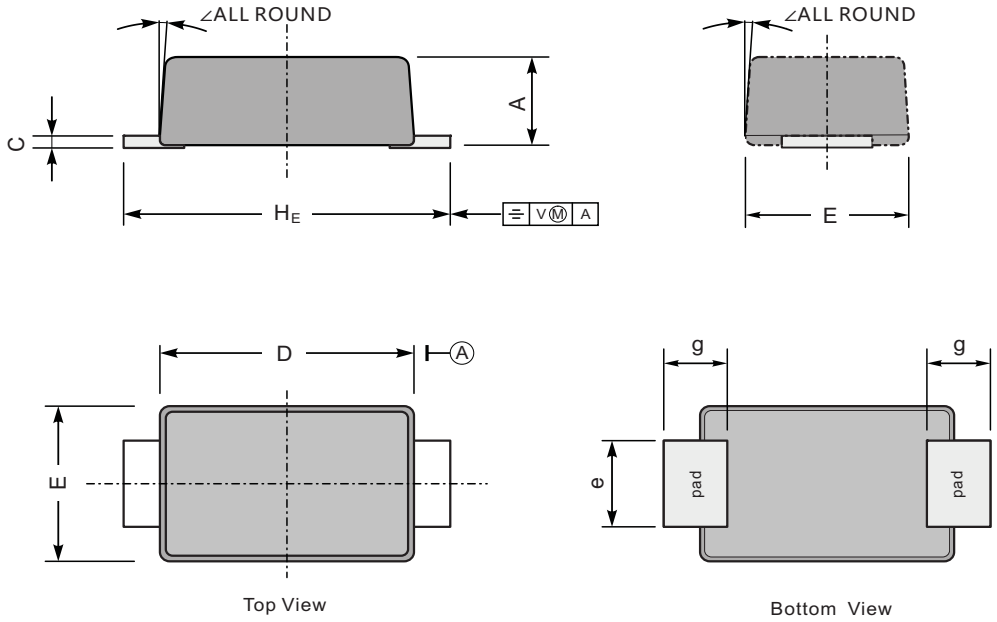


FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



SOD-123FL Package Outline Dimensions



UNIT		A	C	D	E	e	g	H_E	∠
mm	max	1.1	0.20	2.9	1.9	1.1	0.9	3.8	7°
	min	0.9	0.12	2.6	1.7	0.8	0.7	3.5	
mil	max	43	7.9	114	75	43	35	150	
	min	35	4.7	102	67	31	28	138	