YFSEMI

Super Fast Diode
Surface Mount - 1A - E1x

E1x

LF RoHS

Features

- The plastic package carries UL Flammability Classification 94V-0
- For surface mounted applications
- Low reverse leakage
- Built-in strain relief, ideal for automated placement
- High forward surge current capability
- High temperature soldering guaranteed:260℃/10 seconds at terminals

Mechanical Characteristics

- Case: SOD-123FL package molded plastic body over passivated chip
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.0006 ounce, 0.0169 grams

Absolute Maximum Ratings and Electrical Parameters (TA=25°C unless otherwise specified)

PARAMETER		SYMBOL	E1A	E1B	E1C	E1D	E1E	E1G	E1J	UNIT
Maximum repetitive peak reverse voltage		V_{RRM}	50	100	150	200	300	400	600	V
Maximum RMS voltage		V_{RMS}	35	70	105	140	210	280	420	V
Maximum DC blocking voltage		V_{DC}	50	100	150	200	300	400	600	V
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load		I_{AV}	1							A
Peak forward surge current		I_{FSM}	30							A
Maximum instantaneous forward voltage at 1A		V_F	0.95					1.25	1.7	V
Maximum DC reverse current at rated DC blocking voltage	T_A=25 ℃	I_R	5							uA
	T_A=100 ℃	I_{RT}	50							uA
Maximum reverse recovery time (NOTE 1)		t_{rr}	35							ns
Typical junction capacitance (NOTE 2)		C_J	15							pF
Typical Thermal Resistance Junction to Ambient (NOTE3)		$R_{\theta JA}$	90							℃/W
Typical Thermal Resistance Junction to Lead (NOTE3)		$R_{\theta JL}$	30							℃/W
Operating Temperature Range		T_J	-55 to 150							℃
Storage Temperature Range		T_{STG}	-55 to 150							℃

Note1: Reverse recovery condition IF=0.5A,IR=1.0A,Irr=0.25A

Note2: Measured at 1MHz and applied reverse voltage of 4.0V DC.

Note3: PCB. mounted with 3×3mm copper pad areas

Summary of Packing Options

Package	Packing Description	Packing Quantity	Industry Standard
SOD-123FL	Tape/Reel,13" reel	10000	EIA-481-1
	Tape/Reel,7" reel	3000	EIA-481-1

Rating And Characteristic Curves (T_A=25°C unless otherwise noted)

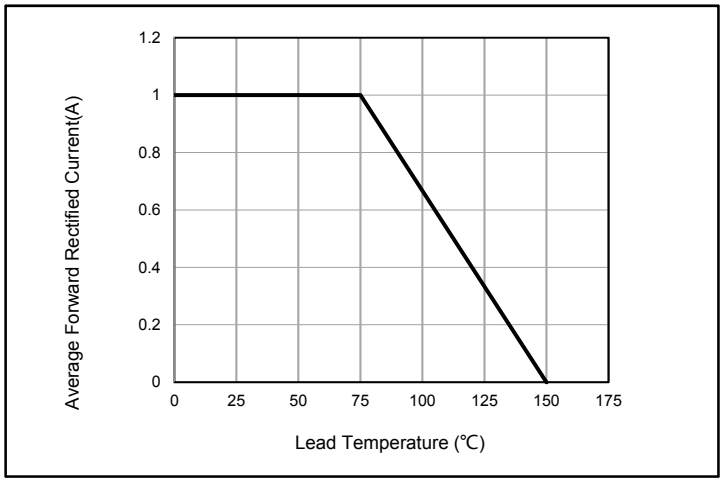


Fig. 1 - Forward Current Derating Curve

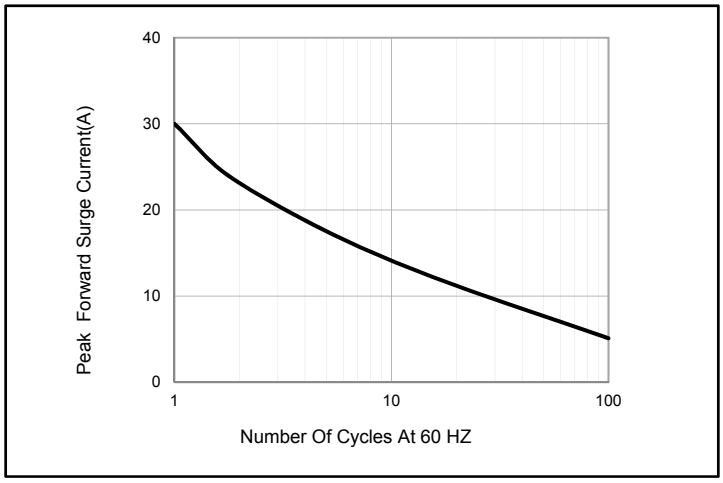


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

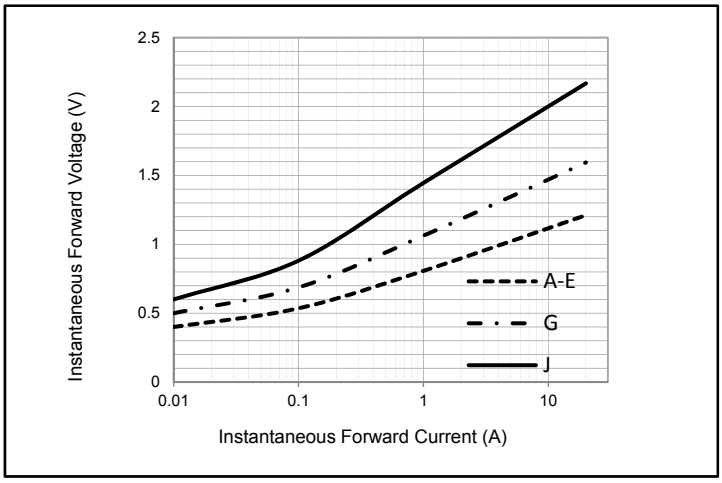


Fig. 3 - Typical Instantaneous Forward Characteristics

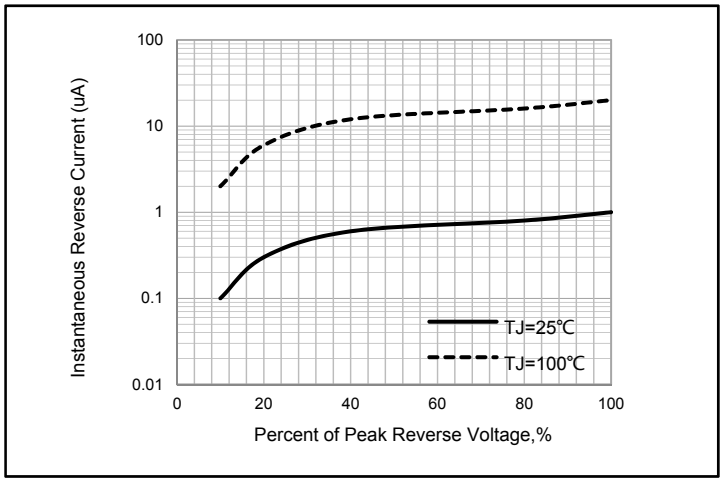


Fig. 4 - Typical Reverse Characteristics

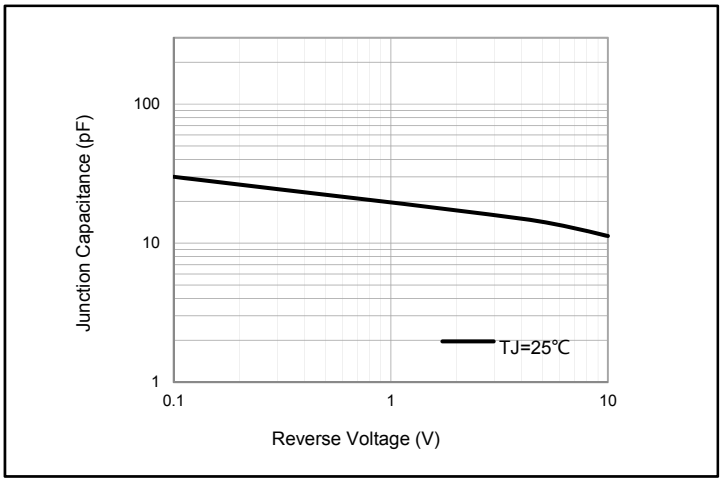


Fig. 5 - Typical Junction Capacitance

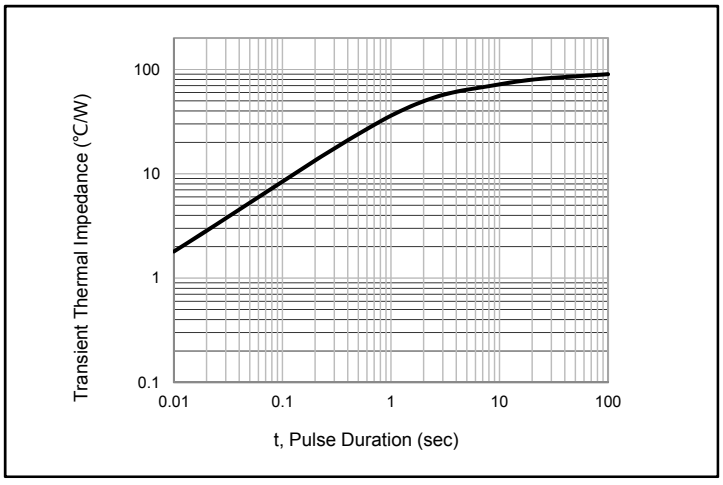
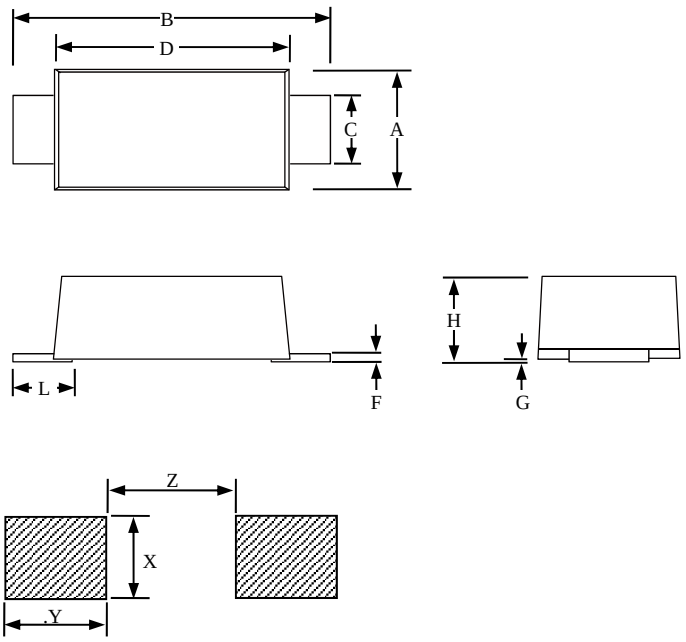


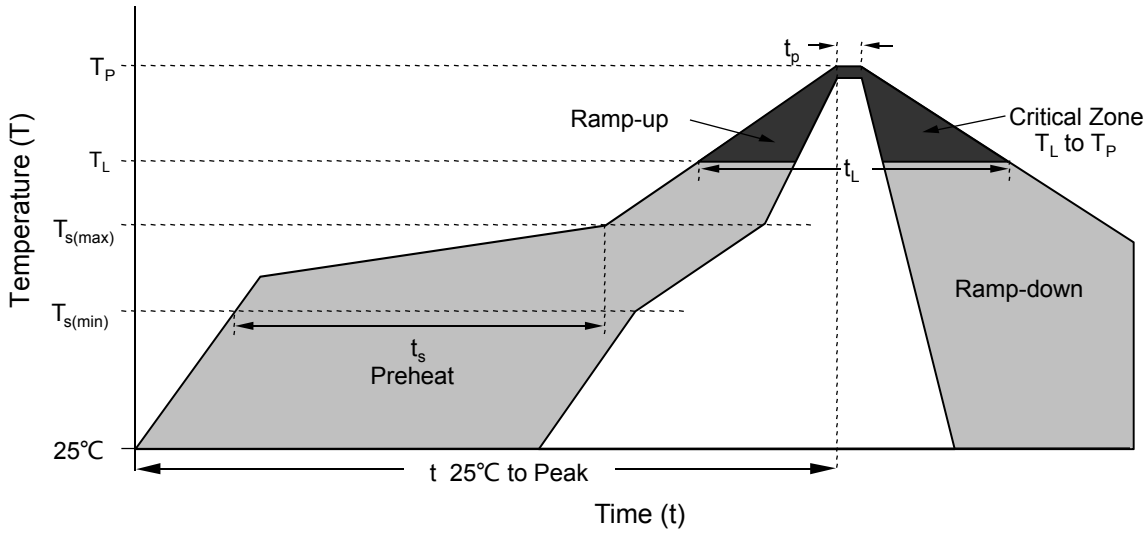
Fig. 6 - Typical Transient Thermal Impedance

Package Dimensions



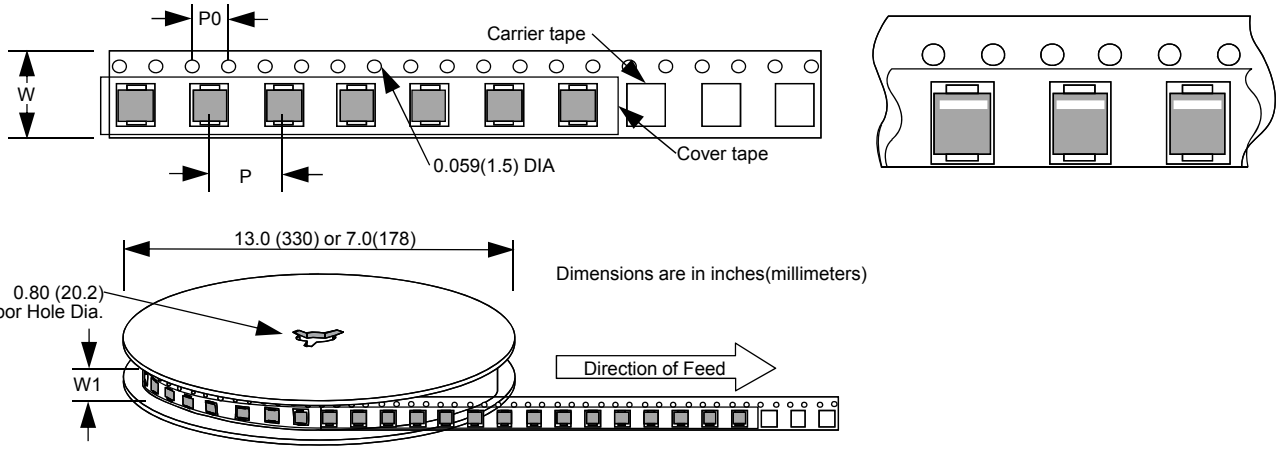
SOD-123FL						
Dimension	Inches			Millimeters		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.059		0.079	1.5		2
B	0.134		0.154	3.4		3.9
C	0.028		0.047	0.7		1.2
D	0.098		0.114	2.5		2.9
L	0.014		0.035	0.35		0.9
F	0.002		0.01	0.05		0.26
G	-		0.004	-		0.1
H	0.037		0.053	0.95		1.35
X		0.055			1.4	
Y		0.051			1.3	
Z		0.063			1.6	

Soldering Parameters



Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(max)}$)	200°C
	- Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{S(max)}$ to TL - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Time (t_L)	60 – 150 secs
Peak Temperature (T_P)		$260^{+0/-5\ °C}$
Time within 5°C of actual peak Temperature (t_p)		20 – 40 secs
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (t)		8 minutes Max.
Do not exceed		260°C

Tape and Reel Specification



Dimension	Inches			Millimeters		
	MIN	NOM	MAX	MIN	NOM	MAX
P		0.157			4	
P0		0.157			4	
W		0.315			8	
W1		0.374			9.5	

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