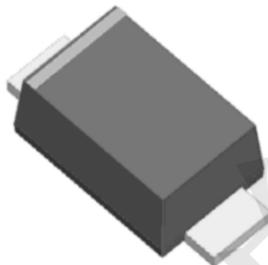


Features

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- Available in Unidirectional and Bidirectional
- 200 W peak pulse power capability with a 10/1000 μ s waveform
- Low incremental surge resistance, excellent clamping capability
- Very fast response time
- High temperature soldering guaranteed: 260 °C/10 s at terminals
- Meets MSL level 1
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



SOD-123FL

Typical Applications

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, telecommunication.

Mechanical Date

- **Package:** SOD-123FL
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** For uni-directional types the band denotes cathode end, no marking on bi-directional types



Uni-directional

Maximum Ratings ($T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Conditions	Max
Peak power dissipation(1) (2) (Fig.1)	P_{PPM}	W	with a 10/1000us waveform	200
Peak pulse current(1)	I_{PPM}	A	with a 10/1000us waveform	(See Next Table)
Power dissipation, on infinite heat sink	P_D	W	$T_L=75^\circ\text{C}$	0.4
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only (3)	I_{FSM}	A		20
Operating junction and storage temperature range	T_J, T_{STG}	$^\circ\text{C}$		-55 to +150
Thermal resistance	$R_{\theta JL}$	$^\circ\text{C/W}$	Between junction and lead	26
	$R_{\theta JA}$		Between junction and Ambient	300
	$R_{\theta JC}$		Between junction and Curve	40

Notes:

- (1). Non-repetitive current pulse at $T_A=25^\circ\text{C}$, per waveform of Figure 2.
- (2). $T_L=30^\circ\text{C}$ unless otherwise noted, $V_F \leq 1.25\text{V}@200\text{mA}$.
- (3). Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

Electrical Characteristics (TA=25°C unless otherwise noted)

Part Number	Breakdown Voltage $V_{BR}@I_T$			Maximum Reverse Leakage $I_R^{(3)}$ @ V_{RWM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current $I_{PP}^{(2)}$ (A)	Maximum Clamping Voltage V_C @ I_{PP} (V)
	Min(V)	Max (V)	$I_T^{(1)}$ (mA)				
(Uni)							
SMF180A	200.00	220.00	1	1.0	180.0	0.68	292.0

Characteristics(Typical)

FIG1: Peak Pulse Power Rating Curve

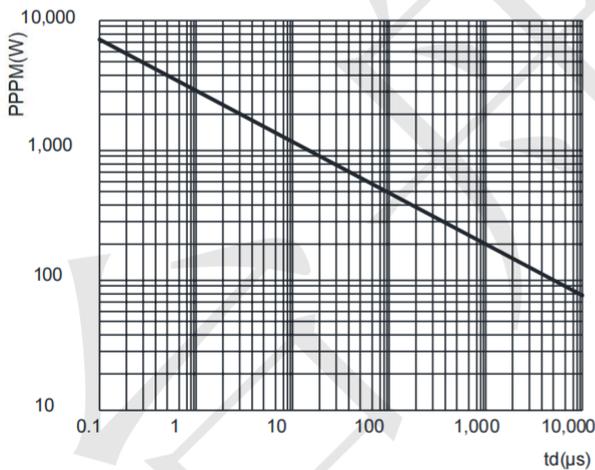


FIG2: Pulse Waveform

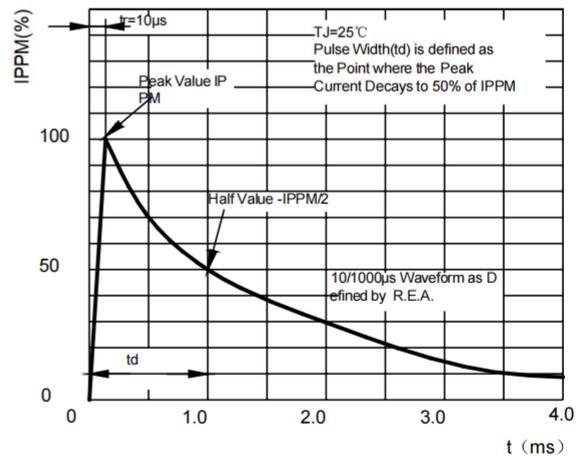


FIG3: Pulse Power or Current vs. Initial Junction Temperature

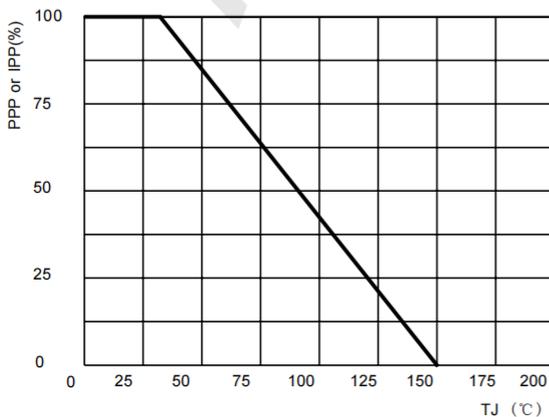
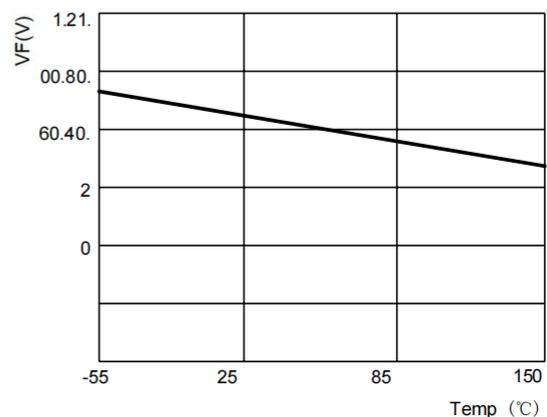
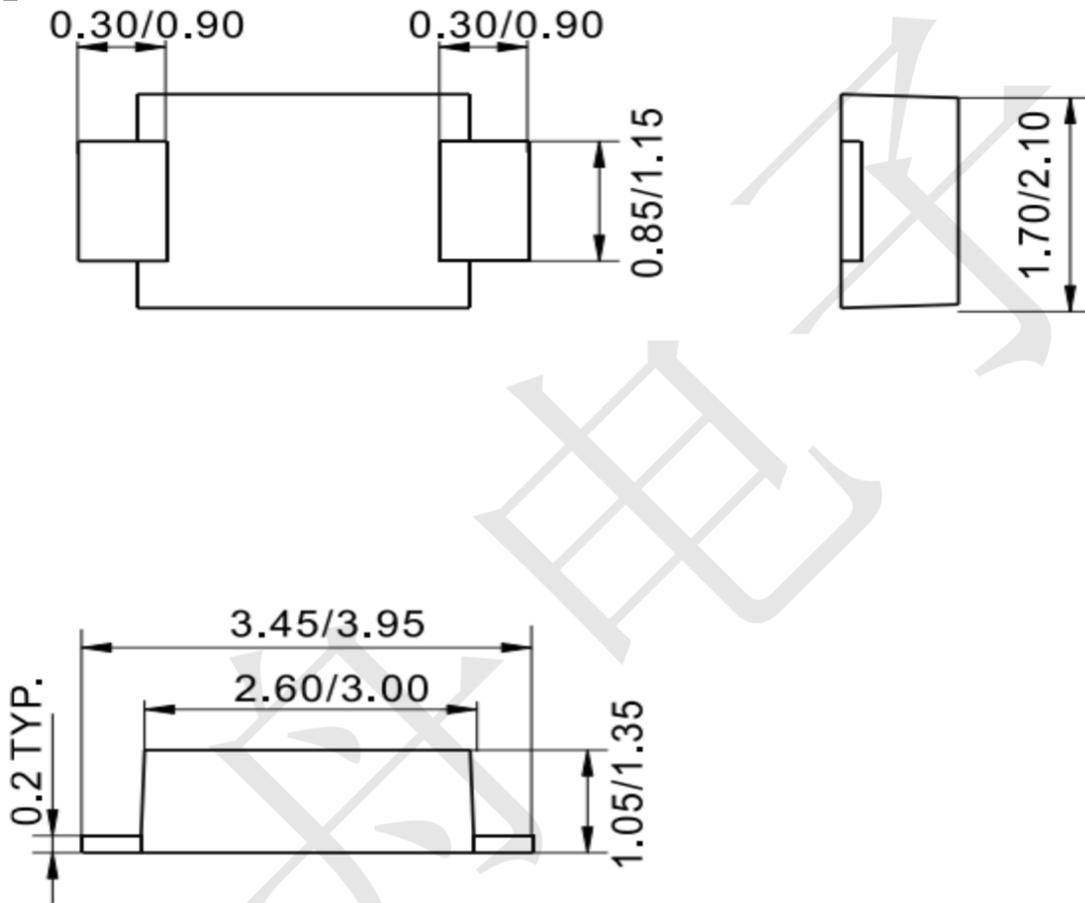


FIG4: Forward Voltage Curve



Package information (Unit: mm)

SOD-123FL



Mounting Pad Layout (Unit: mm)

