

1. Features

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

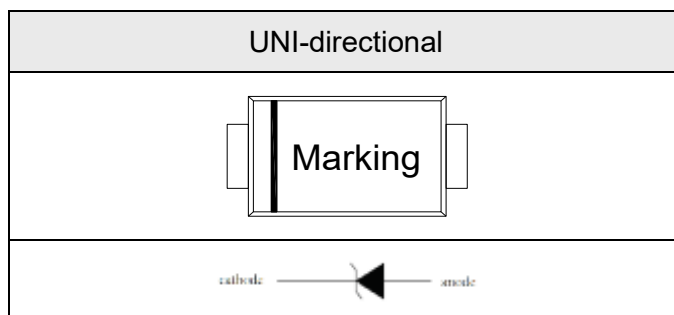
2. Application

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.

3. Mechanical Data

- 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

4. Marking Information



5. Maximum Ratings

Ratings at 25° ambient temperature unless otherwise specified

Rating		Symbol	Value	Units
Peak pulse power dissipation at 10/1000us waveform ⁽¹⁾		P _{PPM}	200	W
Peak pulse current of at 10/1000us waveform ⁽¹⁾		I _{PPM}	See Table	A
Steady state power dissipation at TA=75°C		P _D	0.4	W
Peak forward surge current, 8.3ms single half sine wave unidirectional only		I _{FSM}	20	A
Thermal resistance	Between junction and lead	R _{θJL}	26	°C/W
	Between junction and Ambient	R _{θJA}	300	
	Between junction and Curve	R _{θJC}	40	
Storage & operating temperature range		T _{STG} , T _J	-55 to 150	°C
ESD (IEC61000-4-2 air discharge)		V _{ESD}	±30	kV
ESD (IEC61000-4-2 contact discharge)		V _{ESD}	±30	kV

6. Electrical Characteristics (TA=25°C)

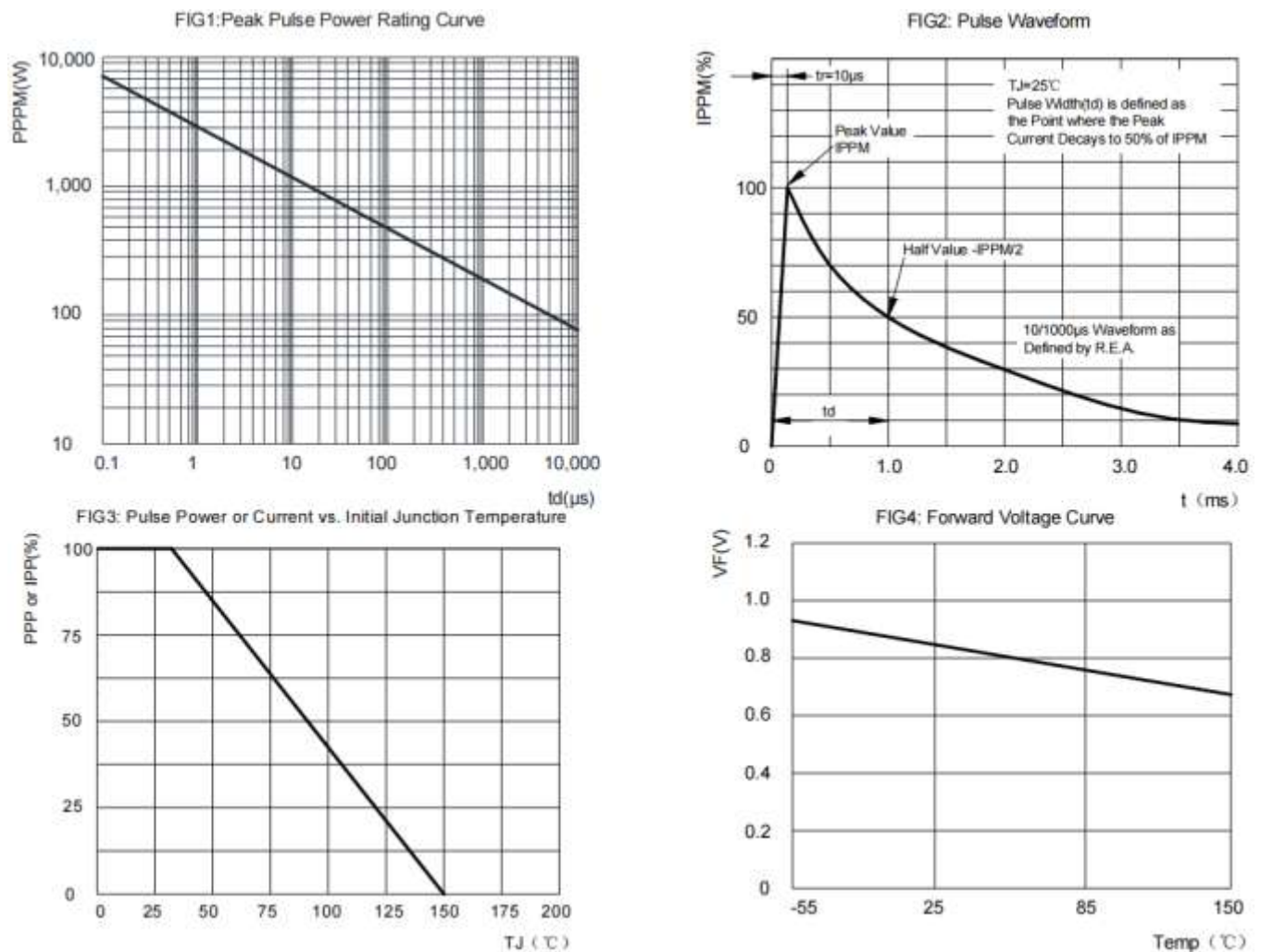
Part Number	Marking	Reverse Stand off Voltage VR (Volts)	Breakdown Voltage VBR (Volts) @ IT		Test Current IT (mA)	Maximum Clamping Voltage VC @ Ipp (V)	Maximum Peak Pulse Current Ipp (A)	Maximum Reverse Leakage IR @ VR (μA)
			MIN	MAX				
SMF5V0A-E3-08(ES)	AE	5	6.4	7	10	9.2	21.7	400
SMF6V0A-E3-08(ES)	AG	6	6.67	7.37	10	10.3	19.4	400
SMF6V5A-E3-08(ES)	AK	6.5	7.22	7.98	10	11.2	17.9	250
SMF7V0A-E3-08(ES)	AM	7	7.78	8.6	10	12	16.7	100
SMF7V5A-E3-08(ES)	AP	7.5	8.33	9.21	1	12.9	15.5	50
SMF8V0A-E3-08(ES)	AR	8	8.89	9.83	1	13.6	14.7	25
SMF8V5A-E3-08(ES)	AT	8.5	9.44	10.4	1	14.4	13.9	10
SMF9V0A-E3-08(ES)	AV	9	10	11.1	1	15.4	13	5
SMF10A-E3-08(ES)	AX	10	11.1	12.3	1	17	11.8	2.5
SMF11A-E3-08(ES)	AZ	11	12.2	13.5	1	18.2	11	2.5
SMF12A-E3-08(ES)	BE	12	13.3	14.7	1	19.9	10.1	2.5
SMF13A-E3-08(ES)	BG	13	14.4	15.9	1	21.5	9.3	1
SMF14A-E3-08(ES)	BK	14	15.6	17.2	1	23.2	8.6	1
SMF15A-E3-08(ES)	BM	15	16.7	18.5	1	24.4	8.2	1
SMF16A-E3-08(ES)	BP	16	17.8	19.7	1	26	7.7	1
SMF17A-E3-08(ES)	BR	17	18.9	20.9	1	27.6	7.2	1
SMF18A-E3-08(ES)	BT	18	20	22.1	1	29.2	6.8	1
SMF20A-E3-08(ES)	BV	20	22.2	24.5	1	32.4	6.2	1
SMF22A-E3-08(ES)	BX	22	24.4	26.9	1	35.5	5.6	1

Part Number	Marking	Reverse Stand off Voltage VR (Volts)	Breakdown Voltage VBR (Volts) @ IT		Test Current IT (mA)	Maximum Clamping Voltage VC @ Ipp (V)	Maximum Peak Pulse Current Ipp (A)	Maximum Reverse Leakage IR @ VR (μA)
			MIN	MAX				
SMF24A-E3-08(ES)	BZ	24	26.7	29.5	1	38.9	5.1	1
SMF26A-E3-08(ES)	CE	26	28.9	31.9	1	42.1	4.8	1
SMF28A-E3-08(ES)	CG	28	31.1	34.4	1	45.4	4.4	1
SMF30A-E3-08(ES)	CK	30	33.3	36.8	1	48.4	4.1	1
SMF33A-E3-08(ES)	CM	33	36.7	40.6	1	53.3	3.8	1
SMF36A-E3-08(ES)	CP	36	40	44.2	1	58.1	3.4	1
SMF40A-E3-08(ES)	CR	40	44.4	49.1	1	64.5	3.1	1
SMF43A-E3-08(ES)	CT	43	47.8	52.8	1	69.4	2.9	1
SMF45A-E3-08(ES)	CV	45	50	55.3	1	72.7	2.8	1
SMF48A-E3-08(ES)	CX	48	53.3	58.9	1	77.4	2.6	1
SMF51A-E3-08(ES)	CZ	51	56.7	62.7	1	82.4	2.4	1
SMF54A-E3-08(ES)	RE	54	60	66.3	1	87.1	2.3	1
SMF58A-E3-08(ES)	RG	58	64.4	71.2	1	93.6	2.1	1
SMF60A-E3-08(ES)	RK	60	66.7	73.7	1	96.8	1.8	1
SMF64A-E3-08(ES)	RM	64	71.1	78.6	1	103	1.7	1
SMF70A-E3-08(ES)	RP	70	77.8	86	1	113	1.5	1
SMF75A-E3-08(ES)	RR	75	83.3	92.1	1	121	1.4	1
SMF78A-E3-08(ES)	RT	78	86.7	95.8	1	126	1.4	1
SMF85A-E3-08(ES)	RV	85	94.4	104	1	137	1.3	1
SMF90A-E3-08(ES)	RX	90	100	111	1	146	1.2	1

Notes:

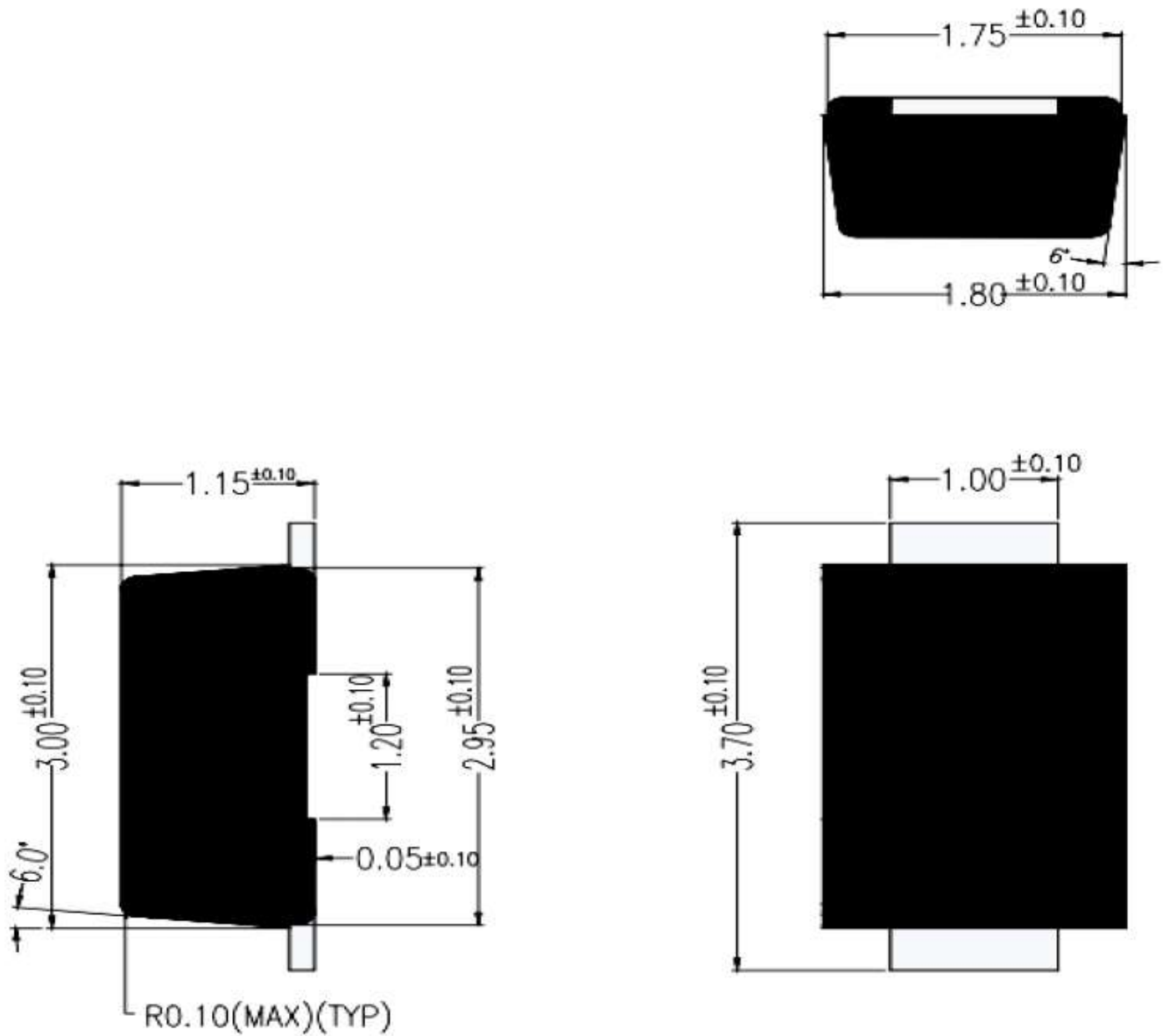
- (1) Non repetitive current pulse, per Fig2 and derated above TA=25C per Fig3.
- (2) TL=30°C unless otherwise noted, VF≤1.25V@200mA
- (3) Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4 pulses per minute maximum
- (4) tp≤50ms Pulse test: tp≤50ms.
- (5) Surge current waveform per Fig. 2 and derated per Fig.3.
- (6) For bi-directional types having VRWM of 10 V and less, the IR limit is doubled.

7. Ratings and Characteristic Curves (TA =25°C unless otherwise noted)



8. Dimension (SOD-123F)

Unit : inch(mm)



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