



SURFACE MOUNT ESD PROTECTION DIODES

SMF5V0A--SMF170A

FEATURES

- For surface mounted applications
- Low profile package
- Low incremental surge resistance, excellent clamping capability
- 200W peak pulse power capability with a
- 10/1000 μ s wave from, repetition rate (duty cycle):0.01%
- High temperature soldering guaranteed: 260°C/10 seconds, at terminals



Lead-free



MECHANICAL DATA

- Case: JEDEC SOD-123FL,molded plastic
- Polarity: Color band denotes positive end (cathode) except for bidirectional
- Marking code: see TABLE 1
- Weight:0.006 ounces, 0.02 gram
- Mounting position: Any

ABSOLUTE MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified

	SYMBOL	VALUE	UNITS
Non-repetitive peak pulse power dissipation with a 10/1000 μ s waveform (NOTE 1)	P_{PPM}	200	W
Peak pulse current 10/1000 μ s wave from (NOTE 1)	I_{PPM}	See Table1	A
Forward voltage @ $I_F=12A$	V_F	3.5	V
Thermal resistance junction to ambient	$R_{\theta JA}$	180	K/W
Operating temperature junction range	T_J	- 55--- +150	°C
Storage temperature range	T_{STG}	- 55--- +150	°C

NOTE:(1)Non-repetitive current pulse and derated above $T_A=25^\circ\text{C}$

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ELECTRICAL CHARACTERISTICS

(Ratings at $T_J=25^{\circ}\text{C}$ unless otherwise specified) uni-birectional only

Type	Marking Code UNI	$V_{(BR)}^{1)}$ V MIN	I_T mA	V_{WM} V	$I_{RM}@V_{WM}$ μA	$I_{PPM}^{2)}$ A	$V_C @ I_{PPM}$ V
SMF5V0A	AE	6.40	10	5.0	400	21.7	9.2
SMF6V0A	AG	6.67	10	6.0	400	19.4	10.3
SMF6V5A	AK	7.22	10	6.5	250	17.9	11.2
SMF7V0A	AM	7.78	10	7.0	100	16.7	12.0
SMF7V5A	AP	8.33	1.0	7.5	50	15.5	12.9
SMF8V0A	AR	8.89	1.0	8.0	25	14.7	13.6
SMF8V5A	AT	9.44	1.0	8.5	10	13.9	14.4
SMF9V0A	AV	10.0	1.0	9.0	5.0	13.5	15.4
SMF10A	AX	11.1	1.0	10	2.5	11.8	17.0
SMF11A	AZ	12.2	1.0	11	2.5	11.0	18.2
SMF12A	BE	13.3	1.0	12	2.5	10.1	19.9
SMF13A	BG	14.4	1.0	13	1.0	9.3	21.5
SMF14A	BK	15.6	1.0	14	1.0	8.6	23.2
SMF15A	BM	16.7	1.0	15	1.0	8.2	24.4
SMF16A	BP	17.8	1.0	16	1.0	7.7	26.0
SMF17A	BR	18.9	1.0	17	1.0	7.2	27.6
SMF18A	BT	20.0	1.0	18	1.0	5.8	29.2
SMF20A	BV	22.2	1.0	20	1.0	6.2	32.4
SMF22A	BX	24.4	1.0	22	1.0	5.6	35.5
SMF24A	BZ	26.7	1.0	24	1.0	5.1	38.9
SMF26A	CE	28.9	1.0	26	1.0	4.8	42.1
SMF28A	CG	31.1	1.0	28	1.0	4.4	45.4
SMF30A	CK	33.3	1.0	30	1.0	4.1	48.4
SMF33A	CM	36.7	1.0	33	1.0	3.8	53.3
SMF36A	CP	40.0	1.0	36	1.0	3.4	58.1
SMF40A	CR	44.4	1.0	40	1.0	3.1	64.5
SMF43A	CT	47.8	1.0	43	1.0	2.9	69.4
SMF45A	CV	50.0	1.0	45	1.0	2.8	72.7
SMF48A	CX	53.3	1.0	48	1.0	2.6	77.4



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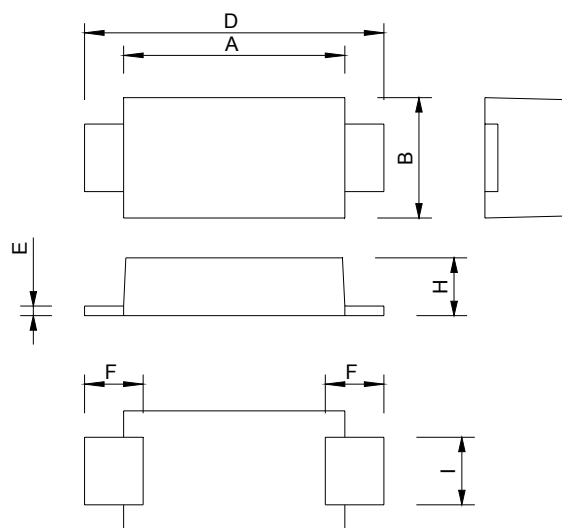
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Type	Marking Code UNI	$V_{(BR)}^{1)}$ MIN V	I_T m A	V_{WM} V	$I_{RM}@V_{WM}$ μ A	$I_{PPM}^{2)}$ A	$V_C @ I_{PPM}$ V
SMF51A	CZ	56.7	1.0	51	1.0	2.4	82.4
SMF54A	DE	60.0	1.0	54	1.0	2.3	87.1
SMF58A	DG	64.0	1.0	58	1.0	2.1	93.6
SMF60A	DK	66.7	1.0	60	1.0	1.8	96.8
SMF64A	DM	71.1	1.0	64	1.0	1.7	103.0
SMF70A	DP	78.8	1.0	70	1.0	1.5	113.0
SMF75A	DR	83.3	1.0	75	1.0	1.4	121.0
SMF78A	DT	86.7	1.0	78	1.0	1.4	126.0
SMF85A	DV	94.4	1.0	85	1.0	1.3	137.0
SMF90A	DX	100.0	1.0	90	1.0	1.2	146.0
SMF100A	DZ	111.0	1.0	100	1.0	1.1	162.0
SMF110A	EE	122.0	1.0	110	1.0	1.0	177.0
SMF120A	EG	133.0	1.0	120	1.0	0.9	193.0
SMF130A	EK	144.0	1.0	130	1.0	0.8	209.0
SMF150A	EM	167.0	1.0	150	1.0	0.7	243.0
SMF160A	EP	178.0	1.0	160	1.0	0.7	259.0
SMF170A	ER	189.0	1.0	170	1.0	1.2	275.0

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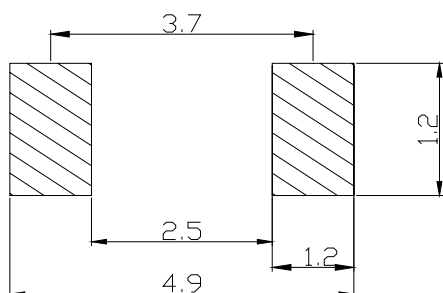
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PACKAGE OUTLINE DIMENSIONS



SOD-123FL		
Dim	Min	Max
A	2.50	3.10
B	1.50	2.10
D	3.45	3.95
E	0.10	0.30
F	0.30	0.90
H	0.90	1.35
I	0.60	1.15
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit : mm

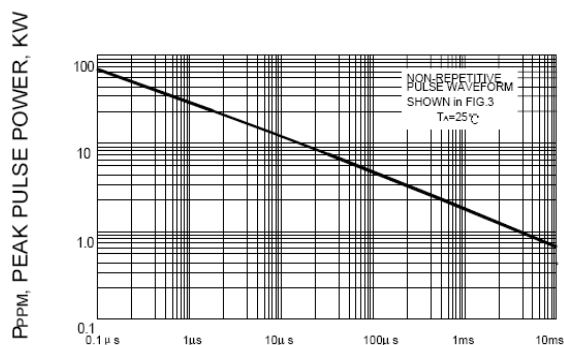
PACKAGE INFORMATION

Device	Package	Shipping
SMF5V0A--SMF170A	SOD-123FL	10000/Tape&Reel

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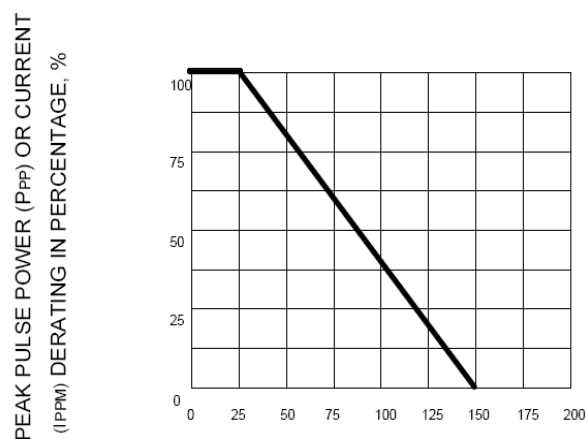
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FIG.1 -- PEAK PULSE POWER RATING CURVE



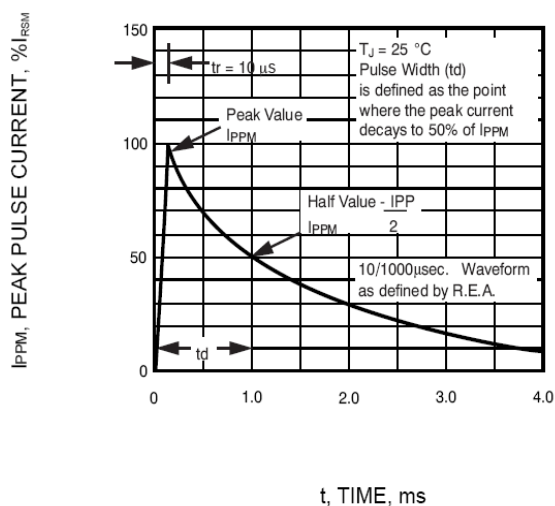
td, PULSE WIDTH, SEC

FIG.2 -- PULSE DERATING CURVE



TA, AMBIENT TEMPERATURE.°C

FIG.3 -- PULSE WAVEFORM



t, TIME, ms