

### Features

- AEC-Q101 Qualified
- For Surface Mount Applications
- Excellent Clamping Capability
- High Temp Soldering: 260°C / 10 Seconds At Terminals
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note2) ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- ESD protection of data lines in accordance with IEC 61000-4-2, 30kV(Air), 30kV (Contact)

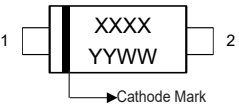
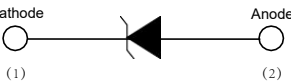


### Maximum Ratings

Parameter	Symbol	Value	Unit
Peak Pulse Power Surge Current with a 10/1000µs Waveform (Note 3)	$I_{PPM}$	See Next Table	A
Peak Pulse Power Dissipation (Note 3)	$P_{PPM}$	400	W
Power Dissipation on Infinite Heatsink at $T_A = 25^\circ\text{C}$	$P_D$	1	W
Peak Forward Surge Current Unidirectional Only (Note 4)	$I_{FSM}$	30	A

**Note:**

1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.
3. Non-repetitive current pulse, per Fig.3 and derated above  $T_A = 25^\circ\text{C}$  per Fig.4.
4. 8.3ms, single half sine wave duty cycle = 4 pulses per Minutes maximum.

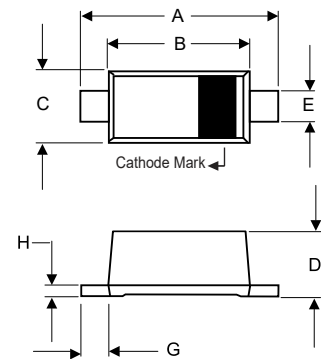
### Internal Structure

Description	Simplified outline	Graphic symbol
Uni-directional		
Bi-directional		

XXXX = Marking code YYWW = Date Code

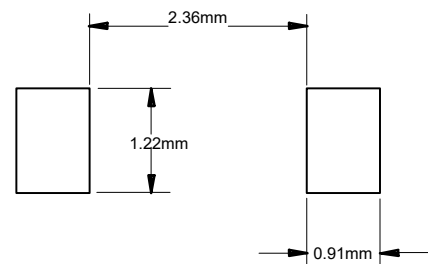
**400Watt TVS**  
**6.0 to 100**  
**Volts**

### SOD-123FL



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.130	0.152	3.30	3.85	
B	0.100	0.122	2.55	3.10	
C	0.055	0.075	1.40	1.90	
D	0.035	0.053	0.90	1.35	
E	0.020	0.041	0.50	1.05	
G	0.010	----	0.25	----	
H	----	0.010	----	0.25	

### SUGGESTED SOLDER PAD LAYOUT



## Thermal Characteristics

Parameter	Symbol	Value	Unit
Operating Junction Temperature Range	$T_J$	-55 to +150	°C
Storage Temperature Range	$T_{STG}$	-55 to +150	°C
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	30	°C/W
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	150	°C/W
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	50	°C/W

Note:

1. Mounted on 0.31x0.35"(8.0x9.0mm) copper pads to each terminal.

MCC Part Number		Working Peak Reverse Voltage	Breakdown Voltage VBR @IT			Maximum Clamping Voltage @IPP	Maximum Reverse Surge Current	Maximum Reverse Leakage @VRWM	Device Marking Code	
(Uni)	(Bi)		VRWM(V)	Min (V)	Max (V)				IT (mA)	VC(V)
SM4F6.0AHE3	SM4F6.0CAHE3	6.0	6.67	7.37	10	10.3	38.8	800	F6.0	F6.0C
SM4F6.5AHE3	SM4F6.5CAHE3	6.5	7.22	7.98	10	11.2	35.7	500	F6.5	F6.5C
SM4F7.0AHE3	SM4F7.0CAHE3	7.0	7.78	8.60	10	12.0	33.3	200	F7.0	F7.0C
SM4F7.5AHE3	SM4F7.5CAHE3	7.5	8.33	9.21	1	12.9	31.0	100	F7.5	F7.5C
SM4F8.0AHE3	SM4F8.0CAHE3	8.0	8.89	9.83	1	13.6	29.4	50	F8.0	F8.0C
SM4F8.5AHE3	SM4F8.5CAHE3	8.5	9.44	10.40	1	14.4	27.8	10	F8.5	F8.5C
SM4F9.0AHE3	SM4F9.0CAHE3	9.0	10.00	11.10	1	15.4	26.0	5	F9.0	F9.0C
SM4F10AHE3	SM4F10CAHE3	10.0	11.10	12.30	1	17.0	23.5	2.5	F10	F10C
SM4F11AHE3	SM4F11CAHE3	11.0	12.20	13.50	1	18.2	22.0	2.5	F11	F11C
SM4F12AHE3	SM4F12CAHE3	12.0	13.30	14.70	1	19.9	20.1	2.5	F12	F12C
SM4F13AHE3	SM4F13CAHE3	13.0	14.40	15.90	1	20.0	18.6	1.0	F13	F13C
SM4F14AHE3	SM4F14CAHE3	14.0	15.60	17.20	1	23.2	17.2	1.0	F14	F14C
SM4F15AHE3	SM4F15CAHE3	15.0	16.70	18.50	1	24.4	16.4	1.0	F15	F15C
SM4F16AHE3	SM4F16CAHE3	16.0	17.80	19.70	1	26.0	15.4	1.0	F16	F16C
SM4F17AHE3	SM4F17CAHE3	17.0	18.90	20.90	1	27.6	14.5	1.0	F17	F17C
SM4F18AHE3	SM4F18CAHE3	18.0	20.00	22.10	1	29.2	13.7	1.0	F18	F18C
SM4F19AHE3	SM4F19CAHE3	19.0	21.10	23.30	1	30.6	13.1	1.0	F19	F19C
SM4F20AHE3	SM4F20CAHE3	20.0	22.20	24.50	1	32.4	12.3	1.0	F20	F20C
SM4F22AHE3	SM4F22CAHE3	22.0	24.40	26.90	1	35.5	11.3	1.0	F22	F22C
SM4F24AHE3	SM4F24CAHE3	24.0	26.70	29.50	1	38.9	10.3	1.0	F24	F24C
SM4F26AHE3	SM4F26CAHE3	26.0	28.90	31.90	1	42.1	9.5	1.0	F26	F26C
SM4F28AHE3	SM4F28CAHE3	28.0	31.10	34.40	1	45.4	8.8	1.0	F28	F28C
SM4F30AHE3	SM4F30CAHE3	30.0	33.30	36.80	1	48.4	8.3	1.0	F30	F30C
SM4F33AHE3	SM4F33CAHE3	33.0	36.70	40.60	1	53.3	7.5	1.0	F33	F33C
SM4F36AHE3	SM4F36CAHE3	36.0	40.00	44.20	1	58.1	6.9	1.0	F36	F36C
SM4F40AHE3	SM4F40CAHE3	40.0	44.40	49.10	1	64.5	6.2	1.0	F40	F40C
SM4F43AHE3	SM4F43CAHE3	43.0	47.80	52.80	1	69.4	5.8	1.0	F43	F43C
SM4F45AHE3	SM4F45CAHE3	45.0	50.00	55.30	1	72.7	5.5	1.0	F45	F45C
SM4F48AHE3	-	48.0	53.30	58.90	1	77.4	5.2	1.0	F48	-
SM4F51AHE3	-	51.0	56.70	62.70	1	82.4	4.9	1.0	F51	-
SM4F54AHE3	-	54.0	60.00	66.30	1	87.1	4.6	1.0	F54	-
SM4F58AHE3	-	58.0	64.40	71.20	1	93.6	4.3	1.0	F58	-
SM4F60AHE3	-	60.0	66.70	73.70	1	96.8	4.1	1.0	F60	-
SM4F64AHE3	-	64.0	71.10	78.60	1	103.0	3.9	1.0	F64	-
SM4F70AHE3	-	70.0	77.80	86.00	1	113.0	3.5	1.0	F70	-
SM4F75AHE3	-	75.0	83.30	92.10	1	121.0	3.3	1.0	F75	-
SM4F78AHE3	-	78.0	86.70	95.80	1	126.0	3.2	1.0	F78	-
SM4F80AHE3	-	80.0	88.80	97.60	1	129.0	3.1	1.0	F80	-
SM4F85AHE3	-	85.0	94.40	104.00	1	137.0	2.9	1.0	F85	-
SM4F90AHE3	-	90.0	100.00	111.00	1	146.0	2.7	1.0	F90	-
SM4F100AHE3	-	100.0	111.00	123.00	1	162.0	2.5	1.0	F100	-

**Curve Characteristics**

Fig. 1 - Peak Pulse Power Rating Curve

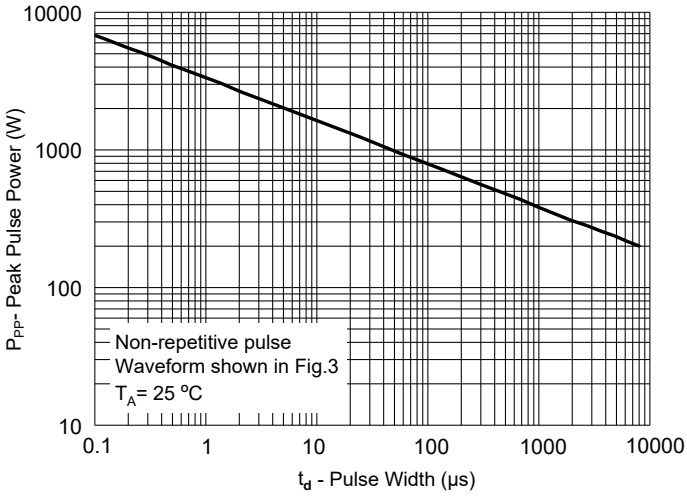


Fig. 2 - Typical Junction Capacitance

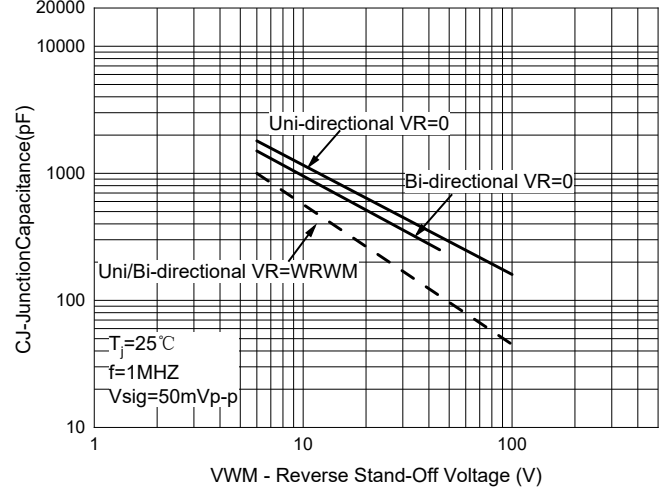


Fig. 3 - Pulse Waveform

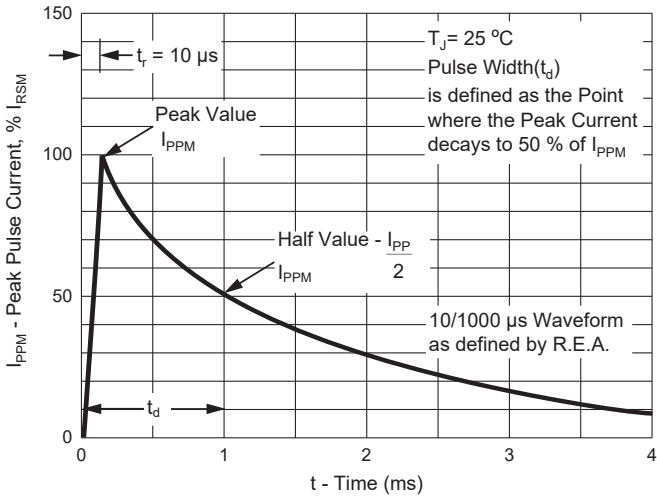
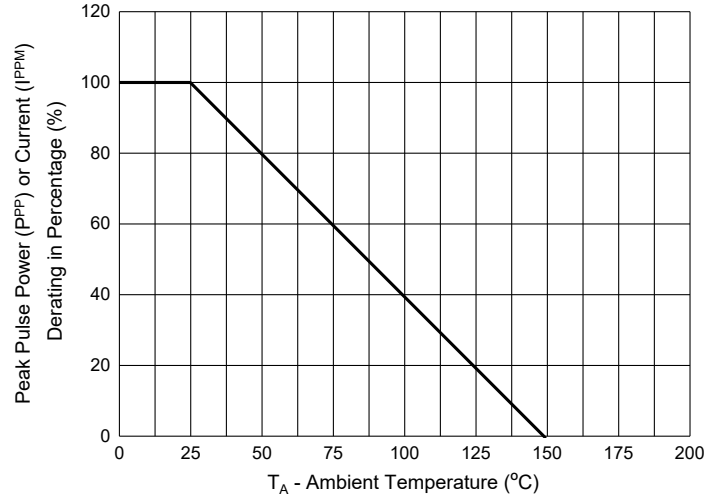


Fig. 4 - Pulse Derating Curve



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:2.5Kpcs/Reel

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