

## Features

- Fully Automotive Qualified to AEC-Q101
- 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 (Note 2) ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- ESD protection of data lines in accordance with IEC 61000-4-2,  $\pm 30\text{kV}$  (Air),  $\pm 30\text{kV}$  (Contact)

## Maximum Ratings

Parameter	Symbol	Value	Unit
Peak Pulse Power Surge Current with a 10/1000 $\mu\text{s}$ Waveform (Note 3)	$I_{PPM}$	See Next Table	A
Peak Pulse Power Dissipation (Note 3)	$P_{PPM}$	600	W
Power Dissipation on Infinite Heatsink at $T_L = 85^\circ\text{C}$	$P_D$	3.0	W
Peak Forward Surge Current Unidirectional Only (Note 4)	$I_{FSM}$	60	A

### Note:

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

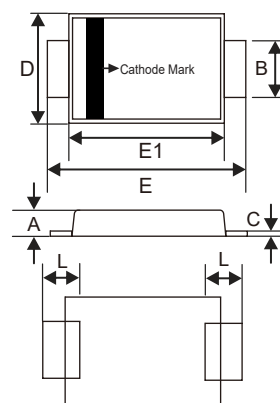
## Internal Structure

Description	Simplified outline	Graphic symbol
Uni-directional		
Bi-directional		

XXXX = Marking code YYWW = Date Code

**600Watt TVS**  
**5.0 to 100**  
**Volts**

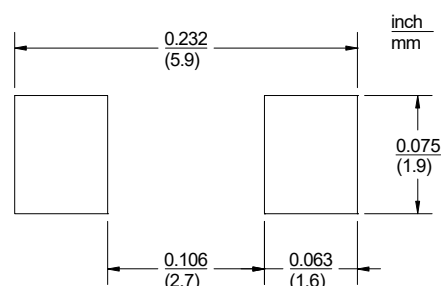
## DO-221AC(SMA-FL)



### DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.035	0.049	0.90	1.25	
B	0.049	0.065	1.25	1.65	
C	0.004	0.016	0.10	0.40	
D	0.089	0.116	2.25	2.95	
E	0.173	0.220	4.40	5.60	
E1	0.126	0.181	3.20	4.60	
L	0.020	0.059	0.50	1.50	

### Suggested Solder Pad Layout



## Thermal Characteristics

Parameter	Symbol	Value	Unit
Operating Junction Temperature Range	$T_J$	-55 to +175	°C
Storage Temperature Range	$T_{STG}$	-55 to +175	°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:**

5. Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal.

# Electrical Characteristics @ 25°C Unless Otherwise Specified

MCC Part Number		Working Peak Reverse Voltage	Breakdown Voltage $V_{BR}$ @ $I_T$			Maximum Clamping Voltage @ $I_{PP}$	Maximum Reverse Surge Current	Maximum Reverse Leakage @ $V_{RWM}$	Device Marking Code	
(Uni)	(Bi)	$V_{RWM}(V)$	Min (V)	Max (V)	$I_T$ (mA)	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$	Uni	Bi
SMA6J5.0AFLQ		5.0	6.40	7.07	10	9.2	65.22	800	5.0A	
SMA6J6.0AFLQ		6.0	6.67	7.37	10	10.3	58.25	800	6.0A	
SMA6J6.5AFLQ		6.5	7.22	7.98	10	11.2	53.57	500	6.5A	
SMA6J7.0AFLQ		7.0	7.78	8.60	10	12.0	50.00	200	7.0A	
SMA6J7.5AFLQ		7.5	8.33	9.21	1	12.9	46.51	100	7.5A	
SMA6J8.0AFLQ		8.0	8.89	9.83	1	13.6	44.12	50	8.0A	
SMA6J8.5AFLQ		8.5	9.44	10.40	1	14.4	41.67	10	8.5A	
SMA6J9.0AFLQ		9.0	10.00	11.10	1	15.4	38.96	5	9.0A	
SMA6J10AFLQ		10.0	11.10	12.30	1	17.0	35.29	5	10A	
SMA6J11AFLQ	SMA6J11CAFLQ	11.0	12.20	13.50	1	18.2	32.97	5	11A	11CA
SMA6J12AFLQ	SMA6J12CAFLQ	12.0	13.30	14.70	1	19.9	30.15	5	12A	12CA
SMA6J13AFLQ	SMA6J13CAFLQ	13.0	14.40	15.90	1	21.5	27.91	1	13A	13CA
SMA6J14AFLQ	SMA6J14CAFLQ	14.0	15.60	17.20	1	23.2	25.86	1	14A	14CA
SMA6J15AFLQ	SMA6J15CAFLQ	15.0	16.70	18.50	1	24.4	24.59	1	15A	15CA
SMA6J16AFLQ	SMA6J16CAFLQ	16.0	17.80	19.70	1	26.0	23.08	1	16A	16CA
SMA6J17AFLQ	SMA6J17CAFLQ	17.0	18.90	20.90	1	27.6	21.74	1	17A	17CA
SMA6J18AFLQ	SMA6J18CAFLQ	18.0	20.00	22.10	1	29.2	20.55	1	18A	18CA
SMA6J19AFLQ	SMA6J19CAFLQ	19.0	21.10	23.30	1	30.8	19.49	1	19A	19CA
SMA6J20AFLQ	SMA6J20CAFLQ	20.0	22.20	24.50	1	32.4	18.52	1	20A	20CA
SMA6J22AFLQ	SMA6J22CAFLQ	22.0	24.40	26.90	1	35.5	16.90	1	22A	22CA
SMA6J24AFLQ	SMA6J24CAFLQ	24.0	26.70	29.50	1	38.9	15.42	1	24A	24CA
SMA6J26AFLQ	SMA6J26CAFLQ	26.0	28.90	31.90	1	42.1	14.25	1	26A	26CA
SMA6J28AFLQ	SMA6J28CAFLQ	28.0	31.10	34.40	1	45.4	13.22	1	28A	28CA
SMA6J30AFLQ	SMA6J30CAFLQ	30.0	33.30	36.80	1	48.4	12.40	1	30A	30CA
SMA6J33AFLQ	SMA6J33CAFLQ	33.0	36.70	40.60	1	53.3	11.26	1	33A	33CA
SMA6J36AFLQ	SMA6J36CAFLQ	36.0	40.00	44.20	1	58.1	10.33	1	36A	36CA
SMA6J40AFLQ	SMA6J40CAFLQ	40.0	44.40	49.10	1	64.5	9.30	1	40A	40CA
SMA6J43AFLQ	SMA6J43CAFLQ	43.0	47.80	52.80	1	69.4	8.65	1	43A	43CA
SMA6J45AFLQ	SMA6J45CAFLQ	45.0	50.00	55.30	1	72.7	8.25	1	45A	45CA
SMA6J48AFLQ	SMA6J48CAFLQ	48.0	53.30	58.90	1	77.4	7.75	1	48A	48CA
SMA6J51AFLQ	SMA6J51CAFLQ	51.0	56.70	62.70	1	82.4	7.28	1	51A	51CA
SMA6J54AFLQ	SMA6J54CAFLQ	54.0	60.00	66.30	1	87.1	6.89	1	54A	54CA
SMA6J58AFLQ	SMA6J58CAFLQ	58.0	64.40	71.20	1	93.6	6.41	1	58A	58CA
SMA6J60AFLQ	SMA6J60CAFLQ	60.0	66.70	73.70	1	96.8	6.20	1	60A	60CA
SMA6J64AFLQ	SMA6J64CAFLQ	64.0	71.10	78.60	1	103.0	5.83	1	64A	64CA
SMA6J70AFLQ	SMA6J70CAFLQ	70.0	77.80	86.00	1	113.0	5.31	1	70A	70CA
SMA6J75AFLQ	SMA6J75CAFLQ	75.0	83.30	92.10	1	121.0	4.96	1	75A	75CA
SMA6J78AFLQ	SMA6J78CAFLQ	78.0	86.70	95.80	1	126.0	4.76	1	78A	78CA
SMA6J80AFLQ	SMA6J80CAFLQ	80.0	88.80	97.60	1	129.6	4.63	1	80A	80CA
SMA6J85AFLQ	SMA6J85CAFLQ	85.0	94.40	104.00	1	137.0	4.38	1	85A	85CA
SMA6J90AFLQ		90.0	100.00	111.00	1	146.0	4.11	1	90A	
SMA6J100AFLQ		100.0	111.00	123.00	1	162.0	3.70	1	100A	

## Curve Characteristics

Fig. 1 - Peak Pulse Power Rating Curve

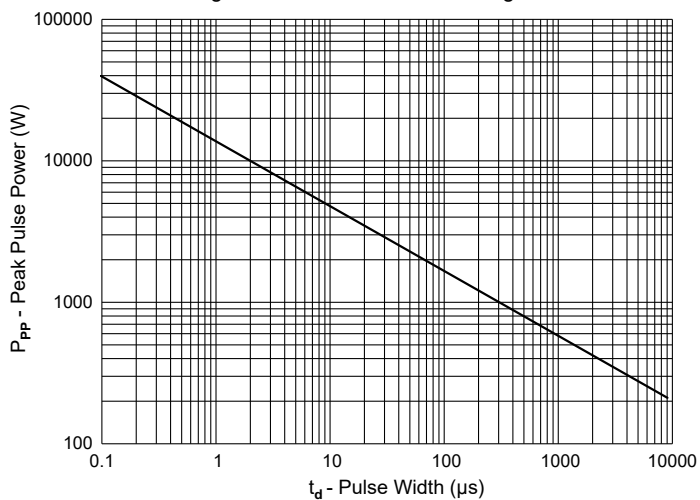


Fig. 2 - Typical Junction Capacitance

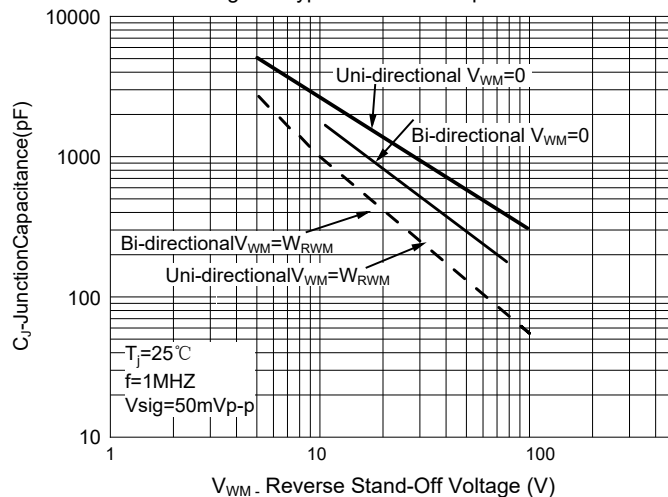


Fig. 3 - Pulse Waveform

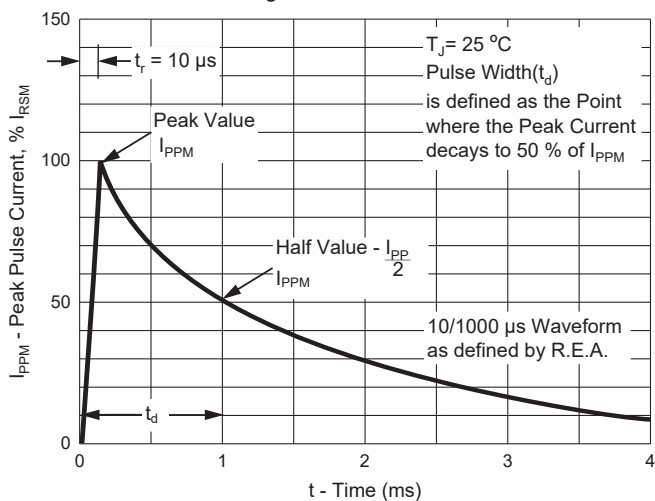
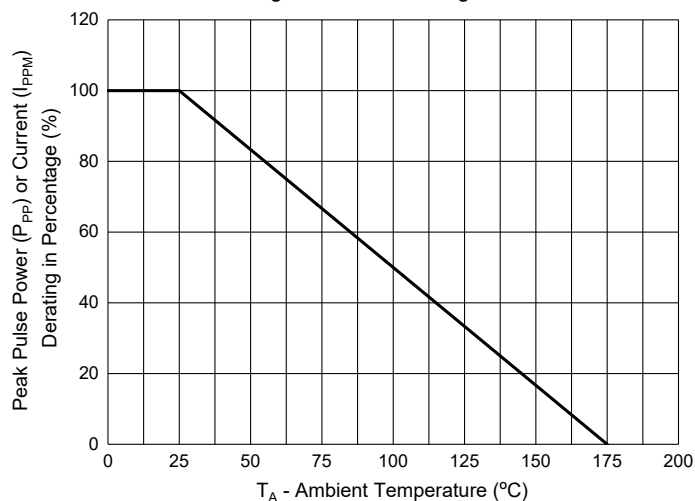


Fig. 4 - Pulse Derating Curve



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:10Kpcs/Reel

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