

### Features

- Glass Passivated Die Construction
- 400W Peak Pulse Power Dissipation
- 5.0V – 170V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O



### Mechanical Data

- Case: JEDEC DO-214AC Low Profile Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking:  
 Unidirectional – Device Code and Cathode Band  
 Bidirectional – Device Code Only
- Weight: 0.064 grams (approx.)

SMA/DO-214AC		
Dim	Min	Max
A	2.50	2.90
B	4.00	4.60
C	1.40	1.60
D	0.152	0.305
E	4.80	5.28
F	2.00	2.44
G	0.051	0.203
H	0.76	1.52
All Dimensions in mm		

“C” Suffix Designates Bi-directional Devices  
 “A” Suffix Designates 5% Tolerance Devices  
 No Suffix Designates 10% Tolerance Devices

### Maximum Ratings and Electrical Characteristics @ $T_A=25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation at $T_A = 25^\circ\text{C}$ (Note 1, 2, 5) Figure 3	PPPM	400 Minimum	W
Peak Forward Surge Current (Note 3)	IFSM	40	A
Peak Pulse Current on 10/1000 $\mu\text{S}$ Waveform (Note 1) Figure 4	IPPM	See Table 1	A
Steady State Power Dissipation (Note 4)	PM(AV)	1.0	W
Operating and Storage Temperature Range	$T_j, T_{STG}$	-55 to +150	$^\circ\text{C}$

- Note: 1. Non-repetitive current pulse, per Figure 4 and derated above  $T_A = 25^\circ\text{C}$  per Figure 1.  
 2. Mounted on 5.0mm<sup>2</sup> copper pads to each terminal.  
 3. 8.3ms single half sine-wave duty cycle = 4 pulses per minutes maximum.  
 4. Lead temperature at  $75^\circ\text{C} = T_L$ .  
 5. Peak pulse power waveform is 10/1000 $\mu\text{S}$ .

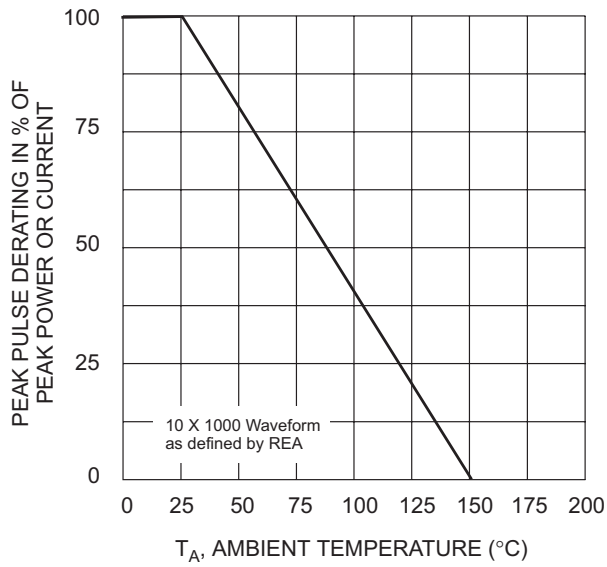


Fig. 1 Pulse Derating Curve

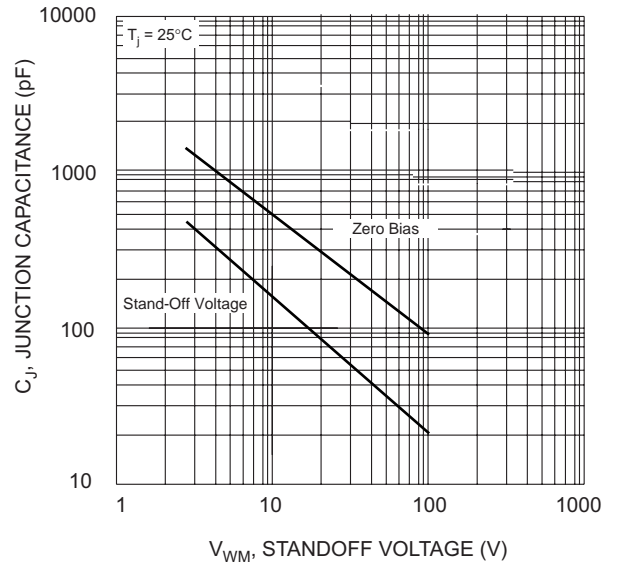


Fig. 2 Typical Junction Capacitance

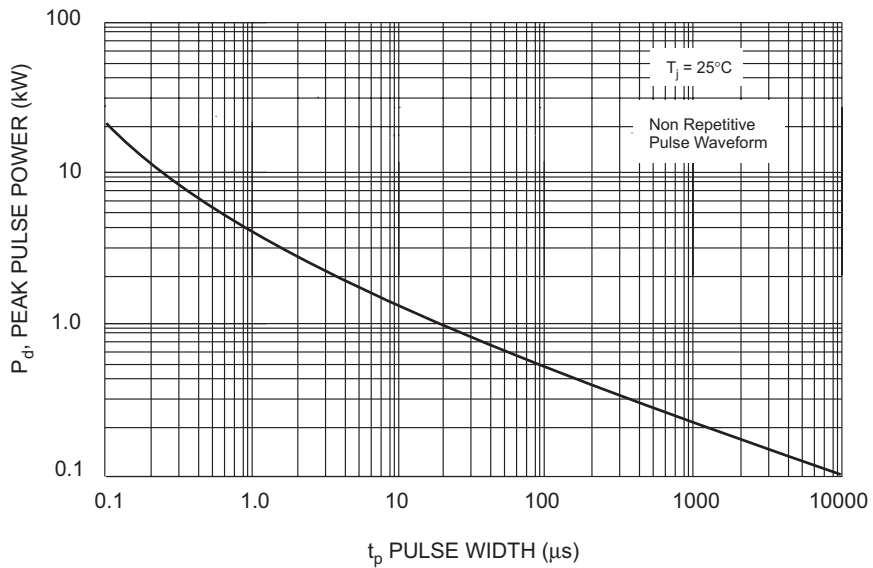


Fig. 3 Pulse Rating Curve

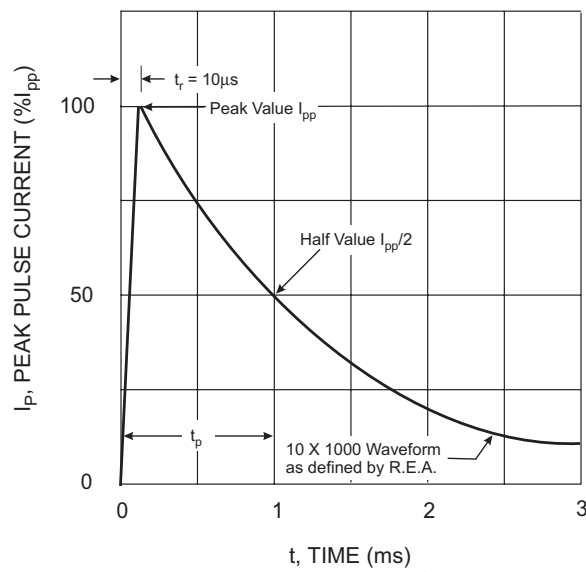


Fig. 4 Pulse Waveform

# UNI-DIRECTIONAL 400 WATT SURFACE MOUNT TVS

UNI-DIRECTIONAL PART NUMBER	REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V)	PEAK PULSE CURRENT Ipp (A)	REVERSE LEAKAGE @VRWM IR (uA)
P4SMAJ5.0	5.00	6.40	7.55	10	9.6	41.6	800
P4SMAJ5.0A	5.00	6.40	7.25	10	9.2	43.5	800
P4SMAJ6.0	6.00	6.67	8.45	10	11.4	35.1	800
P4SMAJ6.0A	6.00	6.67	7.67	10	10.3	38.8	800
P4SMAJ6.5	6.50	7.22	9.14	10	12.3	32.5	500
P4SMAJ6.5A	6.50	7.22	8.30	10	11.2	35.7	500
P4SMAJ7.0	7.00	7.78	9.86	10	13.3	30.1	200
P4SMAJ7.0A	7.00	7.78	8.95	10	12.0	33.3	200
P4SMAJ7.5	7.50	8.33	10.67	1	14.3	28.0	100
P4SMAJ7.5A	7.50	8.33	9.58	1	12.9	31.0	100
P4SMAJ8.0	8.00	8.99	11.30	1	15.0	26.5	50
P4SMAJ8.0A	8.00	8.99	10.23	1	13.6	29.4	50
P4SMAJ8.5	8.50	9.44	11.92	1	15.9	25.1	10
P4SMAJ8.5A	8.50	9.44	10.82	1	14.4	27.7	10
P4SMAJ9.0	9.00	10.00	12.60	1	16.9	23.6	5
P4SMAJ9.0A	9.00	10.00	11.50	1	15.4	26.0	5
P4SMAJ10	10.00	11.10	14.10	1	18.8	21.2	5
P4SMAJ10A	10.00	11.10	12.80	1	17.0	23.5	5
P4SMAJ11	11.00	12.20	15.40	1	20.1	20.0	5
P4SMAJ11A	11.00	12.20	14.00	1	18.2	22.0	5
P4SMAJ12	12.00	13.30	16.90	1	22.0	18.1	5
P4SMAJ12A	12.00	13.30	15.30	1	19.9	20.1	5
P4SMAJ13	13.00	14.40	18.20	1	23.8	16.8	5
P4SMAJ13A	13.00	14.40	16.50	1	21.5	18.6	5
P4SMAJ14	14.00	15.60	19.80	1	25.8	15.5	5
P4SMAJ14A	14.00	15.60	17.90	1	23.2	17.2	5
P4SMAJ15	15.00	16.70	21.10	1	26.9	14.8	5
P4SMAJ15A	15.00	16.70	19.20	1	24.4	16.4	5
P4SMAJ16	16.00	17.80	22.60	1	28.8	13.8	5
P4SMAJ16A	16.00	17.80	20.50	1	26.0	15.3	5
P4SMAJ17	17.00	18.90	23.90	1	30.5	13.1	5
P4SMAJ17A	17.00	18.90	21.70	1	27.6	14.5	5
P4SMAJ18	18.00	20.00	25.30	1	32.2	12.4	5
P4SMAJ18A	18.00	20.00	23.30	1	29.2	13.7	5
P4SMAJ20	20.00	22.20	28.10	1	35.8	11.1	5
P4SMAJ20A	20.00	22.20	25.50	1	32.4	12.3	5
P4SMAJ22	22.00	24.40	30.90	1	39.4	10.1	5
P4SMAJ22A	22.00	24.40	28.00	1	35.5	11.2	5
P4SMAJ24	24.00	26.70	33.80	1	43.0	9.3	5
P4SMAJ24A	24.00	26.70	30.70	1	38.9	10.3	5
P4SMAJ26	26.00	28.90	36.60	1	46.6	8.6	5
P4SMAJ26A	26.00	28.90	33.20	1	42.1	9.5	5
P4SMAJ28	28.00	31.10	39.40	1	50.0	8.0	5
P4SMAJ28A	28.00	31.10	35.80	1	45.4	8.8	5
P4SMAJ30	30.00	33.30	42.20	1	53.5	7.5	5
P4SMAJ30A	30.00	33.30	38.30	1	48.4	8.3	5
P4SMAJ33	33.00	36.70	46.50	1	59.0	6.8	5
P4SMAJ33A	33.00	36.70	42.20	1	53.3	7.5	5
P4SMAJ36	36.00	40.00	50.70	1	64.3	6.2	5
P4SMAJ36A	36.00	40.00	46.00	1	58.1	6.9	5
P4SMAJ40	40.00	44.40	56.30	1	71.4	5.6	5
P4SMAJ40A	40.00	44.40	51.10	1	64.5	6.2	5
P4SMAJ43	43.00	47.80	60.50	1	76.7	5.2	5
P4SMAJ43A	43.00	47.80	54.90	1	69.4	5.7	5
P4SMAJ45	45.00	50.00	63.30	1	80.3	5.0	5
P4SMAJ45A	45.00	50.00	57.50	1	72.7	5.5	5
P4SMAJ48	48.00	53.30	67.50	1	85.5	4.7	5
P4SMAJ48A	48.00	53.30	61.30	1	77.4	5.2	5
P4SMAJ51	51.00	56.70	71.80	1	91.1	4.4	5
P4SMAJ51A	51.00	56.70	65.20	1	82.4	4.9	5
P4SMAJ54	54.00	60.00	76.00	1	96.3	4.2	5
P4SMAJ54A	54.00	60.00	69.00	1	87.1	4.6	5
P4SMAJ58	58.00	64.40	81.60	1	103.0	3.9	5
P4SMAJ58A	58.00	64.40	74.10	1	93.6	4.3	5
P4SMAJ60	60.00	66.70	84.50	1	107.0	3.7	5
P4SMAJ60A	60.00	66.70	76.70	1	96.8	4.1	5
P4SMAJ64	64.00	71.10	90.10	1	114.0	3.5	5
P4SMAJ64A	64.00	71.10	81.80	1	103.0	3.9	5
P4SMAJ70	70.00	77.80	98.60	1	125.0	3.2	5
P4SMAJ70A	70.00	77.80	89.50	1	113.0	3.5	5
P4SMAJ75	75.00	83.30	105.70	1	134.0	3.0	5
P4SMAJ75A	75.00	83.30	95.80	1	121.0	3.3	5
P4SMAJ78	78.00	86.70	109.80	1	139.0	2.9	5
P4SMAJ78A	78.00	86.70	99.70	1	126.0	2.2	5
P4SMAJ85	85.00	94.40	119.20	1	151.0	2.6	5
P4SMAJ85A	85.00	94.40	108.20	1	137.0	2.9	5
P4SMAJ90	90.00	100.00	126.50	1	160.0	2.5	5
P4SMAJ90A	90.00	100.00	115.50	1	146.0	2.7	5
P4SMAJ100	100.00	111.00	141.00	1	179.0	2.2	5
P4SMAJ100A	100.00	111.00	128.00	1	162.0	2.5	5
P4SMAJ110	110.00	122.00	154.50	1	196.0	2.0	5
P4SMAJ110A	110.00	122.00	140.50	1	177.0	2.3	5
P4SMAJ120	120.00	133.00	169.00	1	214.0	1.9	5
P4SMAJ120A	120.00	133.00	153.00	1	193.0	2.0	5
P4SMAJ130	130.00	144.00	182.50	1	231.0	1.7	5
P4SMAJ130A	130.00	144.00	165.50	1	209.0	1.9	5
P4SMAJ150	150.00	167.00	211.50	1	269.0	1.5	5
P4SMAJ150A	150.00	167.00	192.50	1	243.0	1.6	5
P4SMAJ160	160.00	178.00	226.00	1	287.0	1.4	5
P4SMAJ160A	160.00	178.00	205.00	1	259.0	1.5	5
P4SMAJ170	170.00	189.00	239.50	1	304.0	1.3	5
P4SMAJ170A	170.00	189.00	217.50	1	275.0	1.4	5

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P4SMAJ5.0C	5.00	6.40	7.55	10	9.6	41.6	1600
P4SMAJ5.0CA	5.00	6.40	7.25	10	9.2	43.5	1600
P4SMAJ6.0C	6.00	6.67	8.45	10	11.4	35.1	1600
P4SMAJ6.0CA	6.00	6.67	7.67	10	10.3	38.8	1600
P4SMAJ6.5C	6.50	7.22	9.14	10	12.3	32.5	1000
P4SMAJ6.5CA	6.50	7.22	8.30	10	11.2	35.7	1000
P4SMAJ7.0C	7.00	7.78	9.86	10	13.3	30.1	400
P4SMAJ7.0CA	7.00	7.78	8.95	10	12.0	33.3	400
P4SMAJ7.5C	7.50	8.33	10.67	1	14.3	28.0	200
P4SMAJ7.5CA	7.50	8.33	9.58	1	12.9	31.0	200
P4SMAJ8.0C	8.00	8.99	11.30	1	15.0	26.5	100
P4SMAJ8.0CA	8.00	8.99	10.23	1	13.6	29.4	100
P4SMAJ8.5C	8.50	9.44	11.92	1	15.9	25.1	20
P4SMAJ8.5CA	8.50	9.44	10.82	1	14.4	27.7	20
P4SMAJ9.0C	9.00	10.00	12.60	1	16.9	23.6	10
P4SMAJ9.0CA	9.00	10.00	11.50	1	15.4	26.0	10
P4SMAJ10C	10.00	11.10	14.10	1	18.8	21.2	5
P4SMAJ10CA	10.00	11.10	12.80	1	17.0	23.5	5
P4SMAJ11C	11.00	12.20	15.40	1	20.1	20.0	5
P4SMAJ11CA	11.00	12.20	14.00	1	18.2	22.0	5
P4SMAJ12C	12.00	13.30	16.90	1	22.0	18.1	5
P4SMAJ12CA	12.00	13.30	15.30	1	19.9	20.1	5
P4SMAJ13C	13.00	14.40	18.20	1	23.8	16.8	5
P4SMAJ13CA	13.00	14.40	16.50	1	21.5	18.6	5
P4SMAJ14C	14.00	15.60	19.80	1	25.8	15.5	5
P4SMAJ14CA	14.00	15.60	17.90	1	23.2	17.2	5
P4SMAJ15C	15.00	16.70	21.10	1	26.9	14.8	5
P4SMAJ15CA	15.00	16.70	19.20	1	24.4	16.4	5
P4SMAJ16C	16.00	17.80	22.60	1	28.8	13.8	5
P4SMAJ16CA	16.00	17.80	20.50	1	26.0	15.3	5
P4SMAJ17C	17.00	18.90	23.90	1	30.5	13.1	5
P4SMAJ17CA	17.00	18.90	21.70	1	27.6	14.5	5
P4SMAJ18C	18.00	20.00	25.30	1	32.2	12.4	5
P4SMAJ18CA	18.00	20.00	23.30	1	29.2	13.7	5
P4SMAJ20C	20.00	22.20	28.10	1	35.8	11.1	5
P4SMAJ20CA	20.00	22.20	25.50	1	32.4	12.3	5
P4SMAJ22C	22.00	24.40	30.90	1	39.4	10.1	5
P4SMAJ22CA	22.00	24.40	28.00	1	35.5	11.2	5
P4SMAJ24C	24.00	26.70	33.80	1	43.0	9.3	5
P4SMAJ24CA	24.00	26.70	30.70	1	38.9	10.3	5
P4SMAJ26C	26.00	28.90	36.60	1	46.6	8.6	5
P4SMAJ26CA	26.00	28.90	33.20	1	42.1	9.5	5
P4SMAJ28C	28.00	31.10	39.40	1	50.0	8.0	5
P4SMAJ28CA	28.00	31.10	35.80	1	45.4	8.8	5
P4SMAJ30C	30.00	33.30	42.20	1	53.5	7.5	5
P4SMAJ30CA	30.00	33.30	38.30	1	48.4	8.3	5
P4SMAJ33C	33.00	36.70	46.50	1	59.0	6.8	5
P4SMAJ33CA	33.00	36.70	42.20	1	53.3	7.5	5
P4SMAJ36C	36.00	40.00	50.70	1	64.3	6.2	5
P4SMAJ36CA	36.00	40.00	46.00	1	58.1	6.9	5
P4SMAJ40C	40.00	44.40	56.30	1	71.4	5.6	5
P4SMAJ40CA	40.00	44.40	51.10	1	64.5	6.2	5
P4SMAJ43C	43.00	47.80	60.50	1	76.7	5.2	5
P4SMAJ43CA	43.00	47.80	54.90	1	69.4	5.7	5
P4SMAJ45C	45.00	50.00	63.30	1	80.3	5.0	5
P4SMAJ45CA	45.00	50.00	57.50	1	72.7	5.5	5
P4SMAJ48C	48.00	53.30	67.50	1	85.5	4.7	5
P4SMAJ48CA	48.00	53.30	61.30	1	77.4	5.2	5
P4SMAJ51C	51.00	56.70	71.80	1	91.1	4.4	5
P4SMAJ51CA	51.00	56.70	65.20	1	82.4	4.9	5
P4SMAJ54C	54.00	60.00	76.00	1	96.3	4.2	5
P4SMAJ54CA	54.00	60.00	69.00	1	87.1	4.6	5
P4SMAJ58C	58.00	64.40	81.60	1	103.0	3.9	5
P4SMAJ58CA	58.00	64.40	74.10	1	93.6	4.3	5
P4SMAJ60C	60.00	66.70	84.50	1	107.0	3.7	5
P4SMAJ60CA	60.00	66.70	76.70	1	96.8	4.1	5
P4SMAJ64C	64.00	71.10	90.10	1	114.0	3.5	5
P4SMAJ64CA	64.00	71.10	81.80	1	103.0	3.9	5
P4SMAJ70C	70.00	77.80	98.60	1	125.0	3.2	5
P4SMAJ70CA	70.00	77.80	89.50	1	113.0	3.5	5
P4SMAJ75C	75.00	83.30	105.70	1	134.0	3.0	5
P4SMAJ75CA	75.00	83.30	95.80	1	121.0	3.3	5
P4SMAJ78C	78.00	86.70	109.80	1	139.0	2.9	5
P4SMAJ78CA	78.00	86.70	99.70	1	126.0	2.2	5
P4SMAJ85C	85.00	94.40	119.20	1	151.0	2.6	5
P4SMAJ85CA	85.00	94.40	108.20	1	137.0	2.9	5
P4SMAJ90C	90.00	100.00	126.50	1	160.0	2.5	5
P4SMAJ90CA	90.00	100.00	115.50	1	146.0	2.7	5
P4SMAJ100C	100.00	111.00	141.00	1	179.0	2.2	5
P4SMAJ100CA	100.00	111.00	128.00	1	162.0	2.5	5
P4SMAJ110C	110.00	122.00	154.50	1	196.0	2.0	5
P4SMAJ110CA	110.00	122.00	140.50	1	177.0	2.3	5
P4SMAJ120C	120.00	133.00	169.00	1	214.0	1.9	5
P4SMAJ120CA	120.00	133.00	153.00	1	193.0	2.0	5
P4SMAJ130C	130.00	144.00	182.50	1	231.0	1.7	5
P4SMAJ130CA	130.00	144.00	165.50	1	209.0	1.9	5
P4SMAJ150C	150.00	167.00	211.50	1	269.0	1.5	5
P4SMAJ150CA	150.00	167.00	192.50	1	243.0	1.6	5
P4SMAJ160C	160.00	178.00	226.00	1	287.0	1.4	5
P4SMAJ160CA	160.00	178.00	205.00	1	259.0	1.5	5
P4SMAJ170C	170.00	189.00	239.50	1	304.0	1.3	5
P4SMAJ170CA	170.00	189.00	217.50	1	275.0	1.4	5