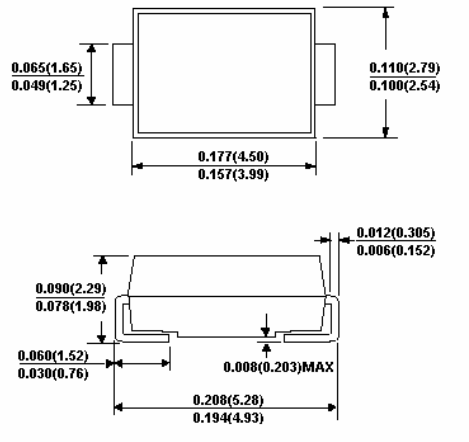
TSMA6.8A thru 220CA

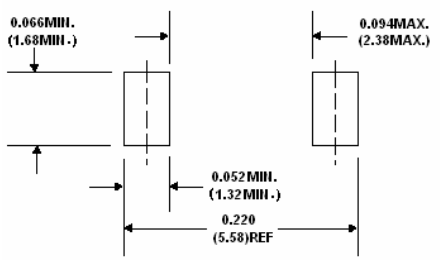
表面贴装瞬间抑制二极管
击穿电压6.8 --- 220 V
峰值功率400W

Surface Mount Transient Voltage Suppressors
Breakdown Voltage 6.8 to 220V
Peak Pulse Power 400W

DO-214AC（SMA）



Mounting Pad Layout



特征 Features

- 表面安装应用 For surface mount applications
- 玻璃钝化芯片 Glass passivated junction
- 快速响应时间 Very fast response time
- 优良钳位能力 Excellent clamping capability
- 最高焊接温度 250℃/10 秒
  High temperature soldering guaranteed:
  250°C/10 seconds at terminals
- 400W 峰值脉冲保护能力(≥91V 为 300W)
  400W peak pulse power capability (300W above 91V)
- 10/1000μs 波形，重复率:0.01%
  a 10/1000μs waveform, repetition rate (duty cycle): 0.01%

机械数据 Mechanical Data

- 封装: 塑料封装 Case: Molded plastic body
- 端子: 焊料被镀 Terminals: Solder plated
- 极性: 色环端为负极 Polarity: Color band denotes cathode end
- 安装位置: 任意 Mounting Position: Any
- 重量 0.002盎司,0.064克 Weight: 0.002ounce, 0.064 gram

产品的双向应用 Devices for Bidirectional Applications

“BI”为双向，使用“CA”作后缀(如：TSMA10CA) For bi-directional devices, use suffix CA (e.g. TSMA10CA).

极限值和温度特性 Maximum Ratings & Thermal Characteristics

T_A = 25℃ 除非另有规定。
Ratings at 25℃ ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
最大峰值脉冲功率 Peak pulse power dissipation with a 10/1000μs waveform (1, 2) (see fig. 1)	P_{PPM}	400	W
最大峰值脉冲电流 Peak pulse current with a 10/1000μs waveform (1)	I_{PPM}	See Next Table	A
耗散功率 Power Dissipation on Infinite Heatsink, T_A=50℃	$P_{M(AV)}$	1.0	W
正向峰值浪涌电流 8.3ms单一正弦半波 Peak forward surge current 8.3ms single half sine-wave uni-directional only (2)	I_{FSM}	40	A
典型热阻 Typical thermal resistance (3)	$R_{\theta JA}$ $R_{\theta JL}$	120 30	℃/W
工作结温和存储温度 Operating junction and storage temperature range	T_J, T_{STG}	-65---+150	℃

Notes: (1) Non-repetitive current pulse, per Fig. 3 and derated above T_A = 25°C per Fig. 2 Rating is 300W above 91V
(2) Mounted on 0.2 x 0.2” (5.0 x 5.0mm) copper pads to each terminal
(3) Mounted on minimum recommended pad layout

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Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified. V_F = 3.5V at I_F = 25A (uni-directional only)

General Semiconductor Part Number	Device Marking Code		Breakdown Voltage $V_{(BR)}$ (V)(1)		Test Current at I_T (mA)	Stand-off Voltage V_{WM} (V)	Maximum Reverse Leakage at V_{WM} I_D (μA)	Maximum Peak Pulse Current I_{PPM}(2) (A)	Maximum Clamping Voltage at I_{PPM} V_C (V)	Maximu Temp. Coefficie of $V_{(BR)}$ (% / °C)
	UNI	BI	Min	Max						
TSMA6.8A	6V8A	6V8C	6.45	7.14	10	5.80	1000	40.0	10.5	0.057
TSMA7.5A	7V5A	7V5C	7.13	7.88	10	6.40	500	37.0	11.3	0.061
TSMA8.2A	8V2A	8V2C	7.79	8.61	10	7.02	200	35.0	12.1	0.065
TSMA9.1A	9V1A	9V1C	8.65	9.55	1.0	7.78	50	31.0	13.4	0.068
TSMA10A	10A	10C	9.50	10.5	1.0	8.55	10	29.0	14.5	0.073
TSMA11A	11A	11C	10.5	11.6	1.0	9.40	5.0	27.0	15.6	0.075
TSMA12A	12A	12C	11.4	12.6	1.0	10.2	5.0	25.0	16.7	0.078
TSMA13A	13A	13C	12.4	13.7	1.0	11.1	5.0	23.0	18.2	0.081
TSMA15A	15A	15C	14.3	15.8	1.0	12.8	5.0	20.0	21.2	0.084
TSMA16A	16A	16C	15.2	16.8	1.0	13.6	5.0	19.0	22.5	0.086
TSMA18A	18A	18C	17.1	18.9	1.0	15.3	5.0	17.0	25.2	0.089
TSMA20A	20A	20C	19.0	21.0	1.0	17.1	5.0	15.0	27.7	0.090
TSMA22A	22A	22C	20.9	23.1	1.0	18.8	5.0	14.0	30.6	0.092
TSMA24A	24A	24C	22.8	25.2	1.0	20.5	5.0	13.0	33.2	0.09
TSMA27A	27A	27C	25.7	28.4	1.0	23.1	5.0	11.2	37.5	0.096
TSMA30A	30A	30C	28.5	31.5	1.0	25.6	5.0	10.0	41.4	0.097
TSMA33A	33A	33C	31.4	34.7	1.0	28.2	5.0	9.00	45.7	0.098
TSMA36A	36A	36C	34.2	37.8	1.0	30.8	5.0	8.40	49.9	0.099
TSMA39A	39A	39C	37.1	41.0	1.0	33.3	5.0	7.80	53.9	0.100
TSMA43A	43A	43C	40.9	45.2	1.0	36.8	5.0	7.10	59.3	0.101
TSMA47A	47A	47C	44.7	49.4	1.0	40.2	5.0	6.50	64.8	0.101
TSMA51A	51A	51C	48.5	53.6	1.0	43.6	5.0	6.00	70.1	0.102
TSMA56A	56A	56C	53.2	58.8	1.0	47.8	5.0	5.50	77.0	0.103
TSMA62A	62A	62C	58.9	65.1	1.0	53.0	5.0	5.00	85.0	0.104
TSMA68A	68A	68C	64.6	71.4	1.0	58.1	5.0	4.60	92.0	0.104
TSMA75A	75A	75C	71.3	78.8	1.0	64.1	5.0	4.10	104	0.105
TSMA82A	82A	82C	77.9	86.1	1.0	70.1	5.0	3.70	113	0.105
TSMA91A	91A	91C	86.5	95.5	1.0	77.8	5.0	3.40	125	0.106
TSMA100A	100A	100C	95.0	105	1.0	85.5	5.0	3.10	137	0.106
TSMA110A	110A	110C	105	116	1.0	94.0	5.0	2.80	152	0.107
TSMA120A	120A	120C	114	126	1.0	102	5.0	2.50	165	0.107
TSMA130A	130A	130C	124	137	1.0	111	5.0	2.30	179	0.107
TSMA150A	150A	150C	143	158	1.0	128	5.0	2.00	207	0.106
TSMA160A	160A	160C	152	168	1.0	136	5.0	1.90	219	0.108
TSMA170A	170A	170C	162	179	1.0	145	5.0	1.80	234	0.108
TSMA180A	180A	180C	171	189	1.0	154	5.0	1.70	246	0.108
TSMA200A	200A	200C	190	210	1.0	171	5.0	1.53	274	0.108
TSMA220A	220A	220C	209	231	1.0	185	5.0	1.40	328	0.108

Notes: (1) $V_{(BR)}$ measured after I_T applied for 300μs, I_T=square wave pulse or equivalent
(2) Surge current waveform per Fig. 3 and derate per Fig. 2
(3) For bidirectional types with V_R 10 Volts and less, the I_D limit is doubled

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

Fig. 1 – Peak Pulse Power Rating Curve

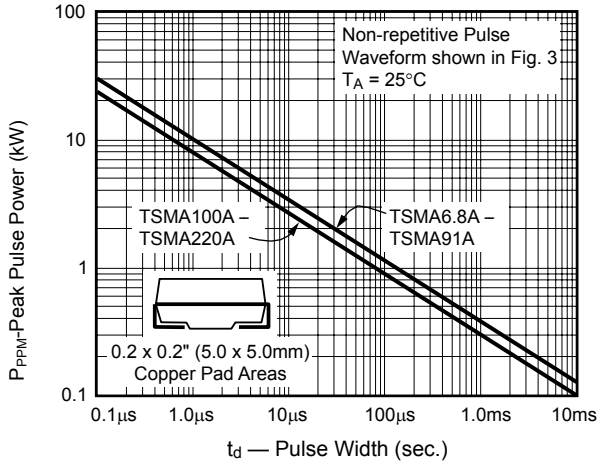

Fig. 2 – Pulse Derating Curve

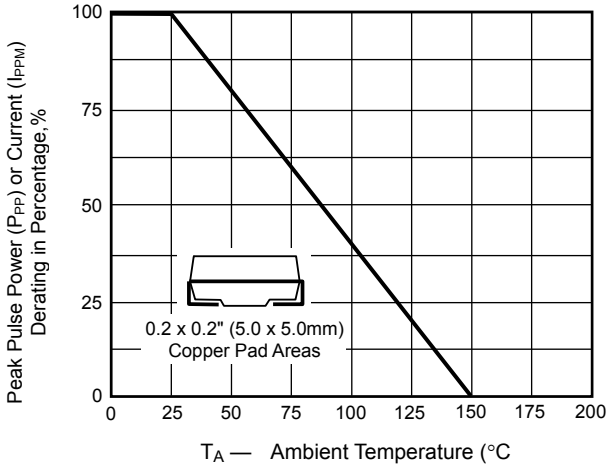

Fig. 3 – Pulse Waveform

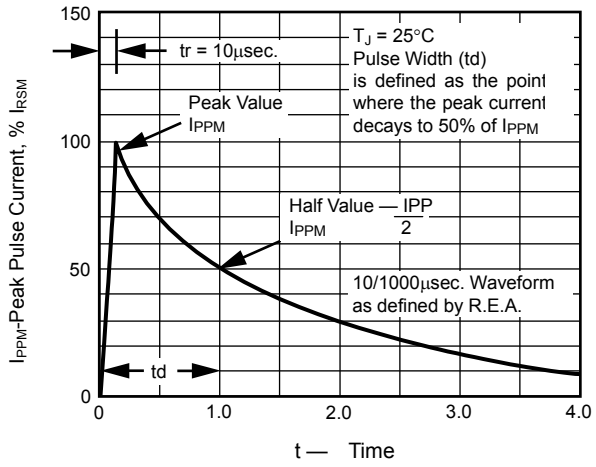

Fig. 4 – Typical Junction Capacitance

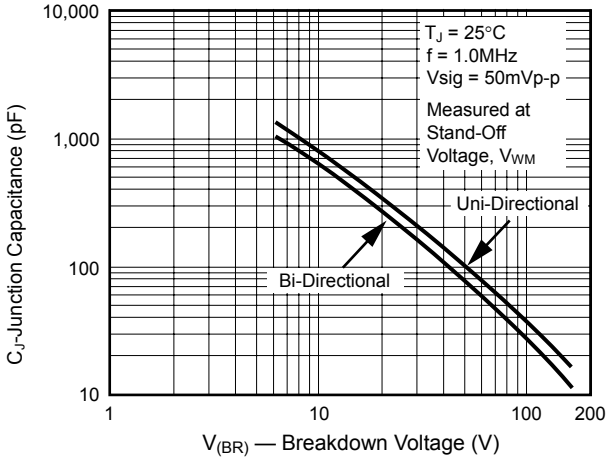

Fig. 5 – Typical Transient Thermal Impedance

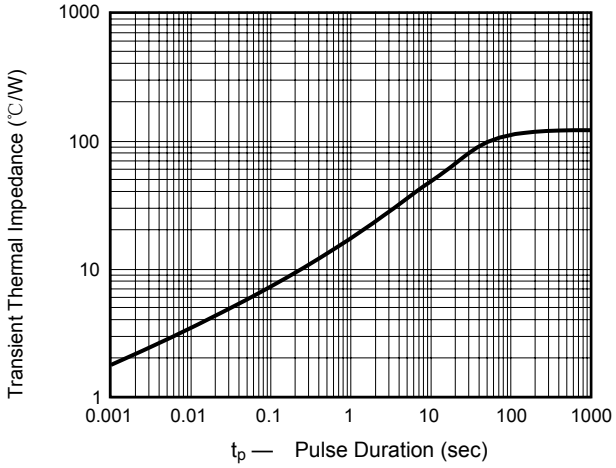

Fig. 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only