

Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Optimized for LAN protection applications
- Ideal for ESD protection of data lines in accordance with IEC 1000-4-2 (IEC801-2)
- Ideal for EFT protection of data lines in accordance with IEC 1000-4-4 (IEC801-4)
- Low profile package with built-in strain relief for surface mounted applications
- Glass passivated junction
- Low incremental surge resistance, excellent clamping capability
- 400W peak pulse power capability with a 10/1000us wave form,
- Repetition rate (duty cycle): 0.01% (300W above 91V)
Very fast response time
- High temperature soldering guaranteed: 250°C/10 seconds at terminals



DO-214AC(SMA)



RoHS
COMPLIANT

Mechanical Data

Case: JEDEC DO-214AC(SMA) molded plastic over passivated Chip
Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

Polarity: For unidirectional types the band denotes the cathode, which is positive with respect to the anode under normal TVS operation

Mounting Position: Any

Weight: 0.002oz., 0.064g

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation With a 10/1000us Waveform ^{1,2} (see Fig.1)	P _{PPM}	400	W
Peak Pulse Current With a 10/1000us Waveform ¹ (Fig.3)	I _{PPM}	See Next Table	A
Power Dissipation On Infinite Heatsink, T _A =50°C	P _{M(AV)}	1	W
Peak Forward Surge Current 8.3ms Single Half Sine-wave Uni-Directional Only ²	I _{FSM}	40	A
Typical Thermal Resistance, Junction To Ambient Air ³	R _{θJA}	120	°C/W
Typical Thermal Resistance, Junction To Leads	R _{θJL}	30	°C/W
Operating Junction Temperature Range	T _J	-55 to +150	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

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 5.0 mm) copper pads to each terminal
3. Mounted on minimum recommended pad layout

Electrical Characteristics $T_A=25^\circ\text{C}$ unless otherwise specified, $V_F=3.5\text{V}$ at $I_F=25\text{A}$ (uni-directional only)

Part Number (Uni)	Part Number (Bi)	Marking Code		Breakdown Voltage ¹		Test Current	Stand-off Voltage	Max. Reverse Leakage Current ³	Max. Clamping Voltage	Max. Peak Pulse Current ²	Max. Temperature Coefficient Of V_{BR}
				$V_{(BR)}^1$							
		UNI	BI	Min. V	Max. V	I_T mA	V_{WM} V	I_D @ V_{WM} μA	V_C @ I_{PPM} V	I_{PPM} A	(% / °C)
P4SMA6.8A	P4SMA6.8CA	6V8A	6V8C	6.45	7.14	10	5.80	1000	10.5	38.1	0.057
P4SMA7.5A	P4SMA7.5CA	7V5A	7V5C	7.13	7.88	10	6.40	500	11.3	35.4	0.061
P4SMA8.2A	P4SMA8.2CA	8V2A	8V2C	7.79	8.61	10	7.02	200	12.1	33.1	0.065
P4SMA9.1A	P4SMA9.1CA	9V1A	9V1C	8.65	9.55	1.0	7.78	50	13.4	29.9	0.068
P4SMA10A	P4SMA10CA	10A	10C	9.50	10.5	1.0	8.55	10	14.5	27.6	0.073
P4SMA11A	P4SMA11CA	11A	11C	10.5	11.6	1.0	9.40	5.0	15.6	25.6	0.075
P4SMA12A	P4SMA12CA	12A	12C	11.4	12.6	1.0	10.2	1.0	16.7	24.0	0.078
P4SMA13A	P4SMA13CA	13A	13C	12.4	13.7	1.0	11.1	1.0	18.2	22.0	0.081
P4SMA15A	P4SMA15CA	15A	15C	14.3	15.8	1.0	12.8	1.0	21.2	18.9	0.084
P4SMA16A	P4SMA16CA	16A	16C	15.2	16.8	1.0	13.6	1.0	22.5	17.8	0.086
P4SMA18A	P4SMA18CA	18A	18C	17.1	18.9	1.0	15.3	1.0	25.2	15.9	0.088
P4SMA20A	P4SMA20CA	20A	20C	19.0	21.0	1.0	17.1	1.0	27.7	14.4	0.090
P4SMA22A	P4SMA22CA	22A	22C	20.9	23.1	1.0	18.8	1.0	30.6	13.1	0.092
P4SMA24A	P4SMA24CA	24A	24C	22.8	25.2	1.0	20.5	1.0	33.2	12.0	0.094
P4SMA27A	P4SMA27CA	27A	27C	25.7	28.4	1.0	23.1	1.0	37.5	10.7	0.096
P4SMA30A	P4SMA30CA	30A	30C	28.5	31.5	1.0	25.6	1.0	41.4	9.7	0.097
P4SMA33A	P4SMA33CA	33A	33C	31.4	34.7	1.0	28.2	1.0	45.7	8.8	0.098
P4SMA36A	P4SMA36CA	36A	36C	34.2	37.8	1.0	30.8	1.0	49.9	8.0	0.099
P4SMA39A	P4SMA39CA	39A	39C	37.1	41.0	1.0	33.3	1.0	53.9	7.4	0.100
P4SMA43A	P4SMA43CA	43A	43C	40.9	45.2	1.0	36.8	1.0	59.3	6.7	0.101
P4SMA47A	P4SMA47CA	47A	47C	44.7	49.4	1.0	40.2	1.0	64.8	6.2	0.101
P4SMA51A	P4SMA51CA	51A	51C	48.5	53.6	1.0	43.6	1.0	70.1	5.7	0.102
P4SMA56A	P4SMA56CA	56A	56C	53.2	58.8	1.0	47.8	1.0	77.0	5.2	0.103
P4SMA62A	P4SMA62CA	62A	62C	58.9	65.1	1.0	53.0	1.0	85.0	4.7	0.104
P4SMA68A	P4SMA68CA	68A	68C	64.6	71.4	1.0	58.1	1.0	92.0	4.3	0.104
P4SMA75A	P4SMA75CA	75A	75C	71.3	78.8	1.0	64.1	1.0	104	3.9	0.105
P4SMA82A	P4SMA82CA	82A	82C	77.9	86.1	1.0	70.1	1.0	113	3.5	0.105

Electrical Characteristics $T_A=25^\circ\text{C}$ unless otherwise specified, $V_F=3.5\text{V}$ at $I_F=25\text{A}$ (uni-directional only)

Part Number (Uni)	Part Number (Bi)	Marking Code		Breakdown Voltage ¹		Test Current	Stand-off Voltage	Max. Reverse Leakage Current ³	Max. Clamping Voltage	Max. Peak Pulse Current ²	Max. Temperature Coefficient Of V_{BR}
				$V_{(BR)}^1$							
		Min.	Max.	UNI	BI						
		V	V			mA	V	μA	V	A	
P4SMA91A	P4SMA91CA	91A	91C	86.5	95.5	1.0	77.8	1.0	125	3.2	0.106
P4SMA100A	P4SMA100CA	100A	100C	95.0	105	1.0	85.5	1.0	137	2.2	0.106
P4SMA110A	P4SMA110CA	110A	110C	105	116	1.0	94.0	1.0	152	2.0	0.107
P4SMA120A	P4SMA120CA	120A	120C	114	126	1.0	102	1.0	165	1.8	0.107
P4SMA130A	P4SMA130CA	130A	130C	124	137	1.0	111	1.0	179	1.7	0.107
P4SMA150A	P4SMA150CA	150A	150C	143	158	1.0	128	1.0	207	1.4	0.106
P4SMA160A	P4SMA160CA	160A	160C	152	168	1.0	136	1.0	219	1.4	0.108
P4SMA170A	P4SMA170CA	170A	170C	162	179	1.0	145	1.0	234	1.3	0.108
P4SMA180A	P4SMA180CA	180A	180C	171	189	1.0	154	1.0	246	1.2	0.108
P4SMA200A	P4SMA200CA	200A	200C	190	210	1.0	171	1.0	274	1.1	0.108
P4SMA220A	P4SMA220CA	220A	220C	209	231	1.0	185	1.0	328	0.9	0.108
P4SMA250A	P4SMA250CA	250A	250C	237	263	1.0	214	1.0	344	1.2	0.108
P4SMA300A	P4SMA300CA	300A	300C	285	315	1.0	256	1.0	414	1.0	0.108
P4SMA350A	P4SMA350CA	350A	350C	332	368	1.0	300	1.0	482	0.9	0.108
P4SMA400A	P4SMA400CA	400A	400C	380	420	1.0	342	1.0	548	0.8	0.108
P4SMA440A	P4SMA440CA	440A	440C	418	462	1.0	376	1.0	602	0.7	0.108
P4SMA480A	P4SMA480CA	480A	480C	456	504	1.0	408	1.0	658	0.6	0.108
P4SMA510A	P4SMA510CA	510A	510C	485	535	1.0	434	1.0	698	0.6	0.108
P4SMA530A	P4SMA530CA	530A	530C	503.5	556.5	1.0	477	1.0	725	0.6	0.108
P4SMA540A	P4SMA540CA	540A	540C	513	567	1.0	459	1.0	740	0.5	0.108
P4SMA550A	P4SMA550CA	550A	550C	522.5	577.5	1.0	495	1.0	760	0.5	0.108

- Notes:** 1. $V_{(BR)}$ measured after I_T applied for 300us I_T =square wave pulse or equivalent
 2. Surge current waveform per Fig. 3 and derate per Fig. 2
 3. All terms and symbols are consistent with ANSI/IEEE CA62.35
 4. For bidirectional types with V_R 10 Volts and less, the I_D limit is doubled

Ratings and Characteristic Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

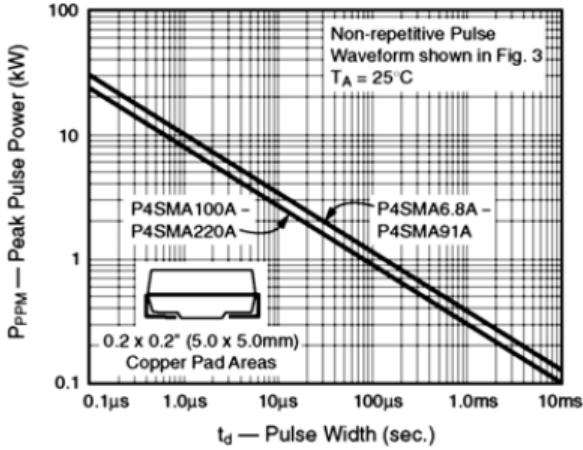


Figure 1. Peak Pulse Power Rating Curve

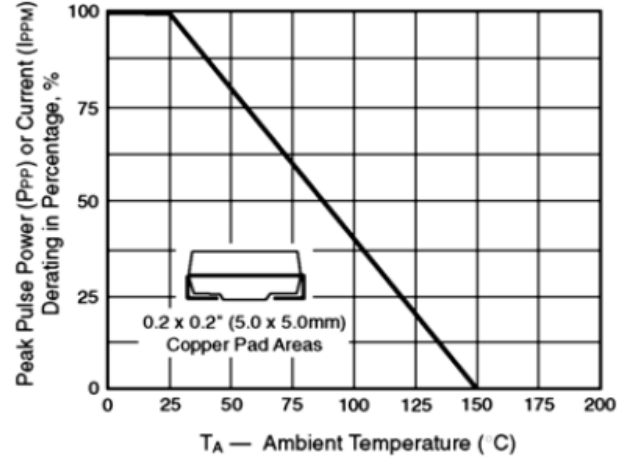


Figure 2. Pulse Derating Curve

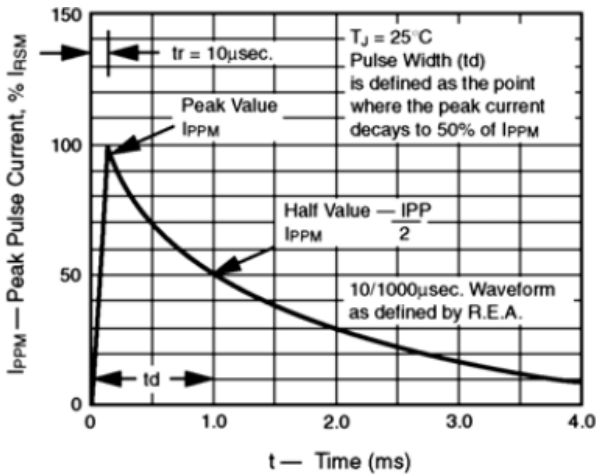


Figure 3. Pulse Waveform

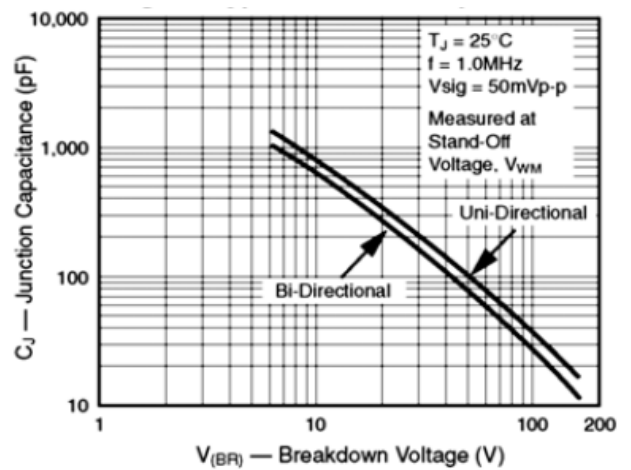


Figure 4. Typical Junction Capacitance

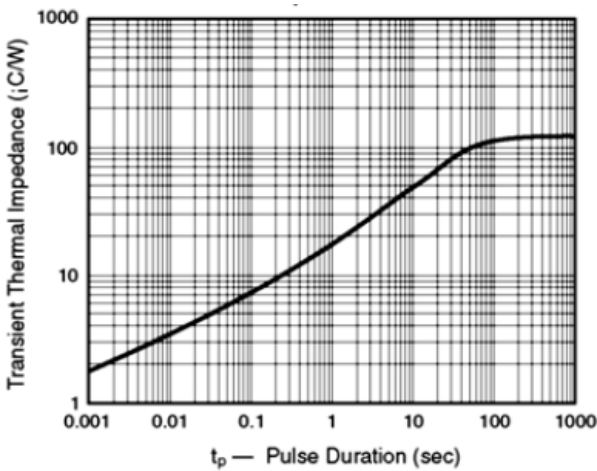


Figure 5. Typical Transient Thermal Impedance

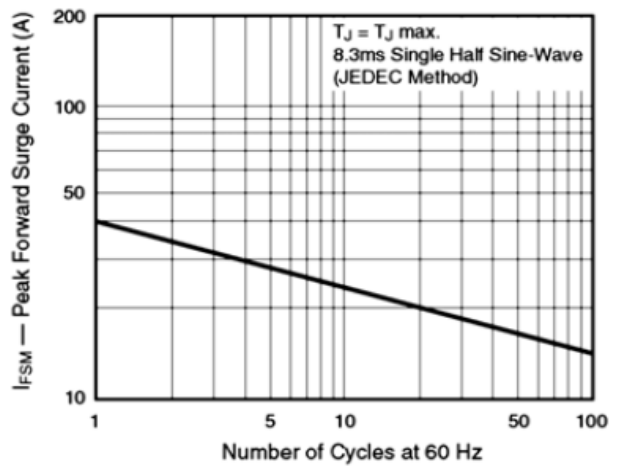
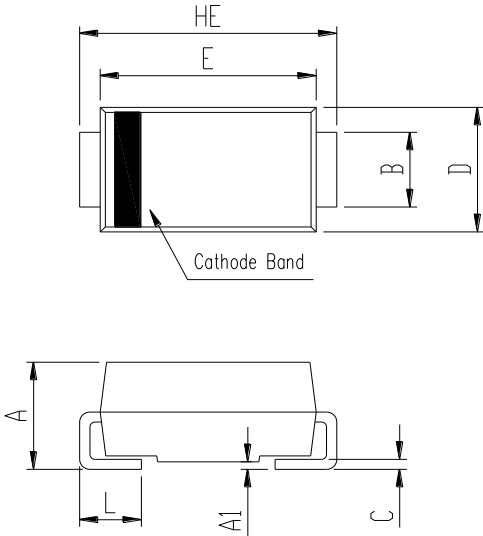


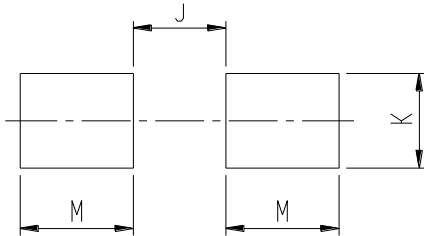
Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

Package Outline Dimensions DO-214AC(SMA)



SMA (DO-214AC)				
DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.90	2.25	0.075	0.089
A1	0.00	0.20	0.000	0.008
B	1.27	1.63	0.050	0.064
C	0.15	0.31	0.006	0.012
D	2.40	2.65	0.094	0.104
E	4.00	4.60	0.157	0.181
HE	4.80	5.20	0.189	0.205
L	0.80	1.50	0.031	0.059

Recommended Pad Layout



Recommended Pad Layout (Reference ONLY)				
DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	-	2.20	-	0.087
K	1.72	-	0.068	-
M	2.00	-	0.079	-