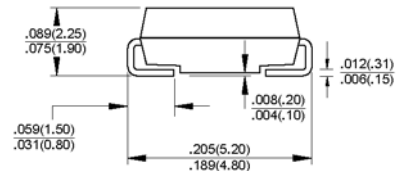
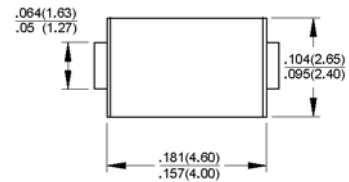


Features

- ◆ 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 waveform, repetition rate (duty cycle): 0.01% (300W above 78V)
- ◆ Very fast response time
- ◆ High temperature soldering guaranteed:
250°C/10 seconds at terminals



DO-214AC (SMA)



Dimensions in inches and (millimeters)

Mechanical Data

- ◆ Case: JEDEC DO-214AC(SMA) molded plastic over passivated chip
- ◆ Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- ◆ Polarity: For uni-directional 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

Devices for Bidirectional Applications

For bi-directional devices, use suffix CA (e.g. SMAJ10CA). Electrical characteristics apply in both directions.

Maximum Ratings and Thermal Characteristics

(Ratings at 25°C ambient temperature 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⁾	I_{PPM}	See Next Table	A
Peak forward surge current, 8.3ms single half sine-wave uni-directional only ⁽²⁾	I_{FSM}	40	A
Typical thermal resistance, junction to ambient ⁽³⁾	$R_{\theta JA}$	120	°C/W
Typical thermal resistance, junction to lead	$R_{\theta JL}$	30	°C/W
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C

- Notes:**
1. Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^\circ\text{C}$ per Fig. 2. Rating is 300W above 78V
 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

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

Device type	Device marking code		Breakdown voltage $V_{(BR)}$ (Volts) ⁽¹⁾		Test current at I_T (mA)	Stand-off voltage V_{WM} (Volts)	Maximum reverse leakage at V_{WM} $I_{D(3)}$ (μA)	Maximum peak pulse surge current $I_{PPM}^{(2)}$ (A)	Maximum clamping voltage at I_{PPM} V_C (Volts)
	UNI	BI	Min.	Max.					
SMAJ5.0	AD	WD	6.40	7.82	10	5.0	800	41.7	9.6
SMAJ5.0A ⁽⁵⁾	AE	WE	6.40	7.07	10	5.0	800	43.5	9.2
SMAJ6.0	AF	WF	6.67	8.15	10	6.0	800	35.1	11.4
SMAJ6.0A	AG	WG	6.67	7.37	10	6.0	800	38.8	10.3
SMAJ6.5	AH	WH	7.22	8.82	10	6.5	500	32.5	12.3
SMAJ6.5A	AK	WK	7.22	7.98	10	6.5	500	35.7	11.2
SMAJ7.0	AL	WL	7.78	9.51	10	7.0	200	30.1	13.3
SMAJ7.0A	AM	WM	7.78	8.60	10	7.0	200	33.3	12.0
SMAJ7.5	AN	WN	8.33	10.2	1.0	7.5	100	28.0	14.3
SMAJ7.5A	AP	WP	8.33	9.21	1.0	7.5	100	31.0	12.9
SMAJ8.0	AQ	WQ	8.89	10.9	1.0	8.0	50	26.7	15.0
SMAJ8.0A	AR	WR	8.89	9.83	1.0	8.0	50	29.4	13.6
SMAJ8.5	AS	WS	9.44	11.5	1.0	8.5	10	25.2	15.9
SMAJ8.5A	AT	WT	9.44	10.4	1.0	8.5	10	27.8	14.4
SMAJ9.0	AU	WU	10.0	12.2	1.0	9.0	5.0	23.7	16.9
SMAJ9.0A	AV	WV	10.0	11.1	1.0	9.0	5.0	26.0	15.4
SMAJ10	AW	WW	11.1	13.6	1.0	10	1.0	21.3	18.8
SMAJ10A	AX	WX	11.1	12.3	1.0	10	1.0	23.5	17.0
SMAJ11	AY	WY	12.2	14.9	1.0	11	1.0	19.9	20.1
SMAJ11A	AZ	WZ	12.2	13.5	1.0	11	1.0	22.0	18.2
SMAJ12	BD	XD	13.3	16.3	1.0	12	1.0	18.2	22.0
SMAJ12A	BE	XE	13.3	14.7	1.0	12	1.0	20.1	19.9
SMAJ13	BF	XF	14.4	17.6	1.0	13	1.0	16.8	23.8
SMAJ13A	BG	XG	14.4	15.9	1.0	13	1.0	18.6	21.5
SMAJ14	BH	XH	15.6	19.1	1.0	14	1.0	15.5	25.8
SMAJ14A	BK	XK	15.6	17.2	1.0	14	1.0	17.2	23.2
SMAJ15	BL	XL	16.7	20.4	1.0	15	1.0	14.9	26.9
SMAJ15A	BM	XM	16.7	18.5	1.0	15	1.0	16.4	24.4
SMAJ16	BN	XN	17.8	21.8	1.0	16	1.0	13.9	28.8
SMAJ16A	BP	XP	17.8	19.7	1.0	16	1.0	15.4	26.0
SMAJ17	BQ	XQ	18.9	23.1	1.0	17	1.0	13.1	30.5
SMAJ17A	BR	XR	18.9	20.9	1.0	17	1.0	14.5	27.6
SMAJ18	BS	XS	20.0	24.4	1.0	18	1.0	12.4	32.2
SMAJ18A	BT	XT	20.0	22.1	1.0	18	1.0	13.7	29.2
SMAJ20	BU	XU	22.2	27.1	1.0	20	1.0	11.2	35.8
SMAJ20A	BV	XV	22.2	24.5	1.0	20	1.0	12.3	32.4
SMAJ22	BW	XW	24.4	29.8	1.0	22	1.0	10.2	39.4
SMAJ22A	BX	XX	24.4	26.9	1.0	22	1.0	11.3	35.5
SMAJ24	BY	XY	26.7	32.6	1.0	24	1.0	9.3	43.0
SMAJ24A	BZ	XZ	26.7	29.5	1.0	24	1.0	10.3	38.9
SMAJ26	CD	YD	28.9	35.3	1.0	26	1.0	8.6	46.6
SMAJ26A	CE	YE	28.9	31.9	1.0	26	1.0	9.5	42.1
SMAJ28	CF	YF	31.1	38.0	1.0	28	1.0	8.0	50.0
SMAJ28A	CG	YG	31.1	34.4	1.0	28	1.0	8.8	45.4
SMAJ30	CH	YH	33.3	40.7	1.0	30	1.0	7.5	53.5
SMAJ30A	CK	YK	33.3	36.8	1.0	30	1.0	8.3	48.4

- Notes:**
- $V_{(BR)}$ measured after I_T applied for 300us square wave pulse or equivalent
 - Surge current waveform per Fig. 3 and derate per Fig. 2
 - For bi-directional types having V_{WM} of 10 Volts and less, the I_D limit is doubled
 - All terms and symbols are consistent with ANSI/IEEE C62.35
 - For the bidirectional SMAJ5.0CA, the maximum $V_{(BR)}$ is 7.25V.

Electrical Characteristics

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

Device type	Device marking code		Breakdown voltage $V_{(BR)}$ (Volts) ¹		Test current at I_L (mA)	Stand-off voltage V_{WM} (Volts)	Maximum reverse leakage at V_{WM} $I_D^{(1)}$ (uA)	Maximum peak pulse surge current I_{TSM} ³ (A)	Maximum clamping voltage at I_{TSM} V_C (Volts)
	UNI	B	Min	Max					
SMA J33	CL	YL	367	44.9	10	33	10	6.8	59.0
SMA J33A	CM	YM	367	40.6	10	33	10	7.5	53.3
SMA J36	CN	YN	40.0	48.9	10	36	10	6.2	64.3
SMA J36A	CP	YP	40.0	44.2	10	36	10	6.9	58.1
SMA J40	CQ	YQ	44.4	54.3	10	40	10	5.6	71.4
SMA J40A	CR	YR	44.4	49.1	10	40	10	6.2	64.5
SMA J43	CS	YS	47.8	58.4	10	43	10	5.2	76.7
SMA J43A	CT	YT	47.8	52.8	10	43	10	5.8	69.4
SMA J45	CU	YU	50.0	61.1	10	45	10	5.0	80.3
SMA J45A	CV	YV	50.0	55.3	10	45	10	5.5	72.7
SMA J48	CW	YW	53.3	65.1	10	48	10	4.7	85.5
SMA J48A	CX	YX	53.3	58.9	10	48	10	5.2	77.4
SMA J51	CY	YY	56.7	69.3	10	51	10	4.4	91.1
SMA J51A	CZ	YZ	56.7	62.7	10	51	10	4.9	82.4
SMA J54	RD	ZD	60.0	73.3	10	54	10	4.2	96.3
SMA J54A	RE	ZE	60.0	66.3	10	54	10	4.6	87.1
SMA J58	RF	ZF	64.4	78.7	10	58	10	3.9	103
SMA J58A	RG	ZG	64.4	71.2	10	58	10	4.3	93.6
SMA J60	RH	ZH	66.7	81.5	10	60	10	3.7	107
SMA J60A	RK	ZK	66.7	73.7	10	60	10	4.1	96.8
SMA J64	RL	ZL	71.1	86.9	10	64	10	3.5	114
SMA J64A	RM	ZM	71.1	78.6	10	64	10	3.9	103
SMA J70	RN	ZN	77.8	95.1	10	70	10	3.2	125
SMA J70A	RP	ZP	77.8	86.0	10	70	10	3.5	113
SMA J75	RQ	ZQ	83.3	102	10	75	10	3.0	134
SMA J75A	RR	ZR	83.3	92.1	10	75	10	3.3	121
SMA J78	RS	ZS	86.7	106	10	78	10	2.9	139
SMA J78A	RT	ZT	86.7	95.8	10	78	10	3.2	126
SMA J85	RU	ZU	94.4	115	10	85	10	2.0	151
SMA J85A	RV	ZV	94.4	104	10	85	10	2.2	137
SMA J90	RW	ZW	100	122	10	90	10	1.9	160
SMA J90A	RX	ZX	100	111	10	90	10	2.1	146
SMA J100	RY	ZY	111	136	10	100	10	1.7	179
SMA J100A	RZ	ZZ	111	123	10	100	10	1.9	162
SMA J110	SD	VD	122	149	10	110	10	1.5	196
SMA J110A	SE	VE	122	135	10	110	10	1.7	177
SMA J120	SF	VF	133	163	10	120	10	1.4	214
SMA J120A	SG	VG	133	147	10	120	10	1.6	193
SMA J130	SH	VH	144	176	10	130	10	1.3	231
SMA J130A	SK	VK	144	159	10	130	10	1.4	209
SMA J150	SL	VL	167	204	10	150	10	1.1	268
SMA J150A	SM	VM	167	185	10	150	10	1.2	243
SMA J160	SN	VN	178	218	10	160	10	1.0	287
SMA J160A	SP	VP	178	197	10	160	10	1.2	259
SMA J170	SQ	VQ	189	231	10	170	10	0.99	304
SMA J170A	SR	VR	189	209	10	170	10	1.09	275
SMA J180A	ST	VT	201	222	10	180	10	1.4	292
SMA J200A	SV	VV	224	247	10	200	10	1.2	324
SMA J220A	SX	VX	246	272	10	220	10	1.1	356
SMA J250A	SZ	VZ	279	309	10	250	10	1.0	405
SMA J300A	TE	UE	335	371	10	300	10	0.8	486
SMA J350A	TG	UG	391	432	10	350	10	0.7	567
SMA J400A	TK	UK	447	494	10	400	10	0.6	648
SMA J440A	TM	UM	492	543	10	440	10	0.6	713

- Notes:
1. $V_{(BR)}$ measured after I_L applied for 300us square wave pulse or equivalent
 2. Surge current waveform per Fig. 3 and derate per Fig. 2
 3. For bi-directional types having V_{WM} of 10 Volts and less, the I_L limit is doubled
 4. All terms and symbols are consistent with ANSI/IEEE C62.35
 5. For parts without A, the V_{BR} is +10%

RATINGS AND CHARACTERISTIC CURVES

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

