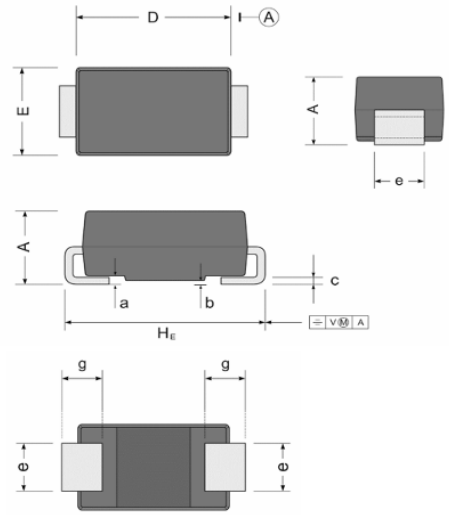
SMD Transient Voltage Suppressor Diodes

Primary characteristics		
Parameter	**Value**	**Unit**
V_R range nom.	5 to 180	V
Power rating	400	W

Features

- **SMA (DO-214AC)** case for easy automatic insertion.
- Pb-free and **RoHS** compliant
- Glass passivated junction
- Low inductance
- Plastic package has Underwriters Laboratory Flammability
- Terminals: Solderable per MIL-STD-750, Method 2026

Case dimensions



SMA (DO-214AC)

Unit	A	D	E	H_E	c	e	g	b	a
MIN	1.9	4.0	2.5	4.7	0.15	1.3	0.9	0.05	0.3
MAX	2.45	4.5	2.8	5.2	0.31	1.8	1.5	0.2	

Part numbering system		
SMAJ	**24**	**A**
↓	↓	↓
Series code	Reverse standoff voltage marking (see: Characteristics table)	Unidirectional: A Bidirectional: CA

Absolute maximum ratings and general electrical characteristics (T_a = 25°C)				
Parameter		**Symbol**	**Value**	**Unit**
Peak pulse power dissipation [1) 2)]		P_{PPM}	400	W
Peak forward surge current [3) 4)]		I_{FSM} (UNI)	40	A
Peak pulse current on 10/1000 µs waveform [1)]		I_{PPM}	Characteristics table	A
ESD voltage per IEC6100-4-2	Contact	V_{ESD1}	±30	kV
	Air	V_{ESD2}	±30	
Operating junction temperature and storage temperature range		T_j, T_s	-55 ~ 150	°C

Notes:
1) Non-repetitive current pulse
2) Mounted on 5mm² copper pads to each terminal
3) Peak forward surge current : 8.3ms single half sine-wave superimposed on rated load (JEDEC method)
4) Peak pulse power waveform is 10/1000µS

Characteristics table (T_a = 25°C)

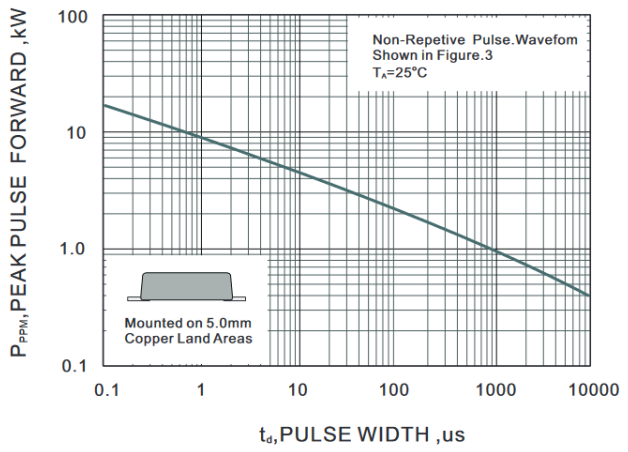
Part number (UNI)	Part number (BI)	Marking		Reverse stand off voltage	Breakdown voltage @I_T		Test current	Maximum clamping voltage @I_{PP}	Maximum peak pulse current	Maximum reverse leakage @V_R
					V_{BR}					
				V_R	MIN	MAX	I_T	V_C	I_{PP}	I_R
		UNI	BI	V	V	V	mA	V	A	µA
SMAJ5.0A	SMAJ5.0CA	AE	WE	5.0	6.40	7.00	10	9.2	43.5	800
SMAJ6.0A	SMAJ6.0CA	AG	WG	6.0	6.67	7.37	10	10.3	38.8	800
SMAJ6.5A	SMAJ6.5CA	AK	WK	6.5	7.22	7.98	10	11.2	35.7	500
SMAJ7.0A	SMAJ7.0CA	AM	WM	7.0	7.78	8.60	10	12.0	33.3	200
SMAJ7.5A	SMAJ7.5CA	AP	WP	7.5	8.33	9.21	1	12.9	31.0	100
SMAJ8.0A	SMAJ8.0CA	AR	WR	8.0	8.89	9.83	1	13.6	29.4	50
SMAJ8.5A	SMAJ8.5CA	AT	WT	8.5	9.44	10.4	1	14.4	27.8	20
SMAJ9.0A	SMAJ9.0CA	AV	WV	9.0	10.0	11.1	1	15.4	26.0	10
SMAJ10A	SMAJ10CA	AX	WX	10	11.1	12.3	1	17.0	23.5	5
SMAJ11A	SMAJ11CA	AZ	WZ	11	12.2	13.5	1	18.2	22.0	1
SMAJ12A	SMAJ12CA	BE	XE	12	13.3	14.7	1	19.9	20.1	1
SMAJ13A	SMAJ13CA	BG	XG	13	14.4	15.9	1	21.5	18.6	1
SMAJ14A	SMAJ14CA	BK	XK	14	15.6	17.2	1	23.2	17.2	1
SMAJ15A	SMAJ15CA	BM	XM	15	16.7	18.5	1	24.4	16.4	1
SMAJ16A	SMAJ16CA	BP	XP	16	17.8	19.7	1	26.0	15.4	1
SMAJ17A	SMAJ17CA	BR	XR	17	18.9	20.9	1	27.6	14.5	1
SMAJ18A	SMAJ18CA	BT	XT	18	20.0	22.1	1	29.2	13.7	1
SMAJ20A	SMAJ20CA	BV	XV	20	22.2	24.5	1	32.4	12.3	1
SMAJ22A	SMAJ22CA	BX	XX	22	24.4	26.9	1	35.5	11.3	1
SMAJ24A	SMAJ24CA	BZ	XZ	24	26.7	29.5	1	38.9	10.3	1
SMAJ26A	SMAJ26CA	CE	YE	26	28.9	31.9	1	42.1	9.5	1
SMAJ28A	SMAJ28CA	CG	YG	28	31.1	34.4	1	45.4	8.8	1
SMAJ30A	SMAJ30CA	CK	YK	30	33.3	36.8	1	48.4	8.3	1
SMAJ33A	SMAJ33CA	CM	YM	33	36.7	40.6	1	53.3	7.5	1
SMAJ36A	SMAJ36CA	CP	YP	36	40.0	44.2	1	58.1	6.9	1
SMAJ40A	SMAJ40CA	CR	YR	40	44.4	49.1	1	64.5	6.2	1
SMAJ43A	SMAJ43CA	CT	YT	43	47.8	52.8	1	69.4	5.8	1
SMAJ45A	SMAJ45CA	CV	YV	45	50.0	55.3	1	72.7	5.5	1
SMAJ48A	SMAJ48CA	CX	YX	48	53.3	58.9	1	77.4	5.2	1
SMAJ51A	SMAJ51CA	CZ	YZ	51	56.7	62.7	1	82.4	4.9	1
SMAJ54A	SMAJ54CA	RE	ZE	54	60.0	66.3	1	87.1	4.6	1
SMAJ58A	SMAJ58CA	RG	ZG	58	64.4	71.2	1	93.6	4.3	1
SMAJ60A	SMAJ60CA	RK	ZK	60	66.7	73.7	1	96.8	4.1	1
SMAJ64A	SMAJ64CA	RM	ZM	64	71.1	78.6	1	103	3.9	1
SMAJ70A	SMAJ70CA	RP	ZP	70	77.8	86.0	1	113	3.5	1
SMAJ75A	SMAJ75CA	RR	ZR	75	83.3	92.1	1	121	3.3	1
SMAJ78A	SMAJ78CA	RT	ZT	78	86.7	95.8	1	126	3.2	1
SMAJ85A	SMAJ85CA	RV	ZV	85	94.4	104	1	137	2.9	1

Characteristics table (T_a = 25°C)

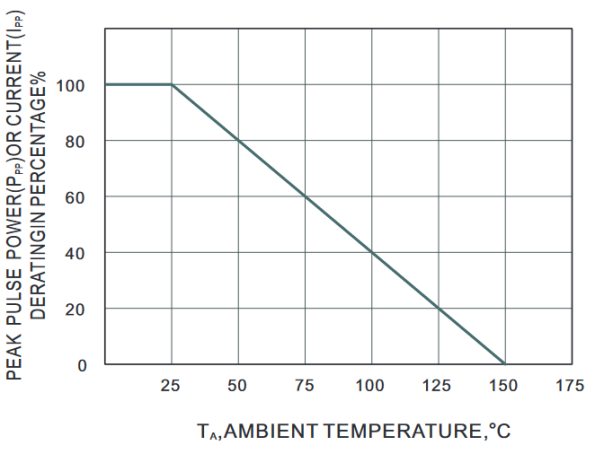
Part number (UNI)	Part number (BI)	Marking		Reverse stand off voltage	Breakdown voltage @I_T		Test current	Maximum clamping voltage @I_{PP}	Maximum peak pulse current	Maximum reverse leakage @V_R
					V_{BR}					
				V_R	MIN	MAX	I_T	V_C	I_{PP}	I_R
		UNI	BI	V	V	V	mA	V	A	µA
SMAJ90A	SMAJ90CA	RX	ZX	90	100	111	1	146	2.7	1
SMAJ100A	SMAJ100CA	RZ	ZZ	100	111	123	1	162	2.5	1
SMAJ110A	SMAJ110CA	SE	VE	110	122	135	1	177	2.3	1
SMAJ120A	SMAJ120CA	SG	VG	120	133	147	1	193	2.1	1
SMAJ130A	SMAJ130CA	SK	VK	130	144	159	1	209	1.9	1
SMAJ150A	SMAJ150CA	SM	VM	150	167	185	1	243	1.6	1
SMAJ160A	SMAJ160CA	SP	VP	160	178	197	1	259	1.5	1
SMAJ170A	SMAJ170CA	SR	VR	170	189	209	1	275	1.5	1
SMAJ180A	SMAJ180CA	ST	VT	180	201	222	1	292	1.4	1

For bidirectional type having V_{RWM} of 10 volts and less, the I_R limit is double.
For parts without A (V_{BR} is ± 10% and V_C is 5% higher than with A parts).

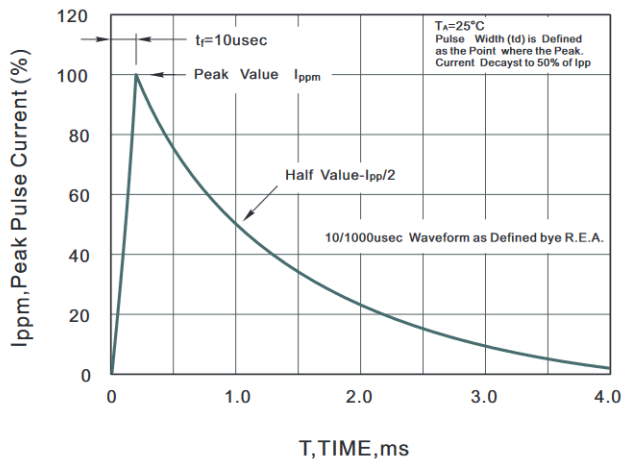
Peak pulse power rating curve



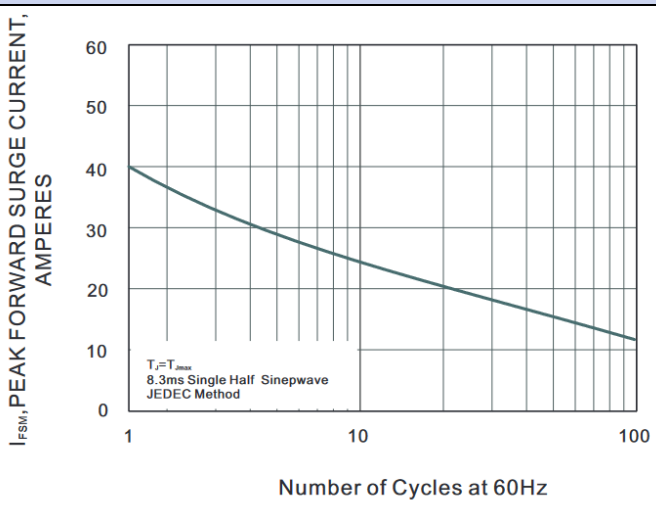
Forward current derating curve

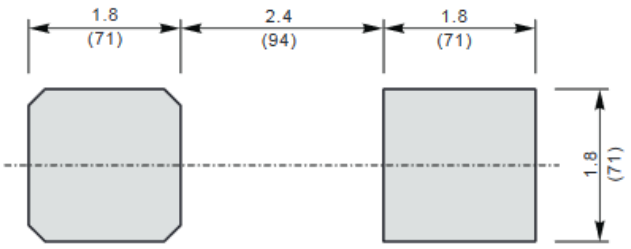


Peak pulse power rating curve



Forward current derating curve



Suggested soldering pad layout

SMA (DO-214AC)

Ordering information		
Part Number	**Package**	**Shipping Quantity**
SMAJ5.0A(CA) ~ SMAJ180A(CA)	SMA (DO-214AC)	**5 000 pcs / reel**

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