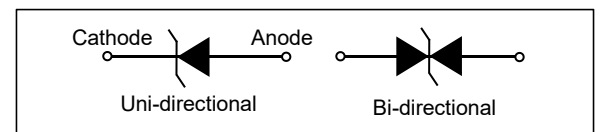
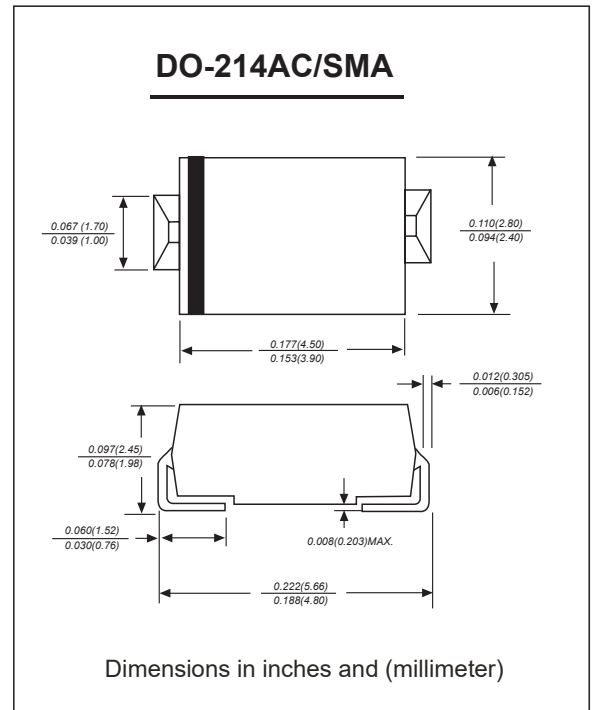


Features

- Low profile package.
- Low inductance.
- Excellent clamping capability.
- 600W peak pulse power capability at 10/1000 μ s waveform.
- Typical IR less than 1 μ A above 10V.
- Fast response time: typically less than 1.0ps from 0V to VBR min.
- IEC61000-4-2 (ESD) $\pm$ 30kV (air), $\pm$ 30kV (contact)

Mechanical Data

- High temperature to reflow soldering: 260°C/40s at terminals.
- Plastic package has underwriters laboratory flammability 94V-0.
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C
- Terminal: solder plated, solderable per J-STD-002.
- Typical IR less than 1 μ A above 10V.
- For surface mounted applications in order to optimize board space



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

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 μ s waveform ⁽¹⁾	P _{PP}	600	W
Peak pulse current with a 10/1000 μ s waveform ⁽¹⁾	I _{PP}	See Next Table	A
Power dissipation on infinite heatsink at T _L = 75 °C	P _D	5.0	W
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only ⁽²⁾	I _{FSM}	60	A
Maximum instantaneous forward voltage at 50A for unidirectional only	V _F	5.0	V
Operating junction and storage temperature range	T _J , T _{STG}	- 55 to +150	°C

Note:

(1)Non-repetitive current pulse per Fig.5 and derated above T_A= 25 °C per Fig.1

(2)Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$)

Part Number		Marking		V_R	$I_R@V_R$	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	$I_{PP}^{①}$
Uni-Polar	Bi-Polar	Uni	Bi	V	max(μA)	min(V)	max(V)	mA	max(V)	A
SM6AJ5.0A	SM6AJ5.0CA	KE	AE	5.0	120	6.40	7.00	10	9.2	65.2
SM6AJ6.0A	SM6AJ6.0CA	KG	AG	6.0	120	6.67	7.37	10	10.3	58.3
SM6AJ6.5A	SM6AJ6.5CA	KK	AK	6.5	120	7.22	7.98	10	11.2	53.6
SM6AJ7.0A	SM6AJ7.0CA	KM	AM	7.0	50	7.78	8.60	10	12.0	50.0
SM6AJ7.5A	SM6AJ7.5CA	KP	AP	7.5	50	8.33	9.21	1	12.9	46.5
SM6AJ8.0A	SM6AJ8.0CA	KR	AR	8.0	20	8.89	9.83	1	13.6	44.1
SM6AJ8.5A	SM6AJ8.5CA	KT	AT	8.5	10	9.44	10.40	1	14.4	41.7
SM6AJ9.0A	SM6AJ9.0CA	KV	AV	9.0	5	10.00	11.10	1	15.4	39.0
SM6AJ10A	SM6AJ10CA	KX	AX	10.0	2	11.10	12.30	1	17.0	35.3
SM6AJ11A	SM6AJ11CA	KZ	AZ	11.0	1	12.20	13.50	1	18.2	33.0
SM6AJ12A	SM6AJ12CA	LE	BE	12.0	1	13.30	14.70	1	19.9	30.2
SM6AJ13A	SM6AJ13CA	LG	BG	13.0	1	14.40	15.90	1	21.5	27.9
SM6AJ14A	SM6AJ14CA	LK	BK	14.0	1	15.60	17.20	1	23.2	25.9
SM6AJ15A	SM6AJ15CA	LM	BM	15.0	1	16.70	18.50	1	24.4	24.6
SM6AJ16A	SM6AJ16CA	LP	BP	16.0	1	17.80	19.70	1	26.0	23.1
SM6AJ17A	SM6AJ17CA	LR	BR	17.0	1	18.90	20.90	1	27.6	21.8
SM6AJ18A	SM6AJ18CA	LT	BT	18.0	1	20.00	22.10	1	29.2	20.6
SM6AJ20A	SM6AJ20CA	LV	BV	20.0	1	22.20	24.50	1	32.4	18.6
SM6AJ22A	SM6AJ22CA	LX	BX	22.0	1	24.40	26.90	1	35.5	16.9
SM6AJ24A	SM6AJ24CA	LZ	BZ	24.0	1	26.70	29.50	1	38.9	15.4
SM6AJ26A	SM6AJ26CA	ME	CE	26.0	1	28.90	31.90	1	42.1	14.3

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, continued)

Part Number		Marking		V_R	$I_R@V_R$	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	$I_{PP}^{①}$
Uni-polar	Bi-polar	Uni	Bi	V	max(μA)	min(V)	max(V)	mA	V	A
SM6AJ28A	SM6AJ28CA	MG	CG	28.0	1	31.10	34.40	1	45.4	13.2
SM6AJ30A	SM6AJ30CA	MK	CK	30.0	1	33.30	36.80	1	48.4	12.4
SM6AJ33A	SM6AJ33CA	MM	CM	33.0	1	36.70	40.60	1	53.3	11.3
SM6AJ36A	SM6AJ36CA	MP	CP	36.0	1	40.00	44.20	1	58.1	10.4
SM6AJ40A	SM6AJ40CA	MR	CR	40.0	1	44.40	49.10	1	64.5	9.3
SM6AJ43A	SM6AJ43CA	MT	CT	43.0	1	47.80	52.80	1	69.4	8.7
SM6AJ45A	SM6AJ45CA	MV	CV	45.0	1	50.00	55.30	1	72.7	8.3
SM6AJ48A	SM6AJ48CA	MX	CX	48.0	1	53.30	58.90	1	77.4	7.8
SM6AJ51A	SM6AJ51CA	MZ	CZ	51.0	1	56.70	62.70	1	82.4	7.3
SM6AJ54A	SM6AJ54CA	NE	DE	54.0	1	60.00	66.30	1	87.1	6.9
SM6AJ58A	SM6AJ58CA	NG	DG	58.0	1	64.40	71.20	1	93.6	6.4
SM6AJ60A	SM6AJ60CA	NK	DK	60.0	1	66.70	73.70	1	96.8	6.2
SM6AJ64A	SM6AJ64CA	NM	DM	64.0	1	71.10	78.60	1	103.0	5.8
SM6AJ70A	SM6AJ70CA	NP	DP	70.0	1	77.80	86.00	1	113.0	5.3
SM6AJ75A	SM6AJ75CA	NR	DR	75.0	1	83.30	92.10	1	121.0	5.0
SM6AJ78A	SM6AJ78CA	NT	DT	78.0	1	86.70	95.80	1	126.0	4.8
SM6AJ85A	SM6AJ85CA	NV	DV	85.0	1	94.4	104.0	1	137.0	4.4
SM6AJ100A	SM6AJ100CA	NZ	DZ	100.0	1	111.0	123.0	1	162.0	3.7
SM6AJ110A	SM6AJ110CA	PE	EE	110.0	1	122.0	135.0	1	177.0	3.4
SM6AJ120A	SM6AJ120CA	PG	EG	120.0	1	133.0	147.0	1	193.0	3.1

 ① Surge waveform: 10/1000 μs
 V_R : Stand-off voltage -- Maximum voltage that can be applied

 V_{BR} : Breakdown voltage

 V_C : Clamping voltage -- Peak voltage measured across the suppressor at a specified I_{PP}
 I_R : Reverse leakage current

ORDERING INFORMATION

SM6AJ	xx	C	A
600W SMA Series	V_R Voltage	C:Bi-directional	5% V_{BR} Voltage tolerance

RATINGS AND V-I CHARACTERISTICS CURVES ($T_A=25^\circ\text{C}$, unless otherwise noted)

FIG.1:V- I curve characteristics (Uni-directional)

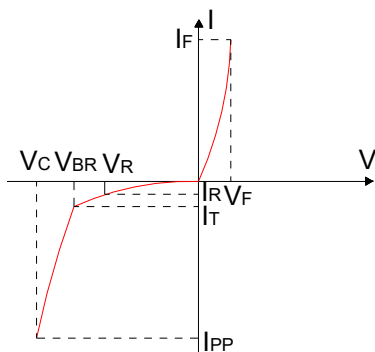


FIG.2:V- I curve characteristics (Bi-directional)

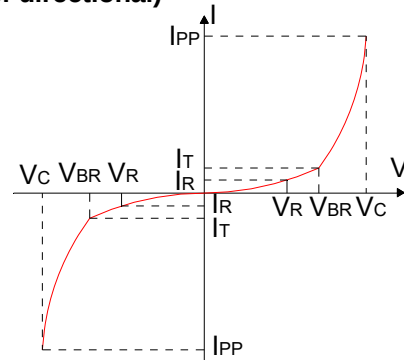


FIG.3: Pulse waveform

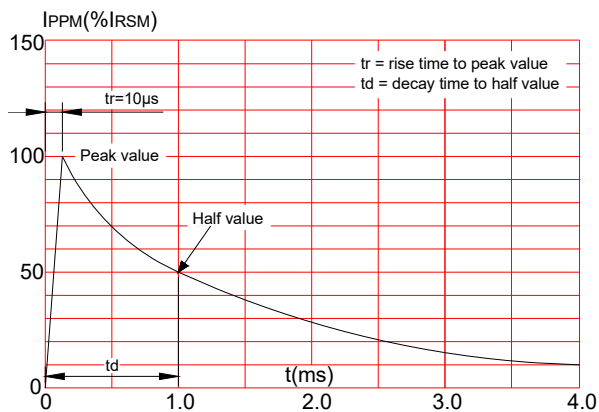
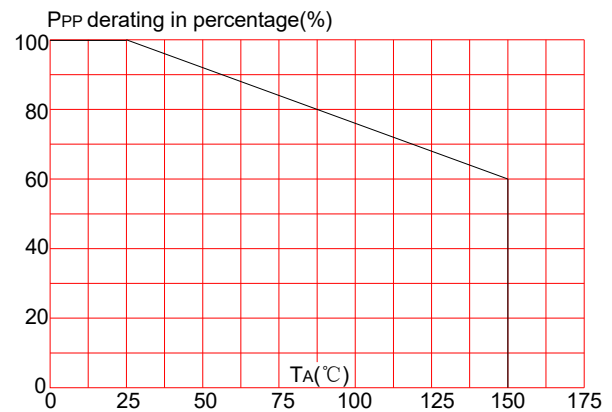
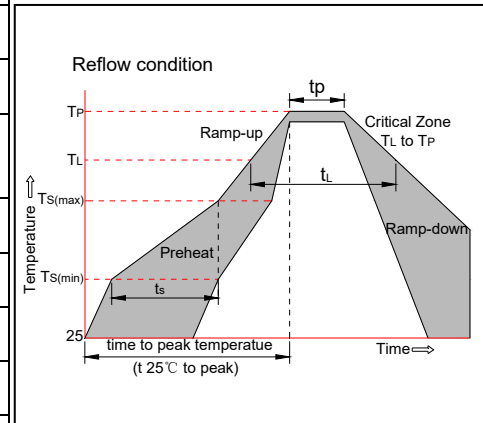


FIG.4: Pulse derating curve

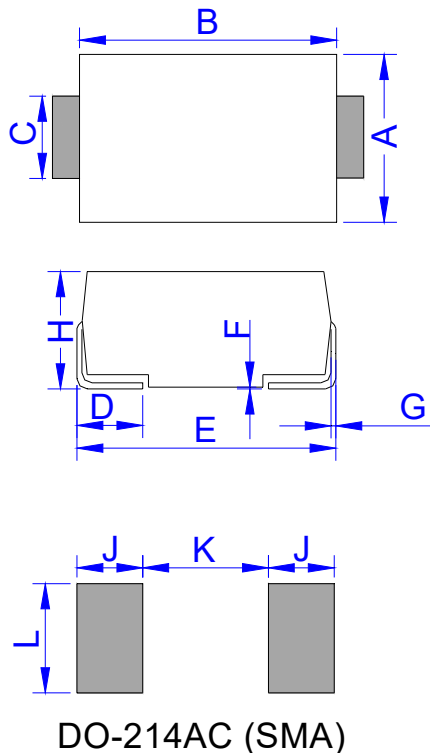


SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquidus)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		20-40secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C

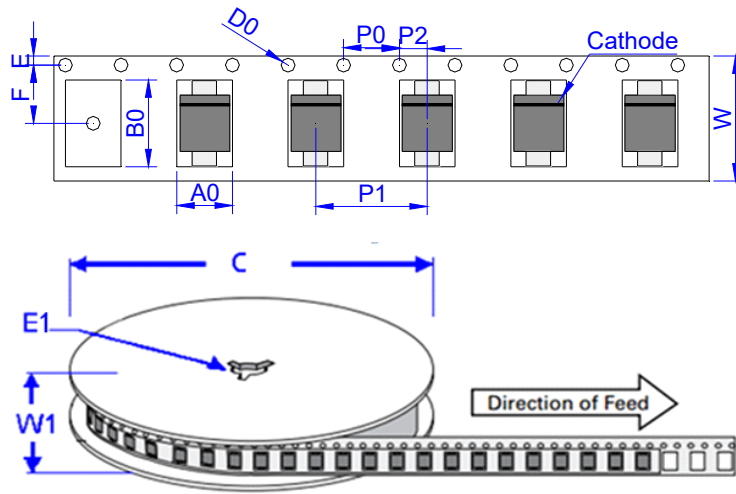


PACKAGE MECHANICAL DATA



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.60	3.00	0.102	0.118
B	4.15	4.65	0.163	0.183
C	1.25	1.65	0.049	0.065
D	0.95	1.52	0.037	0.060
E	4.90	5.30	0.193	0.209
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.00	2.44	0.079	0.096
J	2.00		0.079	
K		2.30		0.091
L	1.80		0.071	

TAPE AND REEL SPECIFICATION-SMA



Ref.	Dimensions	
	Millimeters	Inches
A0	2.79 ± 0.3	0.110 ± 0.012
B0	5.33 ± 0.3	0.210 ± 0.012
C	330.0	13.0
D0	1.55 ± 0.1	0.061 ± 0.004
E	1.75 ± 0.2	0.069 ± 0.008
E1	13.3 ± 0.3	0.524 ± 0.012
F	5.5 ± 0.2	0.217 ± 0.008
P0	4.00 ± 0.2	0.157 ± 0.008
P1	4.00 ± 0.2	0.157 ± 0.008
P2	2.00 ± 0.2	0.079 ± 0.008
W	12.0 ± 0.2	0.472 ± 0.008
W1	15.7 ± 2.0	0.618 ± 0.079

PART No.	UNIT WEIGHT (g/PCS) typ.	REEL (PCS)	PER CARTON (PCS)	DESCRIPTION
SM6AJxxA/CA	0.068	7,500	120,000	13 inch reel pack

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