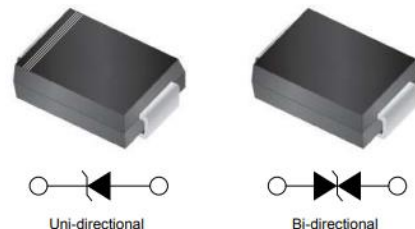


SMD Type 600 W

■ Features

1. Glass passivated chip
2. 600W peak pulse power capability at 10/1000 μ s waveform, repetition rate (duty cycle): 0.01%
3. Excellent clamping capability
4. Very fast response time
5. Low clamping voltage
6. Low leakage current
7. Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C
8. JESD22-A114-B ESD Voltage: HBM 15KV
9. JEDEC EIA/JESD22-C101F ESD Voltage: CDM 500V
10. JEDEC EIA/JESD22-A115 ESD Voltage: MM 400V
11. ESD-immunity acc. IEC 61000-4-2 \pm 30kV(contact), \pm 30kV(air)
12. Halogen free and RoHS compliant



■ Recommended Applications

1. Computers
2. Telecom system
3. Industrial equipment
4. Consumer electronic applications
5. Other VCC bus and I/O interfaces

■ Mechanical Data

1. Case: Molded plastic, SMA / DO-214AC
2. Epoxy: UL 94V-0 rate flame retardant
3. Terminals: Solderable per MIL-STD-750, method 2026
4. Polarity: Color band denotes cathode end
5. Mounting Position: Any

■ Part Number Code

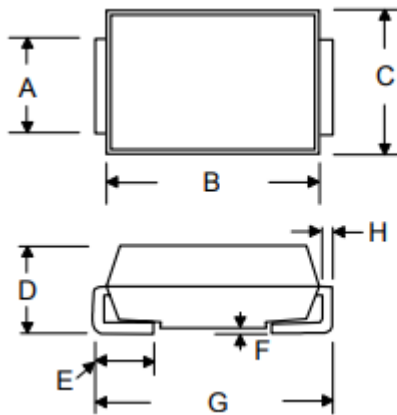
S	M	A	6	J	5	.	0	C	A
1	2	3	4	5	6	7	8	9	10
Product Series				Reverse Stand off Voltage (V_{RWM})				Type Code	
SMA6J THINKING Transient Voltage Suppression Diodes SMA6J Series				5.0 5V 70 70V 120 120V				A Uni-directional, 5% V_{BR} Voltage Tolerance CA Bi-directional, 5% V_{BR} Voltage Tolerance	

TVS Diode: SMA6J Series

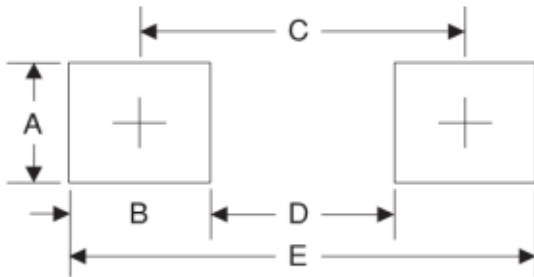
SMD Type 600 W



Structures and Dimensions



Symbol	Dimensions in millimeters	
	Min	Max
A	1.30	1.70
B	3.90	4.50
C	2.40	2.80
D	2.00	2.50
E	0.76	1.52
F	0.10	0.20
G	4.80	5.30
H	0.15	0.31



Symbol	Unit (mm)	Unit (inch)
A	1.68	0.066
B	1.52	0.060
C	3.90	0.154
D	2.41	0.095
E	5.45	0.215

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

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 μs waveform (Note 1,2)	P_{PPM}	600	W
Peak pulse current with 10/1000 μs waveform (Note 1)	I_{PPM}	See next table	A
Peak forward surge current, 8.3 ms single half sine-wave (Note 3)	I_{FSM}	100	A
Power dissipation on infinite heatsink at $T_L=75^\circ\text{C}$	P_D	5	W
Typical thermal resistance junction to ambient	$R_{\theta JA}$	100	$^\circ\text{C/W}$
Typical thermal resistance junction to lead	$R_{\theta JL}$	20	$^\circ\text{C/W}$
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

Note:

1. Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^\circ\text{C}$ per Fig. 2.
2. Mounted on 5.0 x 5.0mm copper pad to each terminal.
3. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.

TVS Diode: SMA6J Series



SMD Type 600 W

■ Electrical Characteristics (T_A=25°C unless otherwise noted)

Part No. (Uni)	Part No. (Bi)	Reverse Stand off Voltage V _{RWM} (V)	Breakage Voltage V _{BR} @ I _T		Test Current I _T (mA)	Maximum Clamping Voltage V _C @ I _{pp} V _C (V)	Maximum Peak Pulse Current I _{pp} (A)	Maximum Reverse Leakage I _R @ V _{RWM} I _R (μA)	Marking Code	
			Min(V)	Max(V)					Uni	Bi
SMA6J5.0A	SMA6J5.0CA	5	6.4	7	10	9.2	65.2	800	KE	AE
SMA6J6.0A	SMA6J6.0CA	6	6.7	7.4	10	10.3	58.3	800	KG	AG
SMA6J6.5A	SMA6J6.5CA	6.5	7.2	8	10	11.2	53.57	500	KK	AK
SMA6J7.0A	SMA6J7.0CA	7	7.8	8.6	10	12	50	200	KM	AM
SMA6J7.5A	SMA6J7.5CA	7.5	8.3	9.2	1	12.9	46.5	100	KP	AP
SMA6J8.0A	SMA6J8.0CA	8	8.9	9.8	1	13.6	44.1	50	KR	AR
SMA6J8.5A	SMA6J8.5CA	8.5	9.4	10.4	1	14.4	41.7	10	KT	AT
SMA6J9.0A	SMA6J9.0CA	9	10	11	1	15.4	39	5	KV	AV
SMA6J10A	SMA6J10CA	10	11.1	12.3	1	17	35.3	5	KX	AX
SMA6J11A	SMA6J11CA	11	12.2	13.5	1	18.2	33	1	KZ	AZ
SMA6J12A	SMA6J12CA	12	13.3	14.7	1	19.9	30.2	1	LE	BE
SMA6J13A	SMA6J13CA	13	14.4	15.9	1	21.5	28	1	LG	BG
SMA6J14A	SMA6J14CA	14	15.6	17.2	1	23.2	25.9	1	LK	BK
SMA6J15A	SMA6J15CA	15	16.7	18.5	1	24.4	24.6	1	LM	BM
SMA6J16A	SMA6J16CA	16	17.8	19.7	1	26	23.1	1	LP	BP
SMA6J17A	SMA6J17CA	17	18.9	20.9	1	27.6	21.8	1	LR	BR
SMA6J18A	SMA6J18CA	18	20	22.1	1	29.2	20.6	1	LT	BT
SMA6J19A	SMA6J19CA	19	21.1	23.3	1	30.8	19.5	1	LW	BW
SMA6J20A	SMA6J20CA	20	22.2	24.5	1	32.4	18.6	1	LV	BV
SMA6J22A	SMA6J22CA	22	24.4	26.9	1	35.5	16.9	1	LX	BX
SMA6J24A	SMA6J24CA	24	26.7	29.5	1	38.9	15.5	1	LZ	BZ
SMA6J26A	SMA6J26CA	26	28.9	31.9	1	42.1	14.3	1	ME	CE
SMA6J28A	SMA6J28CA	28	31.1	34.4	1	45.4	13.3	1	MG	CG
SMA6J30A	SMA6J30CA	30	33.3	36.8	1	48.4	12.4	1	MK	CK
SMA6J33A	SMA6J33CA	33	36.7	40.6	1	53.3	11.3	1	MM	CM
SMA6J36A	SMA6J36CA	36	40	44.2	1	58.1	10.4	1	MP	CP
SMA6J40A	SMA6J40CA	40	44.4	49.1	1	64.5	9.3	1	MR	CR
SMA6J43A	SMA6J43CA	43	47.8	52.8	1	69.4	8.7	1	MT	CT
SMA6J45A	SMA6J45CA	45	50	55.3	1	72.7	8.3	1	MV	CV
SMA6J48A	SMA6J48CA	48	53.3	58.9	1	77.4	7.8	1	MX	CX

TVS Diode: SMA6J Series

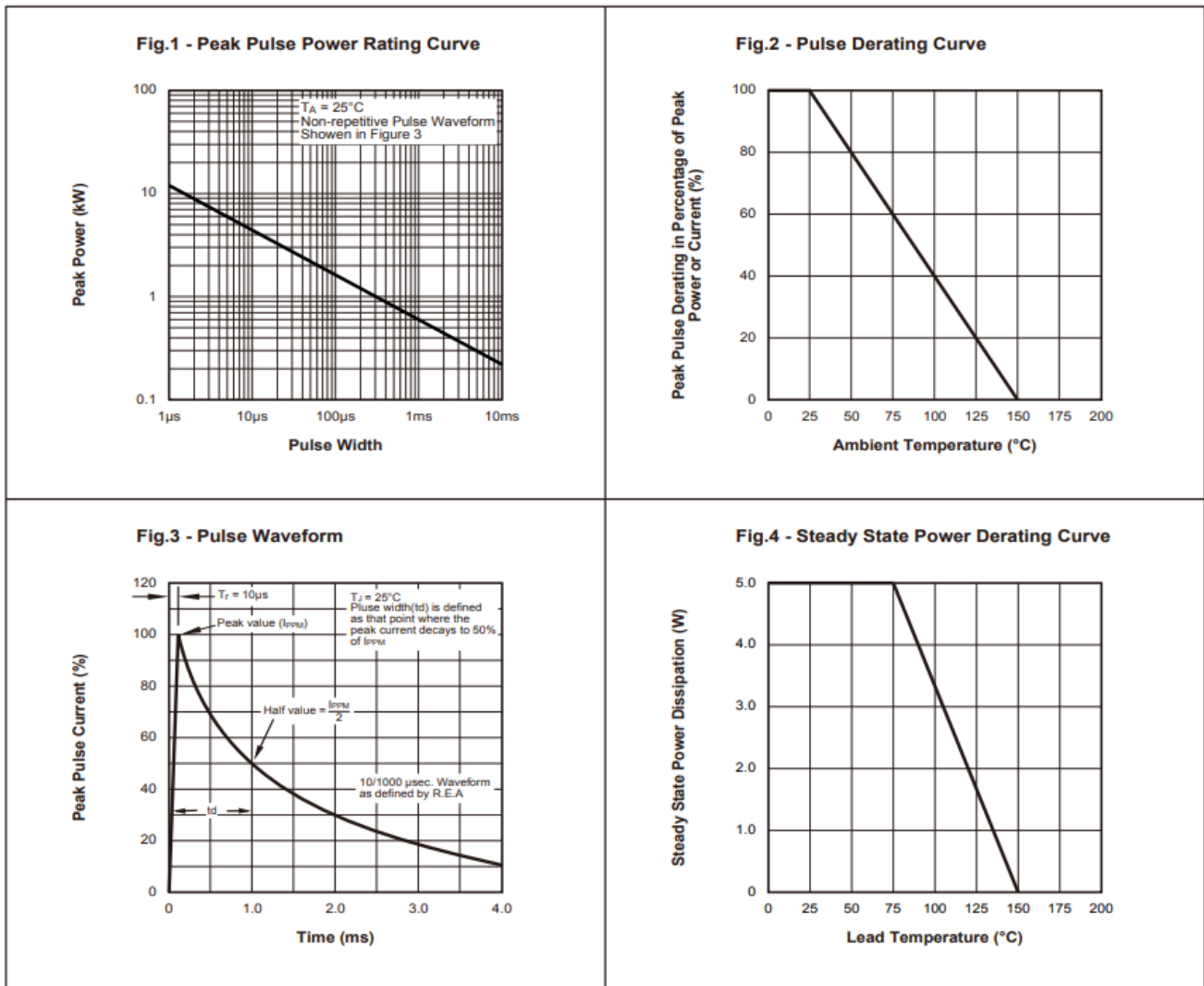


SMD Type 600 W

■ Electrical Characteristics (T_A=25°C unless otherwise noted)

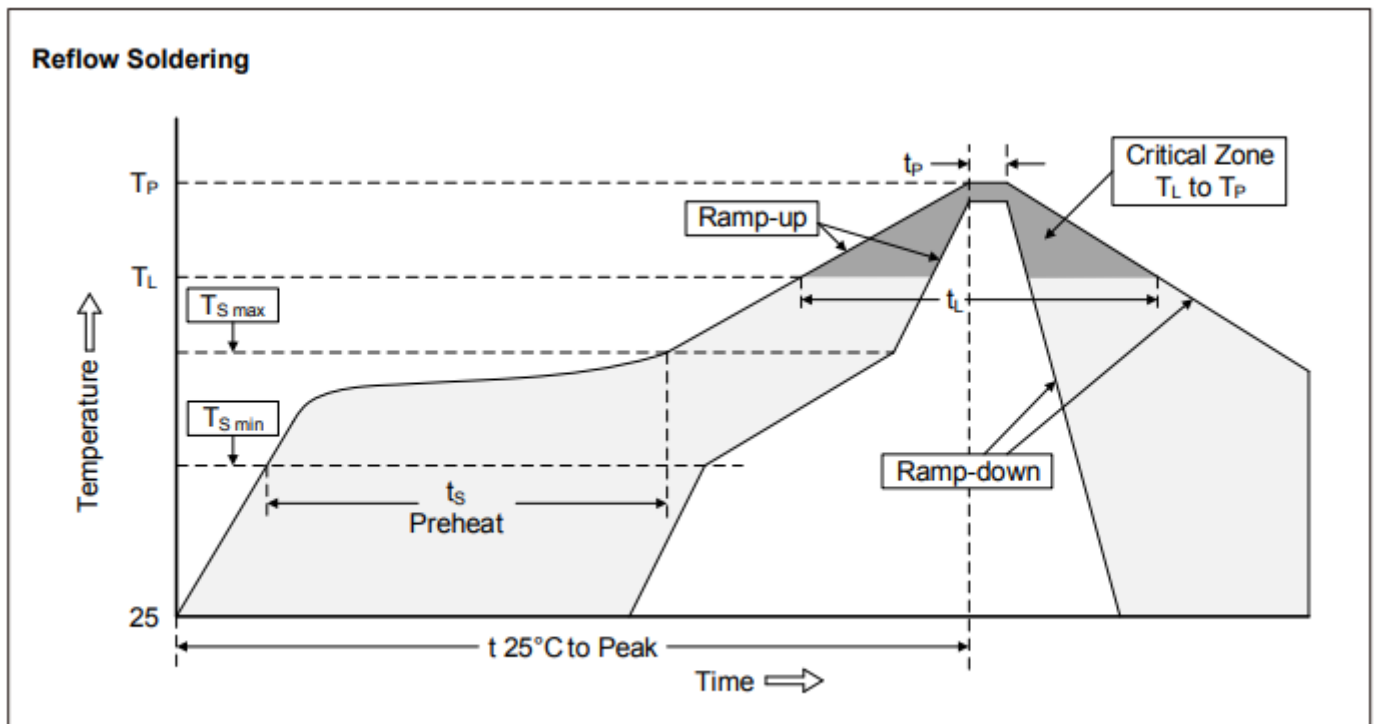
Part No. (Uni)	Part No. (Bi)	Reverse Stand off Voltage V _{RWM} (V)	Breakage Voltage V _{BR} @ I _T		Test Current I _T (mA)	Maximum Clamping Voltage V _C @ I _{pp}	Maximum Peak Pulse Current I _{pp} (A)	Maximum Reverse Leakage I _R @ V _{RWM}	Marking Code	
			Min(V)	Max(V)					Uni	Bi
SMA6J51A	SMA6J51CA	51	56.7	62.7	1	82.4	7.3	1	MZ	CZ
SMA6J54A	SMA6J54CA	54	60	66.3	1	87.1	6.9	1	NE	DE
SMA6J58A	SMA6J58CA	58	64.4	71.2	1	93.6	6.5	1	NG	DG
SMA6J60A	SMA6J60CA	60	66.7	73.7	1	96.8	6.2	1	NK	DK
SMA6J64A	SMA6J64CA	64	71.1	78.6	1	103	5.9	1	NM	DM
SMA6J70A	SMA6J70CA	70	77.8	86	1	113	5.3	1	NP	DP
SMA6J75A	SMA6J75CA	75	83.3	92.1	1	121	5	1	NR	DR
SMA6J78A	SMA6J78CA	78	86.7	95.8	1	126	4.8	1	NT	DT
SMA6J80A	SMA6J80CA	80	88.8	97.6	1	129.6	4.6	1	NW	DW
SMA6J85A	SMA6J85CA	85	94.4	104	1	137	4.4	1	NV	DV
SMA6J90A	SMA6J90CA	90	100	111	1	146	4.1	1	NX	DX
SMA6J100A	SMA6J100CA	100	111	123	1	162	3.7	1	NZ	DZ
SMA6J110A	SMA6J110CA	110	122	135	1	177	3.4	1	PE	FE
SMA6J120A	SMA6J120CA	120	133	147	1	193	3.2	1	PG	FG
SMA6J130A	SMA6J130CA	130	144	159	1	209	2.9	1	PK	FK
SMA6J140A	SMA6J140CA	140	155	171	1	227	2.7	1	PL	FL
SMA6J150A	SMA6J150CA	150	167	185	1	243	2.5	1	PM	FM
SMA6J160A	SMA6J160CA	160	178	197	1	259	2.3	1	PP	FP
SMA6J170A	SMA6J170CA	170	189	209	1	275	2.2	1	PR	FR
SMA6J180A	SMA6J180CA	180	200	220	1	291	2.1	1	PT	FT
SMA6J190A	SMA6J190CA	190	211	232	1	308	2	1	PU	FU
SMA6J200A	SMA6J200CA	200	224	247	1	324	1.9	1	PV	FV
SMA6J220A	SMA6J220CA	220	246	272	1	356	1.7	1	PX	FX

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



SMD Type 600 W

■ Soldering Recommendation



Recommended Conditions

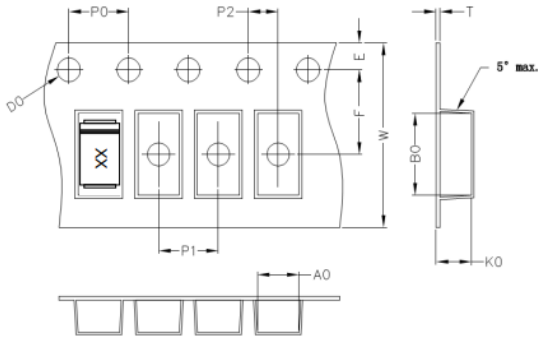
Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat	
-Temperature Min ($T_{S\ min}$)	150°C
-Temperature Max ($T_{S\ max}$)	200°C
-Time (min to max) (t_s)	60-180 seconds
$T_{S\ max}$ to T_L	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (T_L)	217°C
-Time (t_L)	60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_p)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

TVS Diode: SMA6J Series

SMD Type 600 W



■ Packaging



A0	B0	K0	D0	E	F
2.80	5.30	2.36	1.55	1.75	5.50
P0	P1	P2	T	W	Tolerance
4.0	4.0	2.0	0.25	12	0.1

■ Quantity

112

Series Type	Packaging option	Base quantity	Packaging specification
SMA6J	Tape and reel	7500pcs / reel	EIA STD RS-481114

115

■ Warehouse Storage Conditions of product

- Storage Condition:
 1. Storage Temperature: -10°C~+40°C
 2. Relative Humidity: $\leq 75\%RH$
 3. Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 1 year.