GSMA6T5.0A thru GSMA6T130A

Surface Mount Transient Voltage Suppressor Diodes
Peak Power Dissipation 600W Reverse Voltage 5V to 130V

Features

- For surface mounted applications
- Low profile package
- Ideal for automated placement
- Available in Unidirectional and Bidirectional
- 600W peak pulse power capability with a 10/1000us waveform
- Low incremental surge resistance, excellent clamping capability
- Very fast response time
- High temperature soldering guaranteed: 260°C/10s at terminals
- Meets MSL level 1
- Component in accordance to RoHS

RoHS COMPLIANT

DO-214AC (SMA)

Uni-directional Bi-directional

Schematic Diagram

Mechanical Data

- Package: DO-214AC (SMA)
- Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Polarity: For uni-directional types the band denotes cathode end, no marking on bi-directional types

Typical Applications

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, telecommunication.

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

Parameter	Symbol	Max	Unit
Peak Power Dissipation, With a 10/1000us Waveform[1,2] (Fig.1)	P_{PPM}	600	W
Power Dissipation, On Infinite Heat Sink at T_L=75°C	P_D	3.0	W
Peak Forward Surge Current, 8.3 ms Single Half Sine-Wave Unidirectional Only[2]	I_{FSM}	60	A
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	30	°C/W
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	120	°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°C per Fig.2.
2. Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal.

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

Parameter	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage @ at 25A for Unidirectional Only	V_F	3.5	V

GOOD-ARK
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Electrical Characteristics (T_A=25°C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Marking Code		Breakdown Voltage V_{BR} @ I_T[3]			Maximum Reverse Leakage I_R @ V_{RWM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A)[4]	Maximum Clamping Voltage V_C @ I_{PP} (V)
		Uni	Bi	Min (V)	Max (V)	I_T (mA)				
GSMA6T5.0A	-	6KE	-	6.40	7.07	10	800	5.0	65.22	9.2
GSMA6T6.0A	-	6KG	-	6.67	7.37	10	800	6.0	58.25	10.3
GSMA6T6.5A	-	6KK	-	7.22	7.98	10	500	6.5	53.57	11.2
GSMA6T7.0A	-	6KM	-	7.78	8.60	10	200	7.0	50.00	12.0
GSMA6T7.5A	-	6KP	-	8.33	9.21	1	100	7.5	46.51	12.9
GSMA6T8.0A	-	6KR	-	8.89	9.83	1	50	8.0	44.12	13.6
GSMA6T8.5A	-	6KT	-	9.44	10.40	1	10	8.5	41.67	14.4
GSMA6T9.0A	-	6KV	-	10.00	11.10	1	5	9.0	38.96	15.4
GSMA6T10A	-	6KX	-	11.10	12.30	1	5	10.0	35.29	17.0
GSMA6T11A	GSMA6T11CA	6KZ	6AZ	12.20	13.50	1	5	11.0	32.97	18.2
GSMA6T12A	GSMA6T12CA	6LE	6BE	13.30	14.70	1	5	12.0	30.15	19.9
GSMA6T13A	GSMA6T13CA	6LG	6BG	14.40	15.90	1	1	13.0	27.91	21.5
GSMA6T14A	GSMA6T14CA	6LK	6BK	15.60	17.20	1	1	14.0	25.86	23.2
GSMA6T15A	GSMA6T15CA	6LM	6BM	16.70	18.50	1	1	15.0	24.59	24.4
GSMA6T16A	GSMA6T16CA	6LP	6BP	17.80	19.70	1	1	16.0	23.08	26.0
GSMA6T17A	GSMA6T17CA	6LR	6BR	18.90	20.90	1	1	17.0	21.74	27.6
GSMA6T18A	GSMA6T18CA	6LT	6BT	20.00	22.10	1	1	18.0	20.55	29.2
GSMA6T19A	GSMA6T19CA	6LU	6BU	21.10	23.30	1	1	19.0	19.49	30.8
GSMA6T20A	GSMA6T20CA	6LV	6BV	22.20	24.50	1	1	20.0	18.52	32.4
GSMA6T22A	GSMA6T22CA	6LX	6BX	24.40	26.90	1	1	22.0	16.90	35.5
GSMA6T24A	GSMA6T24CA	6LZ	6BZ	26.70	29.50	1	1	24.0	15.42	38.9
GSMA6T26A	GSMA6T26CA	6ME	6CE	28.90	31.90	1	1	26.0	14.25	42.1

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

Part Number (Uni)	Part Number (Bi)	Marking Code		Breakdown Voltage V_{BR} @ I_T[3]			Maximum Reverse Leakage I_R@V_{RWM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A)[4]	Maximum Clamping Voltage Vc @ I_{PP} (V)
		Uni	Bi	Min(V)	Max (V)	I_T(mA)				
GSMA6T28A	GSMA6T28CA	6MG	6CG	31.10	34.40	1	1	28.0	13.22	45.4
GSMA6T30A	GSMA6T30CA	6MK	6CK	33.30	36.80	1	1	30.0	12.40	48.4
GSMA6T33A	GSMA6T33CA	6MM	6CM	36.70	40.60	1	1	33.0	11.26	53.3
GSMA6T36A	GSMA6T36CA	6MP	6CP	40.00	44.20	1	1	36.0	10.33	58.1
GSMA6T40A	GSMA6T40CA	6MR	6CR	44.40	49.10	1	1	40.0	9.30	64.5
GSMA6T43A	GSMA6T43CA	6MT	6CT	47.80	52.80	1	1	43.0	8.65	69.4
GSMA6T45A	GSMA6T45CA	6MV	6CV	50.00	55.30	1	1	45.0	8.25	72.7
GSMA6T48A	GSMA6T48CA	6MX	6CX	53.30	58.90	1	1	48.0	7.75	77.4
GSMA6T51A	GSMA6T51CA	6MZ	6CZ	56.70	62.70	1	1	51.0	7.28	82.4
GSMA6T54A	GSMA6T54CA	6NE	6DE	60.00	66.30	1	1	54.0	6.89	87.1
GSMA6T58A	GSMA6T58CA	6NG	6DG	64.40	71.20	1	1	58.0	6.41	93.6
GSMA6T60A	GSMA6T60CA	6NK	6DK	66.70	73.70	1	1	60.0	6.20	96.8
GSMA6T64A	GSMA6T64CA	6NM	6DM	71.10	78.60	1	1	64.0	5.83	103.0
GSMA6T70A	GSMA6T70CA	6NP	6DP	77.80	86.00	1	1	70.0	5.31	113.0
GSMA6T75A	GSMA6T75CA	6NR	6DR	83.30	92.10	1	1	75.0	4.96	121.0
GSMA6T78A	GSMA6T78CA	6NT	6DT	86.70	95.80	1	1	78.0	4.76	126.0
GSMA6T80A	GSMA6T80CA	6NU	6DU	88.80	97.60	1	1	80.0	4.63	129.6
GSMA6T85A	GSMA6T85CA	6NV	6DV	94.40	104.00	1	1	85.0	4.38	137.0
GSMA6T90A	-	6NX	-	100.00	111.00	1	1	90.0	4.11	146.0
GSMA6T100A	-	6NZ	-	111.00	123.00	1	1	100.0	3.70	162.0
GSMA6T110A	-	6PE	-	122.00	135.00	1	1	110.0	3.39	177.0
GSMA6T120A	-	6PG	-	133.00	147.00	1	1	120.0	3.11	193.0
GSMA6T130A	-	6PK	-	144.00	159.00	1	1	130.0	2.87	209.0

Notes:

3. Pulse test: $t_P \leq 50$ms.
4. Surge current waveform per Fig. 3 and derated per Fig.2.

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Typical Characteristic Curves

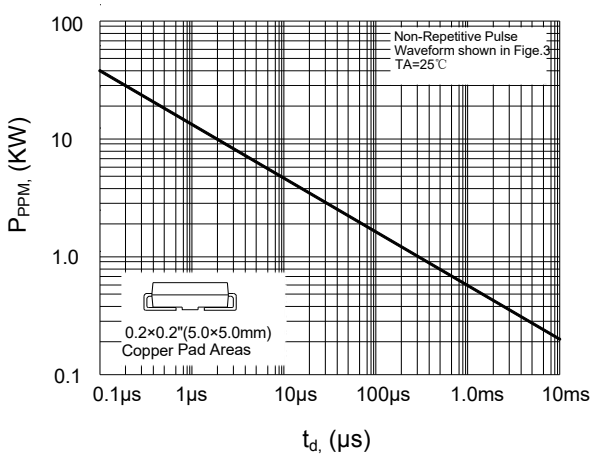

Figure 1. Peak Pulse Power Rating Curve

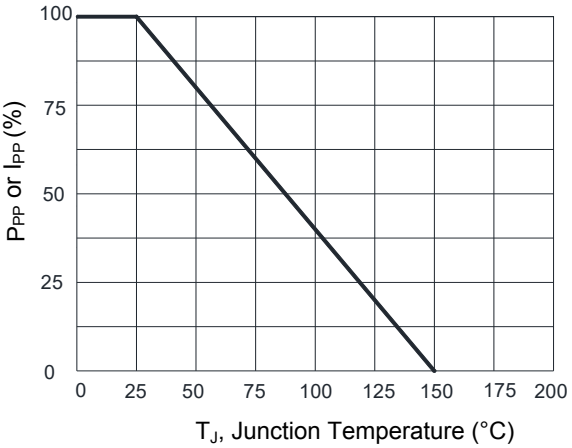

Figure 2. Pulse Power or Current vs. Initial Junction Temperature

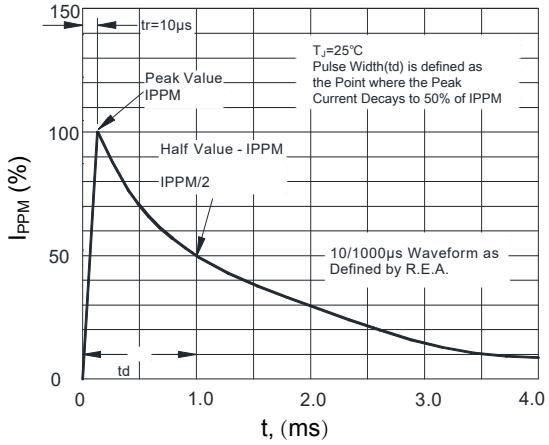

Figure 3. Pulse Waveform

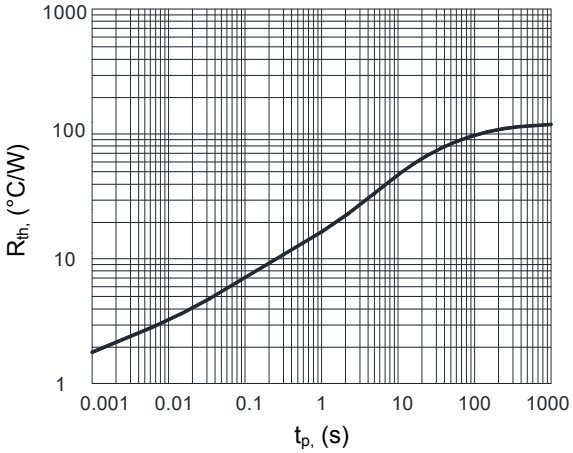

Figure 4. Typical Transient Thermal Impedance

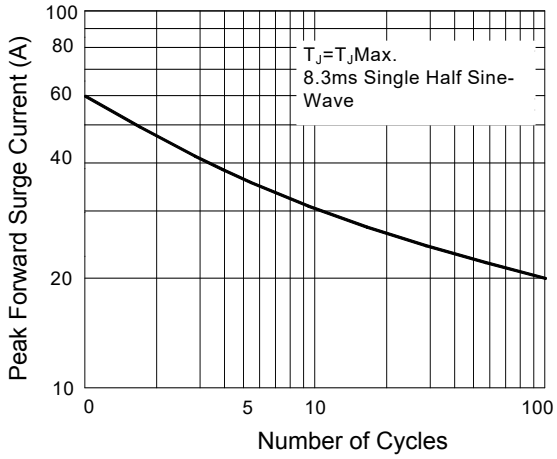

Figure 5. Maximum Non-Repetitive Surge Current

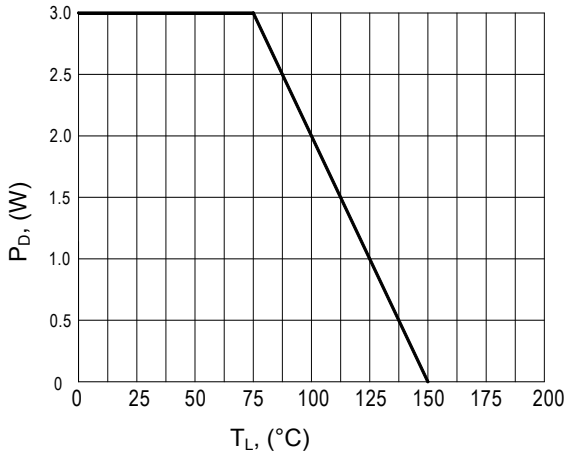

Figure 6. Steady State Power Dissipation

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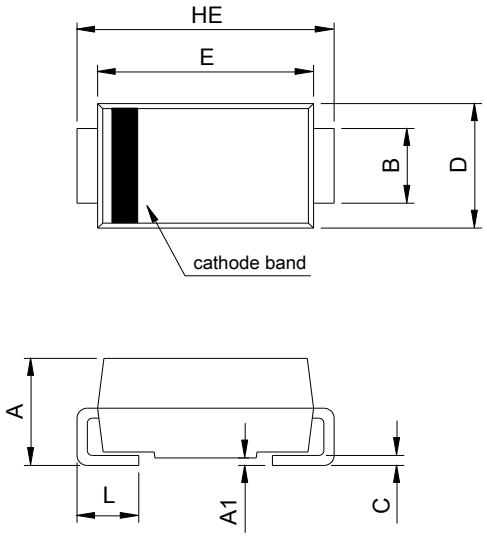
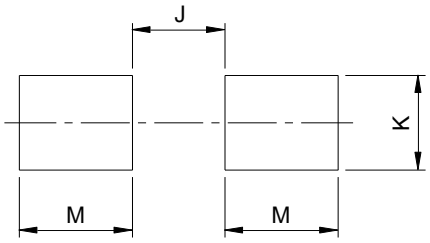
Package Outline Dimensions DO-214AC (SMA)



SMA (DO-214AC)				
DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.90	2.30	0.075	0.091
A1	0.00	0.20	0.000	0.008
B	1.25	1.65	0.049	0.065
C	0.15	0.31	0.006	0.012
D	2.35	2.90	0.093	0.114
E	3.99	4.60	0.157	0.181
HE	4.80	5.30	0.189	0.209
L	0.76	1.52	0.030	0.060

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	-

Ordering information

Device	Package	Reel size	Carrier	Quantity
GSMA6TxA	DO-214AC (SMA)	13"	Tape & Reel	7,500 pcs / Reel