

SMD Transient Voltage Suppressor



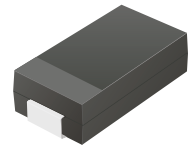
SMD Diodes Specialist

TVP06B6V8-G Thru. TVP06B601-G

Breakdown Voltage: 6.8 ~ 600Volts

Power Dissipation: 600 Watts

RoHS Device

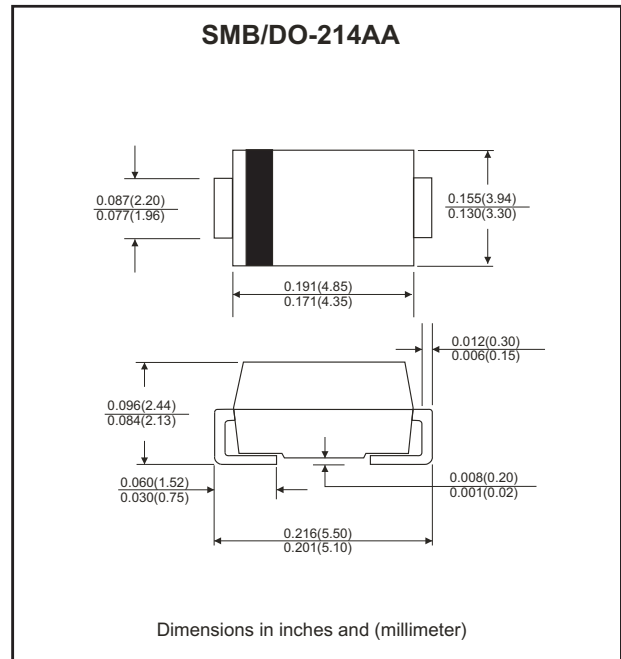


Features

- Glass passivated chip.
- Low leakage.
- Uni and Bidirectional unit.
- Excellent clamping capability.
- Very fast response time.
- RoHS compliant.

Mechanical Data

- Case: Molded plastic, JEDEC SMB/DO-214AA .
- Epoxy: UL 94V-0 rate flame retardant.
- Terminals: solderable per MIL-STD-750, method 2026
- Polarity: Cathode band denoted.
- Approx. weight: 0.108 grams



Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

Characteristics	Symbol	Value	Units
Peak power dissipation on 10/1000 μ S waveform (Note 1)	P _{PP}	600	W
Peak pulse current on 10/1000 μ S waveform (Note 1)	I _{PP}	See Next Table	A
Steady state power dissipation at T _L =75 °C	P _D	5.0	W
Peak forward surge current, 8.3mS single half sine-wave uni-directional only (Note 2)	I _{FSM}	100	A
Maximum instantaneous forward voltage at 25.0A for uni-directional only (Note 3)	V _F	3.5/5.0	V
Operation junction temperature	T _J	-55 to +150	°C
Storage temperature range	T _{STG}	-55 to +150	°C

Note:

1. Non-repetitive current pulse, per Fig. 5 and derated above TA=25 °C per Fig.1
2. Measured on 8.3 mS single half sine-wave or equivalent square wave, duty cycle=4 pulse per minute maximum.
3. V_F<3.5V for devices of V_{BR} <200V and V_F <5.0V for devices of V_{BR} >201V

REV:A

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Electrical Characteristics (TVP06B6V8-G Thru. TVP06B601-G)

Part No.	Absolute Maximum Rating (T _A =25 °C)					Electrical Characteristic (T _A =25 °C)				
	V _{RWM}	V _{BR} Min.	V _{BR} Max.	I _T	I _{FSM}	Max V _C		I _R @V _{RWM}	Marking Code	
	(V)	(V)	(V)	(mA)	(A)@8.3mS	I _{PP} (V)	I _{PP} (A)	(uA)	UNI	BI
TVP06B6V8A(CA)-G	5.8	6.46	7.14	10	100	10.5	57.14	1000	6V8A	6V8C
TVP06B7V5A(CA)-G	6.4	7.13	7.88	10	100	11.3	53.10	500	7V5A	7V5C
TVP06B8V2A(CA)-G	7.0	7.79	8.61	10	100	12.1	49.59	200	8V2A	8V2C
TVP06B9V1A(CA)-G	7.8	8.65	9.56	1	100	13.4	44.78	50	9V1A	9V1C
TVP06B10A(CA)-G	8.6	9.50	10.50	1	100	14.5	41.38	10	10A	10C
TVP06B11A(CA)-G	9.4	10.45	11.55	1	100	15.6	38.46	5	11A	11C
TVP06B12A(CA)-G	10.2	11.40	12.60	1	100	16.7	35.93	5	12A	12C
TVP06B13A(CA)-G	11.1	12.35	13.65	1	100	18.2	32.97	5	13A	13C
TVP06B15A(CA)-G	12.8	14.25	15.75	1	100	21.2	28.30	5	15A	15C
TVP06B16A(CA)-G	13.6	15.20	16.80	1	100	22.5	26.67	5	16A	16C
TVP06B18A(CA)-G	15.3	17.10	18.90	1	100	25.2	23.81	5	18A	18C
TVP06B20A(CA)-G	17.1	19.0	21.00	1	100	27.7	21.66	5	20A	20C
TVP06B22A(CA)-G	18.8	20.90	23.10	1	100	30.6	19.61	5	22A	22C
TVP06B24A(CA)-G	20.5	22.80	25.20	1	100	33.2	18.07	5	24A	24C
TVP06B27A(CA)-G	23.1	25.65	28.35	1	100	37.5	16.00	5	27A	27C
TVP06B30A(CA)-G	25.6	28.50	31.50	1	100	41.4	14.49	5	30A	30C
TVP06B33A(CA)-G	28.2	31.35	34.65	1	100	45.7	13.13	5	33A	33C
TVP06B36A(CA)-G	30.8	34.20	37.80	1	100	49.9	12.02	5	36A	36C
TVP06B39A(CA)-G	33.3	37.05	40.90	1	100	53.9	11.13	5	39A	39C
TVP06B43A(CA)-G	36.8	40.85	45.15	1	100	59.3	10.12	5	43A	43C
TVP06B47A(CA)-G	40.2	44.65	49.35	1	100	64.8	9.26	5	47A	47C
TVP06B51A(CA)-G	43.6	48.45	53.55	1	100	70.1	8.56	5	51A	51C
TVP06B56A(CA)-G	47.8	53.20	58.80	1	100	77.0	7.79	5	56A	56C
TVP06B62A(CA)-G	53.0	58.90	65.10	1	100	85.0	7.06	5	62A	62C
TVP06B68A(CA)-G	58.1	64.60	71.40	1	100	92.0	6.52	5	68A	68C
TVP06B75A(CA)-G	64.1	71.25	78.75	1	100	103.0	5.83	5	75A	75C
TVP06B82A(CA)-G	70.1	77.90	86.10	1	100	113.0	5.31	5	82A	82C
TVP06B91A(CA)-G	77.8	86.45	95.55	1	100	125.0	4.80	5	91A	91C
TVP06B101A(CA)-G	85.5	95.00	105.00	1	100	137.0	4.38	5	100A	100C
TVP06B111A(CA)-G	94.0	104.50	115.50	1	100	152.0	3.95	5	110A	110C
TVP06B121A(CA)-G	102.0	114.00	126.00	1	100	165.0	3.64	5	120A	120C
TVP06B131A(CA)-G	111.0	123.50	136.50	1	100	179.0	3.35	5	130A	130C
TVP06B151A(CA)-G	128.0	142.50	157.50	1	100	207.0	2.90	5	150A	150C
TVP06B161A(CA)-G	136.0	152.00	168.00	1	100	219.0	2.74	5	160A	160C
TVP06B171A(CA)-G	145.0	161.50	178.50	1	100	234.0	2.56	5	170A	170C
TVP06B181A(CA)-G	154.0	171.00	189.00	1	100	246.0	2.44	5	180A	180C
TVP06B201A(CA)-G	171.0	190.00	210.00	1	100	274.0	2.19	5	200A	200C
TVP06B221A(CA)-G	185.0	209.00	231.00	1	100	328.0	1.83	5	220A	220C
TVP06B251A(CA)-G	214.0	237.50	262.50	1	100	344.0	1.74	5	250A	250C
TVP06B301A(CA)-G	256.0	285.00	315.00	1	100	414.0	1.45	5	300A	300C
TVP06B351A(CA)-G	299.3	332.50	367.50	1	100	482.0	1.24	5	350A	350C
TVP06B381A(CA)-G	324.9	361.00	399.00	1	100	524.4	1.14	5	380A	380C
TVP06B401A(CA)-G	342.0	380.00	420.00	1	100	548.0	1.09	5	400A	400C
TVP06B441A(CA)-G	376.2	418.00	462.00	1	100	607.2	0.99	5	440A	440C
TVP06B501A(CA)-G	427.5	475.00	525.00	1	100	690.0	0.87	5	500A	500C
TVP06B521A(CA)-G	444.6	494.00	546.00	1	100	717.6	0.84	5	520A	520C
TVP06B551A(CA)-G	470.3	522.50	577.50	1	100	759.0	0.79	5	550A	550C
TVP06B601A(CA)-G	513.0	570.00	630.00	1	100	828.0	0.72	5	600A	600C

Note:

- 1) The available parts are "A" type only, the parts without A (V_{BR} is ±10%) is not available.
- 2) Add suffix "C" or "CA" after part number to specify Bi-directional devices.
- 3) For Bi-Directional devices having V_R of 10 volts and under, the I_R limit is double.

REV:A

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Rating and Characteristics Curves (TVP06B5V0-G Thru. TVP06B601-G)

Fig.1- Pulse Derating Curve

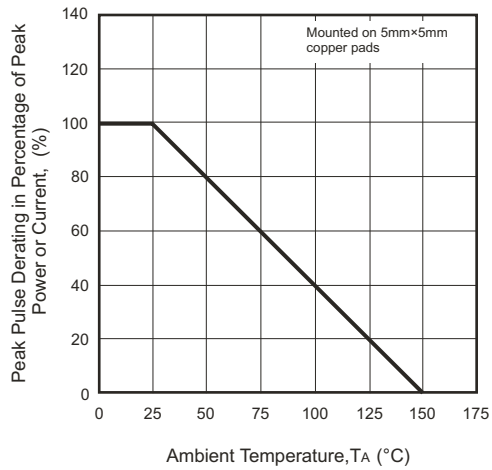


Fig.2- Maximum Non-Repetitive Surge Current

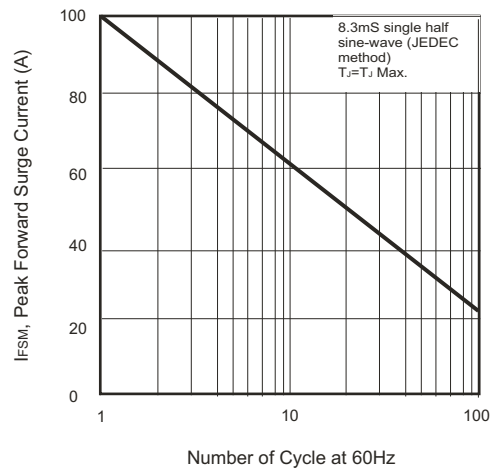


Fig.3 - Steady State Power Derating Curve

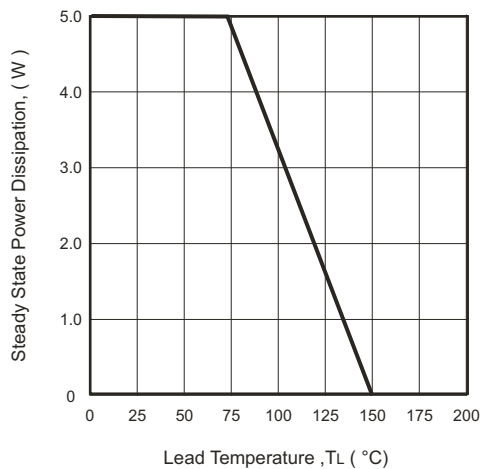


Fig.4 - Peak Pulse Power Rating Curve

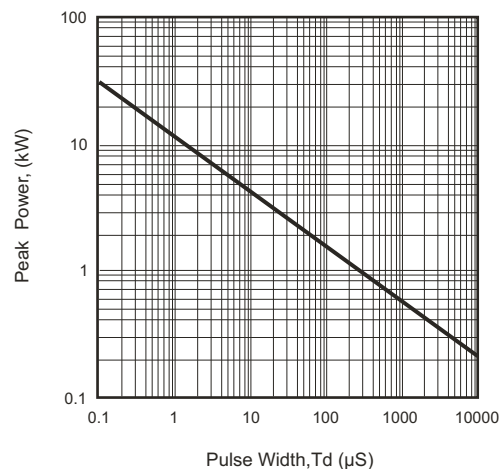


Fig.5 - Pulse Waveform

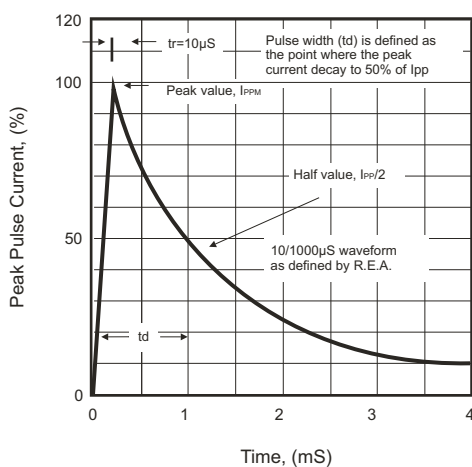
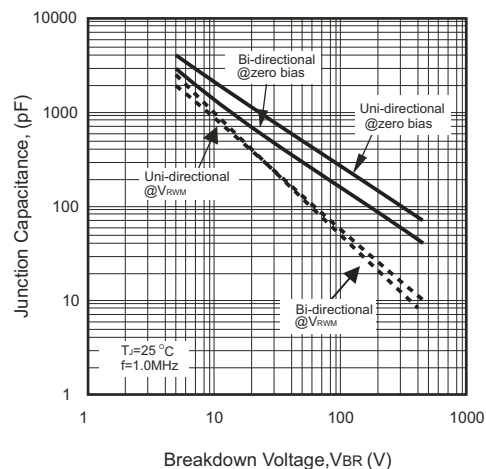
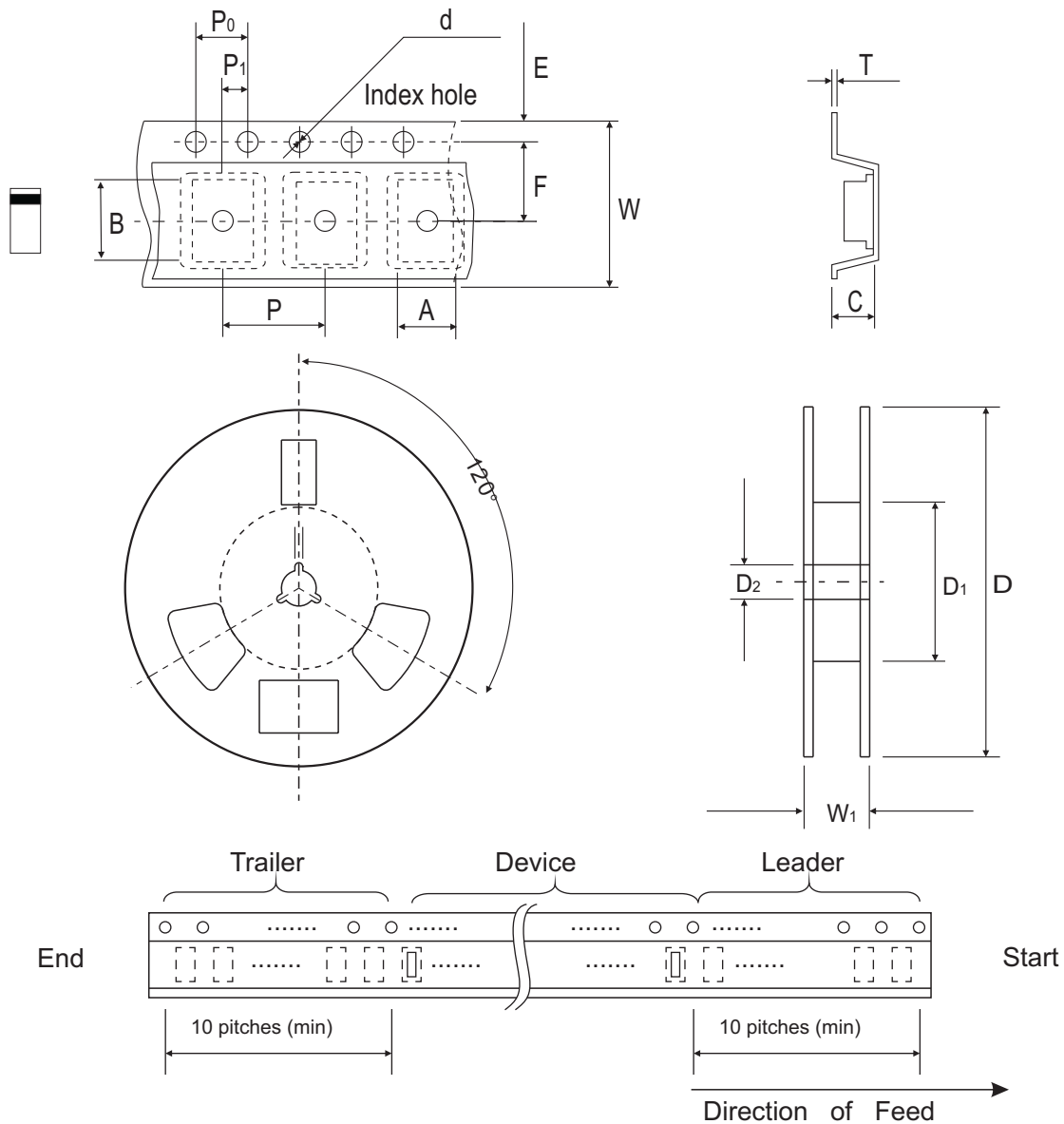


Fig.6 - Typical Junction Capacitance



Reel Taping Specification



DO-214AA (SMB)	SYMBOL	A	B	C	d	D	D ₁	D ₂
	(mm)	3.67 ± 0.10	5.69 ± 0.10	4.50 (max)	1.55 + 0.10-0.0	330	50.0 MIN.	13.00 ± 0.20
	(inch)	0.144 ± 0.004	0.224 ± 0.004	0.177 (max)	0.061 + 0.004-0.0	13.00	1.969 MIN.	0.512 ± 0.008

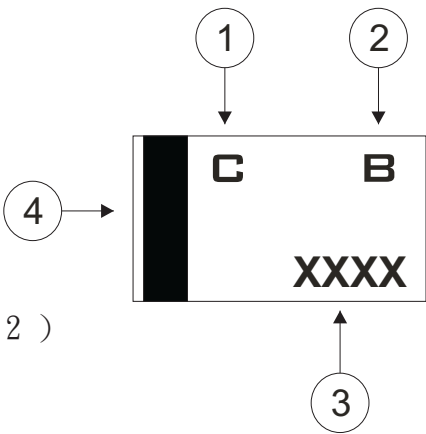
DO-214AA (SMB)	SYMBOL	E	F	P	P ₀	P ₁	W	W ₁
	(mm)	1.75 ± 0.10	5.50 ± 0.05	8.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	12.0 ± 0.30	18.4 MAX.
	(inch)	0.069 ± 0.004	0.217 ± 0.002	0.315 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.472 ± 0.012	0.724 MAX

Marking Code

- 1. C: COMCHIP
- 2. ○: Package

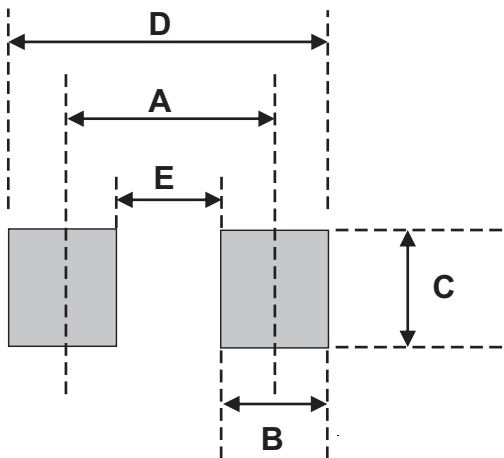
○	PKG
B	SMB

- 3. XXX / XXXX: Marking code(see Page.2)
- 4. ■: Cathod Band



Suggested PAD Layout

SIZE	DO-214AA (SMB)	
	(mm)	(inch)
A	4.50	0.177
B	1.50	0.059
C	3.60	0.142
D	6.00	0.236
E	3.00	0.118



Standard Package

Case Type	Qty per Reel	Reel Size
	(Pcs)	(inch)
DO-214AA (SMB)	3000	13