

# SMD Transient Voltage Suppressor



## TV06B5V0-G Thru TV06B171-G

Working Peak Reverse Voltage: 5.0 - 170 Volts  
 Power Dissipation: 600 Watts  
 RoHS Device

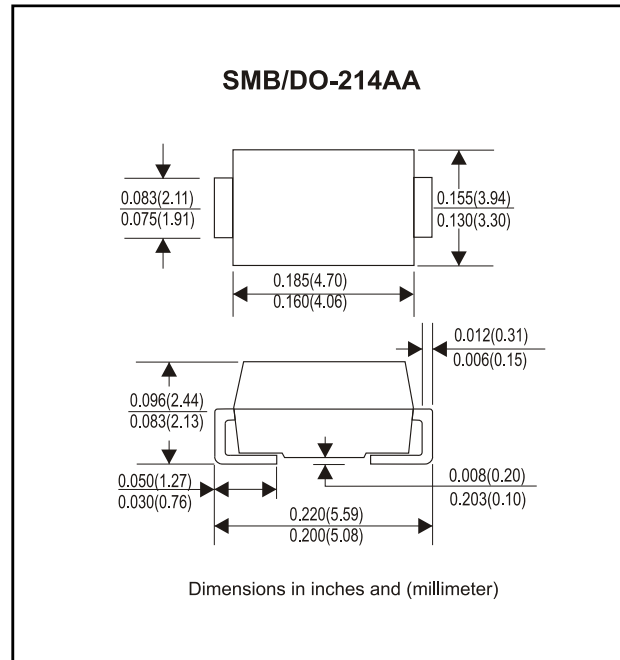


### Features

- Ideal for surface mount applications
- Easy pick and place
- Plastic package has Underwriters Lab. flammability classification 94V-0
- Typical IR less than 1uA above 10V
- Fast reponse time: typically less 1nS for uni-direction, less than 5nS for bi-directiona, from 0 V to BV min.

### Mechanical data

- Case: JEDEC DO-214AA molded plastic
- Terminals: solderable per MIL-STD-750, method 2026
- Polarity: Cathode band denoted
- Approx. Weight:0.093 gram



### 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 10/1000uS Waveform (Note 1, Fig. 1)	P <sub>PPM</sub>	600	Watts
Peak Pulse Current of on 10/1000uS Waveform (Note 1, Fig. 3)	I <sub>PPM</sub>	See Table 1	A
Steady State Power Dissipation at T <sub>L</sub> =75°C (Note 2)	P <sub>M(AV)</sub>	5.0	Watts
Peak Forfard Surge Current, 8.3mS Single Half Sine-Wave Superimposed on Rated Load, Uni-Directional Only (Note 3)	I <sub>FSM</sub>	100	A
Maxinum Instantaneous Forward Voltage at 35.0A for Uni-Directional only (Note 3 & 4)	V <sub>F</sub>	3.5/5.0	Volts
Max. Operation Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C

Note: 1. Non-Repetitive Current Pulse, per Fig. 3 and Derated above TA=25°C, per Fig. 2.  
 2. Mounted on 5.0x5.0mm<sup>2</sup> Copper Pads to Each Terminal.  
 3. Measured on 8.3 mS Single Half Sine-Wave or Equivalent Square Wave, Duty Cycle=4 Pulse per Minute Maximum.  
 4. V<sub>F</sub>=3.5V on TV06B5V0 thru TV06B900 Devices and V<sub>F</sub>=5.0V on TV06B101 thru TV06B171.

## Rating and Characteristic Curves (TV06B5V0-G Thru TV06B171-G)

Fig. 1 - Reverse Characteristics

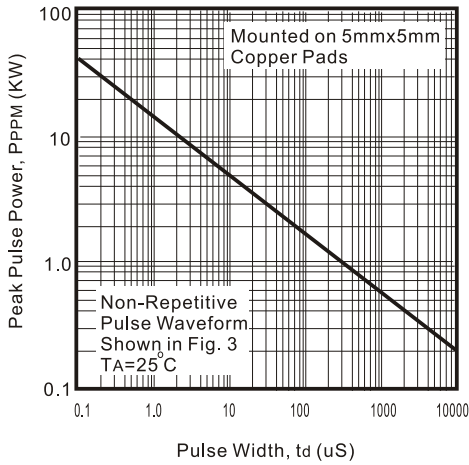


Fig. 2 - Pulse Derating Curve

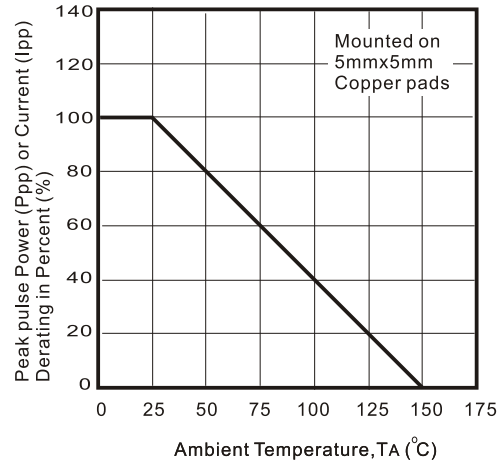


Fig. 3 - Pulse Waveform

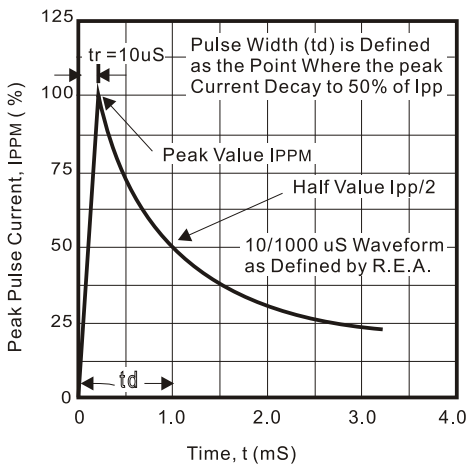


Fig. 4 - Typical Junction Capacitance for Uni-Directional Devices

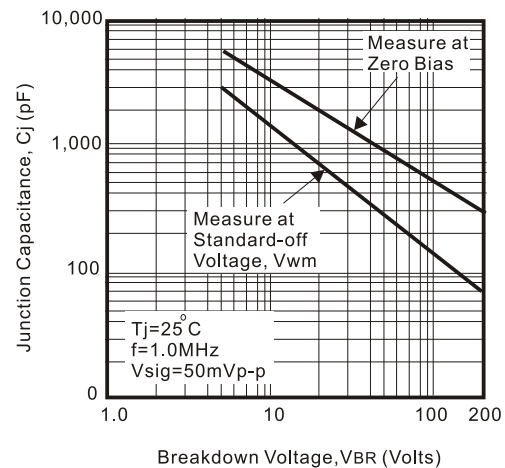


Fig. 5 - Typical Junction Capacitance for Bi-Directional Devices

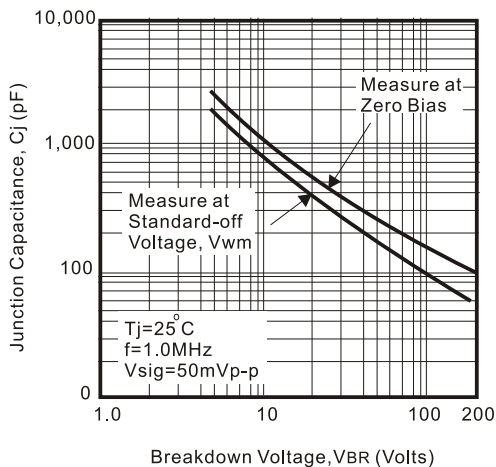
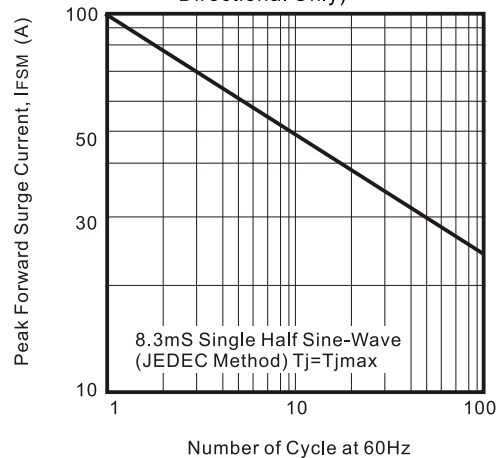


Fig. 6 - Maximum Non-Repetitive Peak Forward Surge Current (Uni-Directional Only)



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**Table 1. Specification**

Part No	Absolute Maximum Rating(Ta=25°C)					Electrical Characteristic(Ta=25°C)				
	V <sub>RWM</sub>	V <sub>BR</sub> Min.	V <sub>BR</sub> Max.	I <sub>T</sub>	I <sub>FSM</sub>	Max V <sub>c</sub>	I <sub>PP</sub> (A)	I <sub>R</sub> @V <sub>RWM</sub>	Marking Code.	
	(V)	(V)	(V)	(mA)	(A)@8.3ms	(V)		( $\mu$ A)	UNI	BI
TV06B5V0K(B)-G	5.00	6.40	7.82	10	100	9.6	62.5	800	KD	AD
TV06B5V0J(B)-G	5.00	6.40	7.07	10	100	9.2	65.2	800	KE	AE
TV06B6V0K(B)-G	6.00	6.67	8.15	10	100	11.4	52.6	800	KF	AF
TV06B6V0J(B)-G	6.00	6.67	7.37	10	100	10.3	58.3	800	KG	AG
TV06B6V5K(B)-G	6.50	7.22	8.82	10	100	12.3	48.7	500	KH	AH
TV06B6V5J(B)-G	6.50	7.22	7.98	10	100	11.2	53.6	500	KK	AK
TV06B7V0K(B)-G	7.00	7.78	9.51	1	100	13.3	45.1	200	KL	AL
TV06B7V0J(B)-G	7.00	7.78	8.60	1	100	12.0	50.0	200	KM	AM
TV06B7V5K(B)-G	7.50	8.33	10.2	1	100	14.3	42.0	100	KN	AN
TV06B7V5J(B)-G	7.50	8.33	9.21	1	100	12.9	46.5	100	KP	AP
TV06B8V0K(B)-G	8.00	8.89	10.9	1	100	15.0	40.0	50	KQ	AQ
TV06B8V0J(B)-G	8.00	8.89	9.83	1	100	13.6	44.1	50	KR	AR
TV06B8V5K(B)-G	8.55	9.44	11.5	1	100	15.9	37.7	10	KS	AS
TV06B8V5J(B)-G	8.55	9.44	10.4	1	100	14.4	41.7	10	KT	AT
TV06B9V0K(B)-G	9.00	10.0	12.2	1	100	16.9	35.5	5	KU	AU
TV06B9V0J(B)-G	9.00	10.0	11.1	1	100	15.4	39.0	5	KV	AV
TV06B100K(B)-G	10.0	11.1	13.6	1	100	18.8	31.9	5	KW	AW
TV06B100J(B)-G	10.0	11.1	12.3	1	100	17.0	35.3	5	KX	AX
TV06B110K(B)-G	11.0	12.2	14.9	1	100	20.1	29.9	5	KY	AY
TV06B110J(B)-G	11.0	12.2	13.5	1	100	18.2	33.0	5	KZ	AZ
TV06B120K(B)-G	12.0	13.3	16.3	1	100	22.0	27.3	5	LD	BD
TV06B120J(B)-G	12.0	13.3	14.7	1	100	19.9	30.2	5	LE	BE
TV06B130K(B)-G	13.0	14.4	17.6	1	100	23.8	25.2	5	LF	BF
TV06B130J(B)-G	13.0	14.4	15.9	1	100	21.5	27.9	5	LG	BG
TV06B1100K(B)-G	14.0	15.6	19.1	1	100	25.8	23.3	5	LH	BH
TV06B1100J(B)-G	14.0	15.6	17.2	1	100	23.2	25.8	5	LK	BK
TV06B150K(B)-G	15.0	16.7	20.4	1	100	26.9	22.3	5	LL	BL
TV06B150J(B)-G	15.0	16.7	18.5	1	100	24.4	24.0	5	LM	BM
TV06B160K(B)-G	16.0	17.8	21.8	1	100	28.8	20.8	5	LN	BN
TV06B160J(B)-G	16.0	17.8	19.7	1	100	26.0	23.1	5	LP	BP
TV06B170K(B)-G	17.0	18.9	23.1	1	100	30.5	19.7	5	LQ	BQ
TV06B170J(B)-G	17.0	18.9	20.9	1	100	27.6	21.7	5	LR	BR
TV06B180K(B)-G	18.0	20.0	24.4	1	100	32.2	18.6	5	LS	BS
TV06B180J(B)-G	18.0	20.0	22.1	1	100	29.2	20.5	5	LT	BT
TV06B200K(B)-G	20.0	22.2	27.1	1	100	35.8	16.4	5	LU	BU
TV06B200J(B)-G	20.0	22.2	24.5	1	100	32.4	18.5	5	LV	BV
TV06B220K(B)-G	22.0	24.4	29.8	1	100	39.4	15.2	5	LW	BW
TV06B220J(B)-G	22.0	24.4	26.9	1	100	35.5	16.9	5	LX	BX
TV06B240K(B)-G	24.0	26.7	32.6	1	100	43.0	14.0	5	LY	BY
TV06B240J(B)-G	24.0	26.7	29.5	1	100	38.9	15.4	5	LZ	BZ
TV06B260K(B)-G	26.0	28.9	35.3	1	100	46.6	12.4	5	MD	CD
TV06B260J(B)-G	26.0	28.9	31.9	1	100	42.1	14.2	5	ME	CE
TV06B280K(B)-G	28.0	31.1	38.0	1	100	50.0	12.0	5	MF	CF
TV06B280J(B)-G	28.0	31.1	34.4	1	100	45.4	13.2	5	MG	CG
TV06B300K(B)-G	30.0	33.3	40.7	1	100	53.5	11.2	5	MH	CH
TV06B300J(B)-G	30.0	33.3	36.8	1	100	48.4	12.4	5	MK	CK
TV06B330K(B)-G	33.0	36.7	44.9	1	100	59.0	10.2	5	ML	CL
TV06B330J(B)-G	33.0	36.7	40.6	1	100	53.3	11.3	5	MM	CM
TV06B360K(B)-G	36.0	40.0	48.9	1	100	64.3	9.3	5	MN	CN
TV06B360J(B)-G	36.0	40.0	44.2	1	100	58.1	10.3	5	MP	CP
TV06B400K(B)-G	40.0	44.4	54.3	1	100	71.4	8.4	5	MQ	CQ
TV06B400J(B)-G	40.0	44.4	49.1	1	100	64.5	9.3	5	MR	CR
TV06B430K(B)-G	43.0	47.8	58.4	1	100	76.7	7.8	5	MS	CS
TV06B430J(B)-G	43.0	47.8	52.8	1	100	69.4	8.6	5	MT	CT
TV06B450K(B)-G	45.0	50.0	61.1	1	100	80.3	7.5	5	MU	CU
TV06B450J(B)-G	45.0	50.0	55.3	1	100	72.7	8.3	5	MV	CV

Rev. A

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**Table 1. Specification**

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	V <sub>RWM</sub>	V <sub>BR</sub> Min.	V <sub>BR</sub> Max.	I <sub>T</sub>	I <sub>FSM</sub>	Max V <sub>c</sub>	I <sub>R@V<sub>RWM</sub></sub>	Marking Code.		
	(V)	(V)	(V)	(mA)	(A)@8.3ms	(V)	I <sub>PP</sub> (A)	(uA)	UNI	BI
TV06B480K(B)-G	48.0	53.3	65.1	1	100	85.5	7.0	5	MW	CW
TV06B480J(B)-G	48.0	53.3	58.9	1	100	77.4	7.7	5	MX	CX
TV06B510K(B)-G	51.0	56.7	69.3	1	100	91.1	6.6	5	MY	CY
TV06B510J(B)-G	51.0	56.7	62.7	1	100	82.4	7.3	5	MZ	CZ
TV06B540K(B)-G	54.0	60.0	73.3	1	100	96.3	6.2	5	ND	DD
TV06B540J(B)-G	54.0	60.0	66.3	1	100	87.1	6.9	5	NE	DE
TV06B580K(B)-G	58.0	64.4	78.7	1	100	103.0	5.8	5	NF	DF
TV06B580J(B)-G	58.0	64.4	71.2	1	100	93.6	6.4	5	NG	DG
TV06B600K(B)-G	60.0	66.7	81.5	1	100	107.0	5.6	5	NH	DH
TV06B600J(B)-G	60.0	66.7	73.7	1	100	96.8	6.2	5	NK	DK
TV06B640K(B)-G	64.0	71.1	86.9	1	100	114.0	5.3	5	NL	DL
TV06B640J(B)-G	64.0	71.1	78.6	1	100	103.0	5.8	5	NM	DM
TV06B700K(B)-G	70.0	77.8	95.1	1	100	125.0	4.8	5	NN	DN
TV06B700J(B)-G	70.0	77.8	86.0	1	100	113.0	5.3	5	NP	DP
TV06B750K(B)-G	75.0	83.3	102.0	1	100	134.0	4.5	5	NQ	DQ
TV06B750J(B)-G	75.0	83.3	92.1	1	100	121.0	4.9	5	NR	DR
TV06B780K(B)-G	78.0	86.7	106.0	1	100	139.0	4.3	5	NS	DS
TV06B780J(B)-G	78.0	86.7	95.8	1	100	126.0	4.7	5	NT	DT
TV06B850K(B)-G	85.0	94.4	115.0	1	100	151.0	3.9	5	NU	DU
TV06B850J(B)-G	85.0	94.4	104.0	1	100	137.0	4.4	5	NV	DV
TV06B900K(B)-G	90.0	100	122.0	1	100	160.0	3.8	5	NW	DW
TV06B900J(B)-G	90.0	100	111.0	1	100	146.0	4.1	5	NX	DX
TV06B101K(B)-G	100	111	136.0	1	100	179.0	3.4	5	NY	DY
TV06B101J(B)-G	100	111	123.0	1	100	162.0	3.7	5	NZ	DZ
TV06B111K(B)-G	110	122	149.0	1	100	196.0	3.0	5	PD	ED
TV06B111J(B)-G	110	122	135.0	1	100	177.0	3.4	5	PE	EE
TV06B121K(B)-G	120	133	163.0	1	100	214.0	2.8	5	PF	EF
TV06B121J(B)-G	120	133	147.0	1	100	193.0	3.1	5	PG	EG
TV06B131K(B)-G	130	144	176.0	1	100	231.0	2.6	5	PH	EH
TV06B131J(B)-G	130	144	159.0	1	100	209.0	2.9	5	PK	EK
TV06B151K(B)-G	150	167	204.0	1	100	268.0	2.2	5	PL	EL
TV06B151J(B)-G	150	167	185.0	1	100	243.0	2.5	5	PM	EM
TV06B161K(B)-G	160	178	218.0	1	100	287.0	2.1	5	PN	EN
TV06B161J(B)-G	160	178	197.0	1	100	259.0	2.3	5	PP	EP
TV06B171K(B)-G	170	189	231.0	1	100	304.0	2.0	5	PQ	EQ
TV06B171J(B)-G	170	189	209.0	1	100	275.0	2.2	5	PR	ER

Note:

- 1) Suffix K denotes 10% tolerance devices, suffix J denotes 5% tolerance devices.
- 2) Suffix B after part number to specify bi-directional devices.
- 3) For the bidirection TV06B5V0KB, the maximum V<sub>BR</sub> is 7.25V.
- 3) For bi-directional devices having V<sub>R</sub> of 10 volts and under, the I<sub>R</sub> limit is double.