SMD Transient Voltage Suppressor

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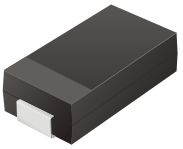
TV04A5V0 Thru TV04A171

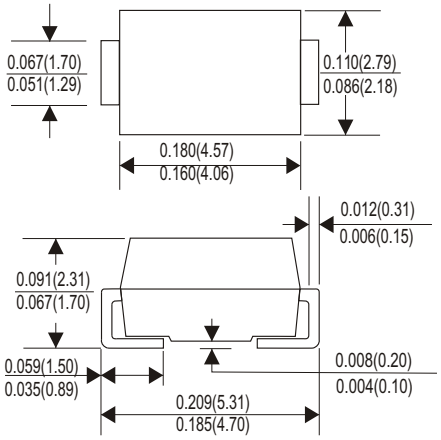
Working Peak Reverse Voltage: 5.0 - 170 Volts
Power Dissipation: 400 Watts



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.

DO-214AC (SMA)



Dimensions in inches and (millimeters)

Mechanical data

- Case: JEDEC DO-214AC molded plastic
- Terminals: solderable per MIL-STD-750, method 2026
- Polarity: Cathode band denoted
- Mounting position: Any
- Approx. weight:0.064 gram

Maximum Ratings and Electrical Characterics

Rating at 25°C ambient temperature unless otherwise specified.
Single phase, halfwave, 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_{PPM}	400	Watts
Peak Pulse Current of on 10/1000uS Waveform (Note 1, Fig. 3)	I_{PPM}	See Table 1	A
Steady State Power Dissipation at T_L=75°C (Note 2)	$P_{M(AV)}$	1.0	Watts
Peak Forfard Surge Current, 8.3mS Single Half Sine-Wave Superimposed on Rated Load, Uni-Directional Only (Note 3)	I_{FSM}	40	A
Maxinum Instantaneous Forward Voltage at 25.0A for Uni-Directional only (Note 3 &4)	VF	3.5	Volts
Operation Junction Temperature Range	Tj	-55 to +150	°C
Storage Temperature Range	T_{STG}	-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 5.0x5.0mm² Copper Pads to Each Terminal.
3. Lead Temperature at TL=75°C per Fig.5
4. Measured on 8.3 mS Single Half Sine-Wave for Uni-Directional Devices Only.
5. Peak Pulse Power Waveform is 10/1000uS.

Rating and Characteristic Curves (TV04A5V0 Thru TV04A171)

Fig. 1 - Reverse Characteristics

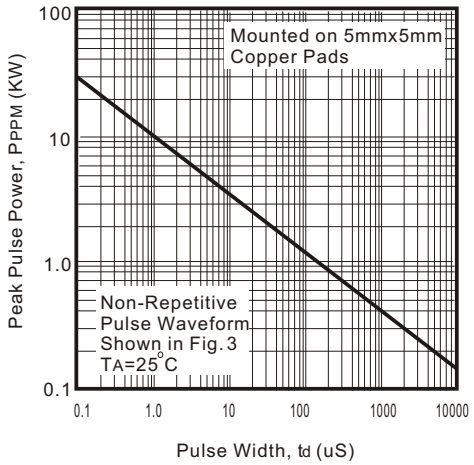


Fig. 2 - Pulse Derating Ciurve

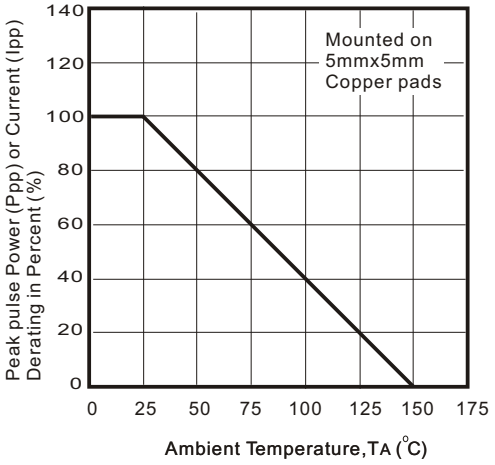


Fig. 3 - Pulse Waveform

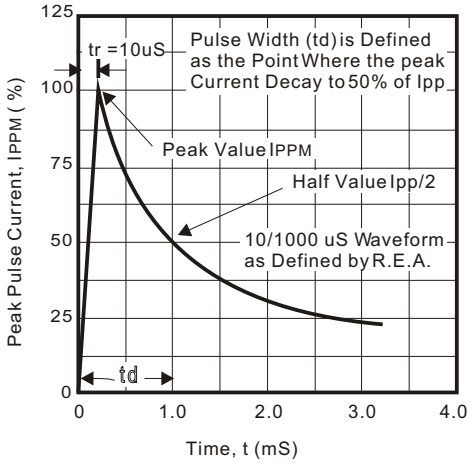


Fig. 4 - Typical Junction Capacitance

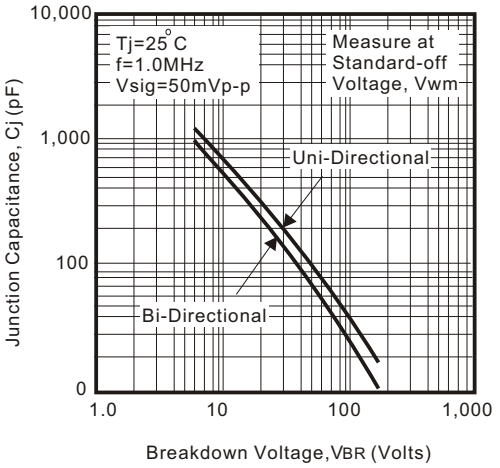


Fig. 5 - Steady State Power Derating Curve

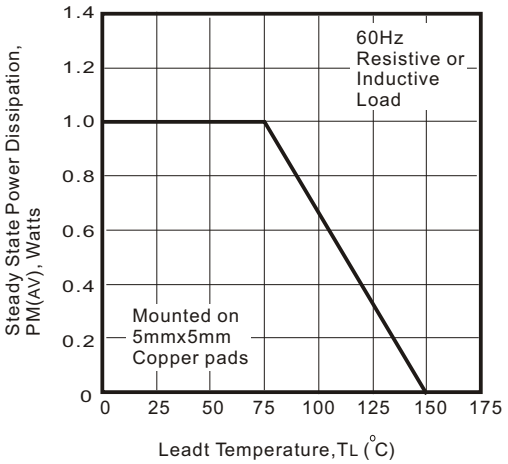


Fig. 6 - Maxinum Non-Repetitive Peak Forward Surge Current (Uni-Directional Only)

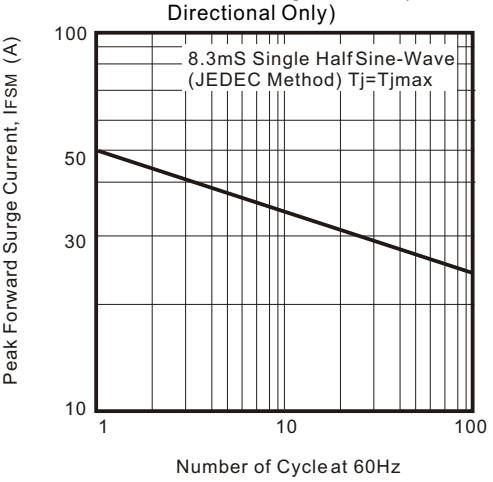


Table 1. Specification

Part No.	Absolute Maximum Rating (Ta=25°C)					Electrical Characteristics (Ta=25°C)				
	V_{RWM}	V_{BR} Min	V_{BR} Max	I_T	I_{FSM}	Max Vc		I_R @V_{RWM}	Marking Code	
	(V)	(V)	(V)	(mA)	(A) @8.3mS	(V)	Ipp(A)	(uA)	UNI	BI
TV04A5V0K(B)	5.00	6.40	7.30	10	40	9.6	41.6	800	AD	WD
TV04A5V0J(B)	5.00	6.40	7.00	10	40	9.2	43.5	800	AE	WE
TV04A6V0K(B)	6.00	6.67	8.15	10	40	11.4	35.1	800	AF	WF
TV04A6V0J(B)	6.00	6.67	7.37	10	40	10.3	38.0	800	AG	WG
TV04A6V5K(B)	6.50	7.22	8.82	10	40	12.3	32.5	500	AH	WH
TV04A6V5J(B)	6.50	7.22	7.98	10	40	11.2	35.7	500	AK	WK
TV04A7V0K(B)	7.00	7.78	9.51	1	40	13.3	30.1	200	AL	WL
TV04A7V0J(B)	7.00	7.78	8.60	1	40	12.0	33.3	200	AM	WM
TV04A7V5K(B)	7.50	8.33	10.2	1	40	14.3	28.0	100	AN	WN
TV04A7V5J(B)	7.50	8.33	9.21	1	40	12.9	31.0	100	AP	WP
TV04A8V0K(B)	8.00	8.89	10.9	1	40	15.0	26.5	50	AQ	WQ
TV04A8V0J(B)	8.00	8.89	9.83	1	40	13.6	29.4	50	AR	WR
TV04A8V5K(B)	8.50	9.44	11.5	1	40	15.9	25.1	10	AS	WS
TV04A8V5J(B)	8.50	9.44	10.4	1	40	14.4	27.7	10	AT	WT
TV04A9V0K(B)	9.00	10.0	12.2	1	40	16.9	23.6	5	AU	WU
TV04A9V0J(B)	9.00	10.0	11.1	1	40	15.4	26.0	5	AV	WV
TV04A100K(B)	10.00	11.1	13.6	1	40	18.8	21.1	5	AW	WW
TV04A100J(B)	10.00	11.1	12.3	1	40	17.0	23.5	5	AX	WX
TV04A110K(B)	11.00	12.2	14.9	1	40	20.1	20.0	5	AY	WY
TV04A110J(B)	11.00	12.2	13.5	1	40	18.2	22.0	5	AZ	WZ
TV04A120K(B)	12.00	13.3	16.3	1	40	22.0	18.1	5	BD	XD
TV04A120J(B)	12.00	13.3	14.7	1	40	19.9	20.1	5	BE	XE
TV04A130K(B)	13.00	14.4	17.6	1	40	23.8	16.8	5	BF	XF
TV04A130J(B)	13.00	14.4	15.9	1	40	21.5	18.6	5	BG	XG
TV04A140K(B)	14.00	15.6	19.1	1	40	25.8	15.5	5	BH	XH
TV04A140J(B)	14.00	15.6	17.2	1	40	23.2	17.2	5	BK	XK
TV04A150K(B)	15.00	16.7	20.4	1	40	26.9	14.8	5	BL	XL
TV04A150J(B)	15.00	16.7	18.5	1	40	24.4	16.4	5	BM	XM
TV04A160K(B)	16.00	17.8	21.8	1	40	28.8	13.8	5	BN	XN
TV04A160J(B)	16.00	17.8	19.7	1	40	26.0	15.3	5	BP	XP
TV04A170K(B)	17.00	18.9	23.1	1	40	30.5	13.1	5	BQ	XQ
TV04A170J(B)	17.00	18.9	20.9	1	40	27.6	14.5	5	BR	XR
TV04A180K(B)	18.00	20.0	24.4	1	40	32.2	12.4	5	BS	XS
TV04A180J(B)	18.00	20.0	22.1	1	40	29.2	13.7	5	BT	XT
TV04A200K(B)	20.00	22.2	27.1	1	40	35.8	11.1	5	BU	XU
TV04A200J(B)	20.00	22.2	24.5	1	40	32.4	12.3	5	BV	XV
TV04A220K(B)	22.00	24.4	29.8	1	40	39.4	10.0	5	BW	XW
TV04A220J(B)	22.00	24.4	26.9	1	40	35.5	11.2	5	BX	XX
TV04A240K(B)	24.00	26.7	32.6	1	40	43.0	9.3	5	BY	XY
TV04A240J(B)	24.00	26.7	29.5	1	40	38.9	10.3	5	BZ	XZ
TV04A260K(B)	26.00	28.9	35.3	1	40	46.6	8.6	5	CD	YD
TV04A260J(B)	26.00	28.9	31.9	1	40	42.1	9.5	5	CE	YE
TV04A280K(B)	28.00	31.1	38.0	1	40	50.0	8.0	5	CF	YF
TV04A280J(B)	28.00	31.1	34.4	1	40	45.4	8.8	5	CG	YG
TV04A300K(B)	30.00	33.3	40.7	1	40	53.5	7.5	5	CH	YH
TV04A300J(B)	30.00	33.3	36.8	1	40	48.4	8.3	5	CK	YK
TV04A330K(B)	33.00	36.7	44.9	1	40	59.0	6.8	5	CL	YL
TV04A330J(B)	33.00	36.7	40.6	1	40	53.3	7.5	5	CM	YM
TV04A360K(B)	36.00	40.0	49.9	1	40	64.3	6.2	5	CN	YN
TV04A360J(B)	36.00	40.0	44.2	1	40	58.1	6.9	5	CP	YP
TV04A400K(B)	40.00	44.4	54.3	1	40	71.4	5.6	5	CQ	YQ
TV04A400J(B)	40.00	44.4	49.1	1	40	64.5	6.2	5	CR	YR
TV04A430K(B)	43.00	47.8	58.4	1	40	76.7	5.2	5	CS	YS
TV04A430J(B)	43.00	47.8	52.8	1	40	69.4	5.7	5	CT	YT
TV04A450K(B)	45.00	50.0	61.1	1	40	80.3	5.0	5	CU	YU
TV04A450J(B)	45.00	50.0	55.3	1	40	72.7	5.5	5	CV	YV

Part No.	Absolute Maximum Rating (Ta=25°C)					Electrical Characteristics (Ta=25°C)				
	V_{RWM}	V_{BR} Min	V_{BR} Max	I_T	I_{FSM}	Max Vc		I_R @V_{RWM}	Marking Code	
	(V)	(V)	(V)	(mA)	(A) @8.3mS	(V)	Ipp(A)	(uA)	UNI	BI
TV04A480K(B)	48.00	53.3	65.1	1	40	85.5	4.7	5	CW	YW
TV04A480J(B)	48.00	53.3	58.9	1	40	77.4	5.2	5	CX	YX
TV04A510K(B)	51.00	56.7	69.3	1	40	91.1	4.4	5	CY	YY
TV04A510J(B)	51.00	56.7	62.7	1	40	82.4	4.9	5	CZ	YZ
TV04A540K(B)	54.00	60.0	73.3	1	40	96.3	4.2	5	RD	ZD
TV04A540J(B)	54.00	60.0	66.3	1	40	87.1	4.6	5	RE	ZE
TV04A580K(B)	58.00	64.4	78.7	1	40	103.0	3.9	5	RF	ZF
TV04A580J(B)	58.00	64.4	71.2	1	40	93.6	4.3	5	RG	ZG
TV04A600K(B)	60.00	66.7	81.5	1	40	107.0	3.7	5	RH	ZH
TV04A600J(B)	60.00	66.7	73.7	1	40	96.8	4.1	5	RK	ZK
TV04A640K(B)	64.00	71.1	86.9	1	40	114.0	3.5	5	RL	ZL
TV04A640J(B)	64.00	71.1	78.6	1	40	103.0	3.9	5	RM	ZM
TV04A700K(B)	70.00	77.8	95.0	1	40	125.0	3.2	5	RN	ZN
TV04A700J(B)	70.00	77.8	86.0	1	40	113.0	3.5	5	RP	ZP
TV04A750K(B)	75.00	83.3	102	1	40	134.0	3.0	5	RQ	ZQ
TV04A750J(B)	75.00	83.3	92.1	1	40	121.0	3.3	5	RR	ZR
TV04A780K(B)	78.00	86.7	106	1	40	139.0	2.9	5	RS	ZS
TV04A780J(B)	78.00	86.7	95.8	1	40	126.0	3.2	5	RT	ZT
TV04A850K(B)	85.00	94.4	115	1	40	151.0	2.6	5	RU	ZU
TV04A850J(B)	85.00	94.4	104	1	40	137.0	2.9	5	RV	ZV
TV04A900K(B)	90.00	100	122	1	40	160.0	2.5	5	RW	ZW
TV04A900J(B)	90.00	100	111	1	40	146.0	2.7	5	RX	ZX
TV04A101K(B)	100.00	111	136	1	40	179.0	2.2	5	RY	ZY
TV04A101J(B)	100.00	111	123	1	40	162.0	2.5	5	RZ	ZZ
TV04A111K(B)	110.00	122	149	1	40	196.0	2.0	5	SD	VD
TV04A111J(B)	110.00	122	135	1	40	177.0	2.3	5	SE	VE
TV04A121K(B)	120.00	133	163	1	40	214.0	1.9	5	SF	VF
TV04A121J(B)	120.00	133	147	1	40	193.0	2.0	5	SG	VG
TV04A131K(B)	130.00	144	176	1	40	231.0	1.7	5	SH	VH
TV04A131J(B)	130.00	144	159	1	40	209.0	1.9	5	SK	VK
TV04A151K(B)	150.00	167	204	1	40	268.0	1.5	5	SL	VL
TV04A151J(B)	150.00	167	185	1	40	243.0	1.6	5	SM	VM
TV04A161K(B)	160.00	178	218	1	40	287.0	1.4	5	SN	VN
TV04A161J(B)	160.00	178	197	1	40	259.0	1.5	5	SP	VP
TV04A171K(B)	170.00	189	231	1	40	304.0	1.3	5	SQ	VQ
TV04A171J(B)	170.00	189	209	1	40	275.0	1.4	5	SR	VR

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 bi-directional devices having VR of 10 volts and under, the IR limit is double.