

TVP04A6V8-G Thru. TVP04A601-G


Breakdown Voltage: 6.8 to 600 Volts

Power Dissipation: 400 Watts

RoHS Device

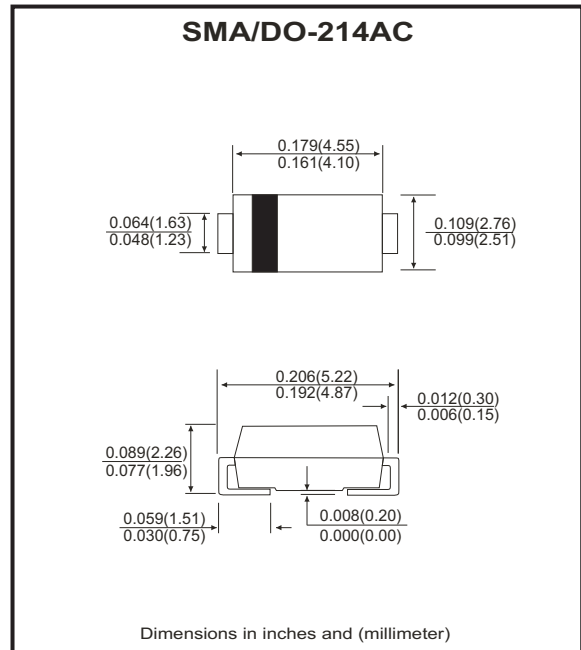


Features

- Glass passivated chip.
- 400W peak pulse power capability with a 10/1000 μ s waveform, repetitive rate (duty cycle):0.01%
- Low leakage.
- Uni and Bidirectional unit.
- Excellent clamping capability.
- Very fast response time.
- UL recognized file # E349157  Range: TVP04A6V8(C)A thru. TVP04A330(C)A

Mechanical Data

- Case: Molded plastic, JEDEC SMA/DO-214AC
- Epoxy: UL 94V-0 rate flame retardant.
- Lead: solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end except Bipolar.
- Weight: 0.069 gram (approx.)



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%.

Parameter	Symbol	Value	Units
Peak power dissipation with a 10/1000 μ s waveform (Note 1)	P _{PP}	400	W
Peak pulse current with a 10/1000 μ s waveform (Note 1)	I _{PP}	See Next Table	A
Power dissipation on infinite heatsink at T _L =75°C	P _D	1.0	W
Peak forward surge current, 8.3ms single half sine-wave uni-directional only (Note 2)	I _{FSM}	40	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 T_A=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.

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Rating and Characteristics Curves (TVP04A6V8-G Thru. TVP04A601-G)

Fig.1 - Pulse Derating Curve

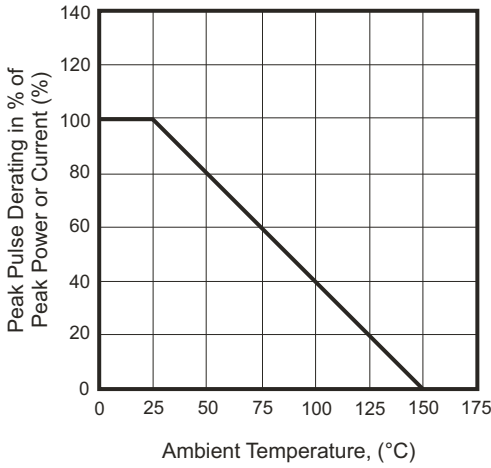


Fig.2 - Max. Non-repetitive Surge Current

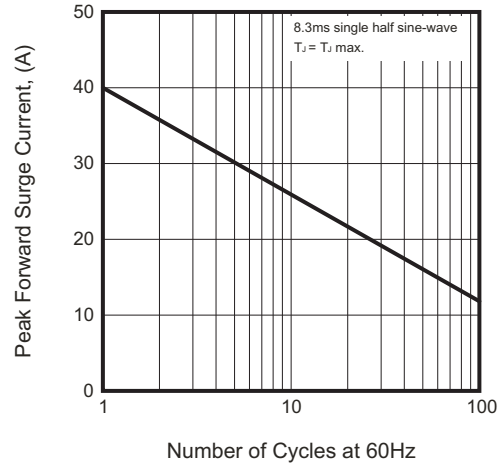


Fig.3 - Steady State Power Derating Curve

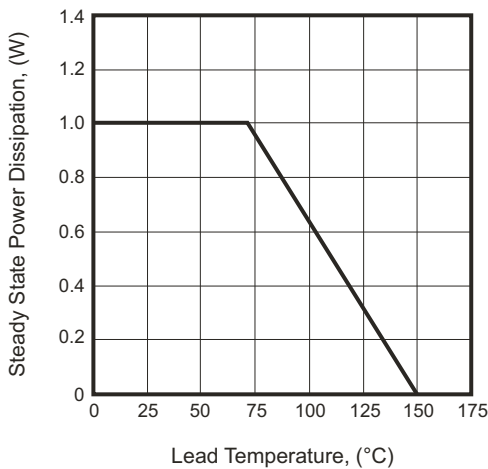


Fig.4 - Peak Pulse Power Rating Curve

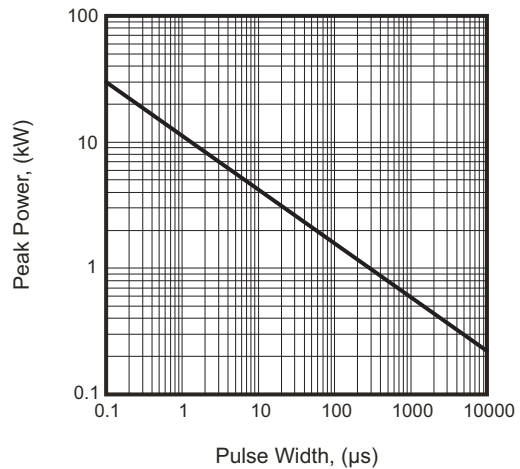


Fig.5 - Pulse Waveform

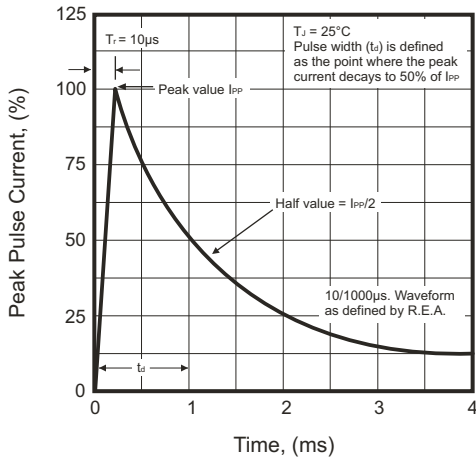
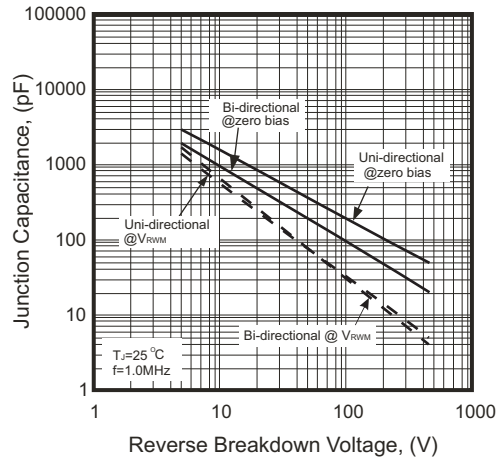


Fig.6 - Typical Junction Capacitance



SMD Transient Voltage Suppressor



Electrical Characteristics (TVP04A6V8-G Thru. TVP04A601-G)

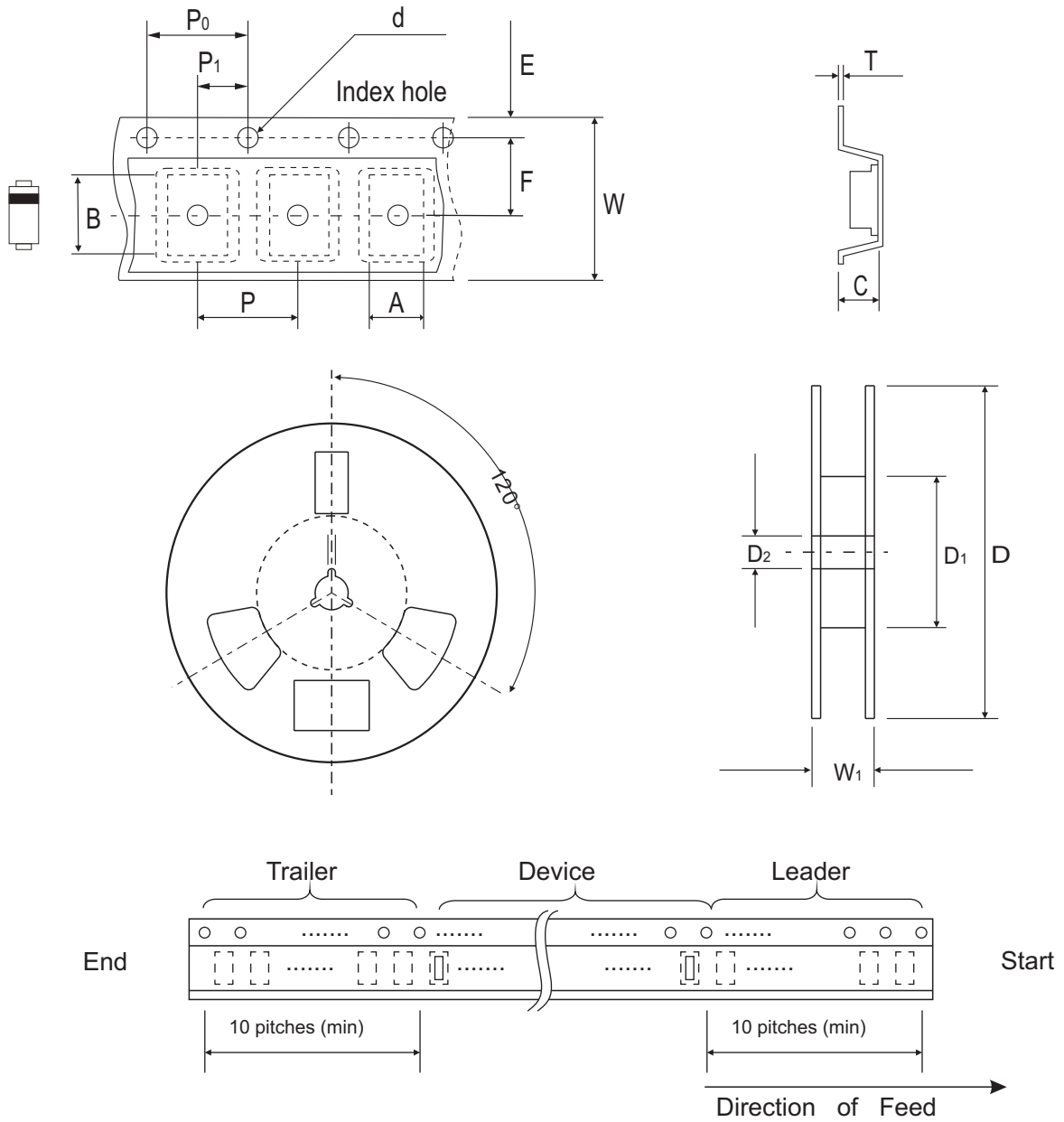
Part No.	Breakdown voltage V _{BR} @ I _T			Maximum Reverse Leakage @V _{RRWM} I _R (uA)	Working Peak Reverse Voltage V _{RRWM} (V)	Maximum Reverse Surge Current I _{PP} (A)	Maximum Clamping Voltage @I _{PP} V _C (V)	Device Marking Code	
	Min. (V)	Max. (V)	I _T (mA)					UNI	BI
TVP04A6V8(C)A-G	6.46	7.14	10	1000	5.8	38.10	10.5	6V8A	6V8C
TVP04A7V5(C)A-G	7.13	7.88	10	500	6.4	35.40	11.3	7V5A	7V5C
TVP04A8V2(C)A-G	7.79	8.61	10	200	7.0	33.06	12.1	8V2A	8V2C
TVP04A9V1(C)A-G	8.65	9.56	1	50	7.8	29.85	13.4	9V1A	9V1C
TVP04A100(C)A-G	9.50	10.50	1	10	8.6	27.59	14.5	10A	10C
TVP04A110(C)A-G	10.45	11.55	1	5	9.4	25.64	15.6	11A	11C
TVP04A120(C)A-G	11.40	12.60	1	5	10.2	23.95	16.7	12A	12C
TVP04A130(C)A-G	12.35	13.65	1	1	11.1	21.98	18.2	13A	13C
TVP04A150(C)A-G	14.25	15.75	1	1	12.8	18.87	21.2	15A	15C
TVP04A160(C)A-G	15.20	16.80	1	1	13.6	17.78	22.5	16A	16C
TVP04A180(C)A-G	17.10	18.90	1	1	15.3	15.87	25.2	18A	18C
TVP04A200(C)A-G	19.00	21.00	1	1	17.1	14.44	27.7	20A	20C
TVP04A220(C)A-G	20.90	23.10	1	1	18.8	13.07	30.6	22A	22C
TVP04A240(C)A-G	22.80	25.20	1	1	20.5	12.05	33.2	24A	24C
TVP04A270(C)A-G	25.65	28.35	1	1	23.1	10.67	37.5	27A	27C
TVP04A300(C)A-G	28.50	31.50	1	1	25.6	9.66	41.4	30A	30C
TVP04A330(C)A-G	31.35	34.65	1	1	28.2	8.75	45.7	33A	33C
TVP04A360(C)A-G	34.20	37.80	1	1	30.8	8.02	49.9	36A	36C
TVP04A390(C)A-G	37.05	40.95	1	1	33.3	7.42	53.9	39A	39C
TVP04A430(C)A-G	40.85	45.15	1	1	36.8	6.75	59.3	43A	43C
TVP04A470(C)A-G	44.65	49.35	1	1	40.2	6.17	64.8	47A	47C
TVP04A510(C)A-G	48.45	53.55	1	1	43.6	5.71	70.1	51A	51C
TVP04A560(C)A-G	53.20	58.80	1	1	47.8	5.19	77.0	56A	56C
TVP04A620(C)A-G	58.90	65.10	1	1	53.0	4.71	85.0	62A	62C
TVP04A680(C)A-G	64.60	71.40	1	1	58.1	4.35	92.0	68A	68C
TVP04A750(C)A-G	71.25	78.75	1	1	64.1	3.88	103.0	75A	75C
TVP04A820(C)A-G	77.90	86.10	1	1	70.1	3.54	113.0	82A	82C
TVP04A910(C)A-G	86.45	95.55	1	1	77.8	3.20	125.0	91A	91C
TVP04A101(C)A-G	95.00	105.00	1	1	85.5	2.92	137.0	100A	100C
TVP04A111(C)A-G	104.50	115.50	1	1	94.0	2.63	152.0	110A	110C
TVP04A121(C)A-G	114.00	126.00	1	1	102.0	2.42	165.0	120A	120C
TVP04A131(C)A-G	123.50	136.50	1	1	111.0	2.23	179.0	130A	130C
TVP04A151(C)A-G	142.50	157.50	1	1	128.0	1.93	207.0	150A	150C
TVP04A161(C)A-G	152.00	168.00	1	1	136.0	1.83	219.0	160A	160C
TVP04A171(C)A-G	161.50	178.50	1	1	145.0	1.71	234.0	170A	170C
TVP04A181(C)A-G	171.00	189.00	1	1	154.0	1.63	246.0	180A	180C
TVP04A201(C)A-G	190.00	210.00	1	1	171.0	1.46	274.0	200A	200C
TVP04A221(C)A-G	209.00	231.00	1	1	185.0	1.22	328.0	220A	220C
TVP04A251(C)A-G	237.50	262.50	1	1	214.0	1.16	344.0	250A	250C
TVP04A301(C)A-G	285.00	315.00	1	1	256.0	0.97	414.0	300A	300C
TVP04A351(C)A-G	332.50	367.50	1	1	299.3	0.83	482.0	350A	350C
TVP04A381(C)A-G	361.00	399.00	1	1	324.9	0.76	524.4	380A	380C
TVP04A401(C)A-G	380.00	420.00	1	1	342.0	0.72	552.0	400A	400C
TVP04A441(C)A-G	418.00	462.00	1	1	376.2	0.66	607.2	440A	440C
TVP04A501(C)A-G	475.00	525.00	1	1	427.5	0.58	690.0	500A	500C
TVP04A521(C)A-G	494.00	546.00	1	1	444.6	0.56	717.6	520A	520C
TVP04A551(C)A-G	522.50	577.50	1	1	470.3	0.53	759.0	550A	550C
TVP04A601(C)A-G	570.00	630.00	1	1	513.0	0.48	828.0	600A	600C

Note: 1) Suffix A denotes 5% tolerance devices.
 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.

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REV:B

Reel Taping Specification



SMA/DO-214AC	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	2.79 ± 0.10	5.33 ± 0.10	4.50 (max)	1.75 ± 0.10	330MAX	50.0 MIN.	13.0 ± 0.2
	(inch)	0.110 ± 0.004	0.210 ± 0.004	0.177 (max)	0.069 ± 0.004	13.00MAX	1.969 MIN.	0.512 ± 0.008

SMA/DO-214AC	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	5.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	12.0 ± 0.30	18.4 MAX.
	(inch)	0.069 ± 0.004	0.216 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.472 ± 0.012	0.724 MAX.

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REV:B

Marking Code

1. **C**: COMCHIP

2. **○**: Package

○	PKG
A	SMA
B	SMB
C	SMC

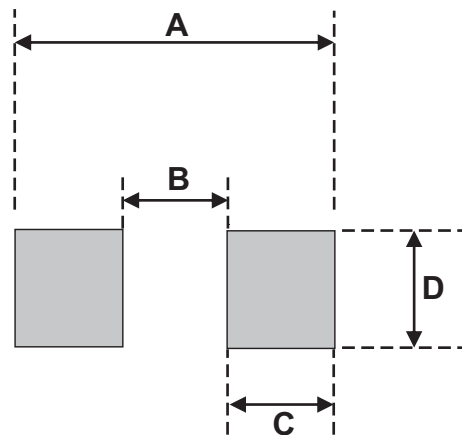
3. XXX/XXXX: Marking code (see Page. 3)

4. **█**: Cathod Band



Suggested PAD Layout

SIZE	DO-214AC(SMA)	
	(mm)	(inch)
A	5.28	0.208
B	1.88 MAX	0.074 MAX
C	1.52 MIN	0.060 MIN
D	1.68 MIN	0.066 MIN



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
DO-214AC (SMA)	5,000	13