

SMD Transient Voltage Suppressor



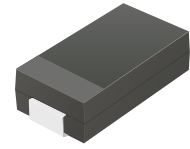
SMD Diodes Specialist

TV15CJ6V8-G Thru. TV15CJ601-G

Breakdown Voltage: 6.8 to 600 Volts

Peak Pulse Power : 1500Watts

RoHS Device

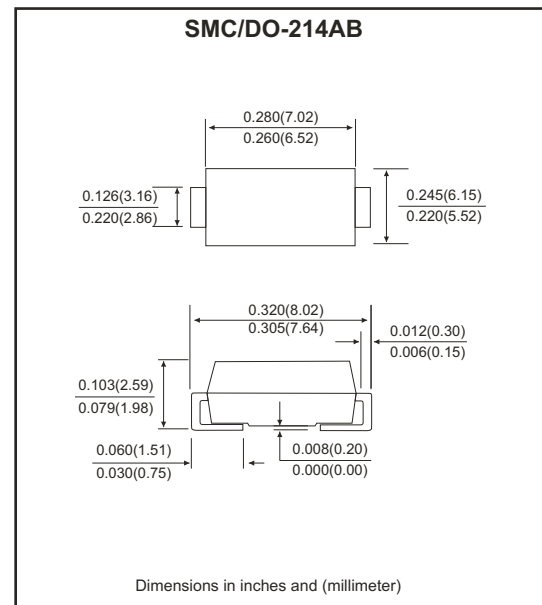


Features

- Glass passivated chip.
- 1500W 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

Mechanical Data

- Case: JEDEC DO-214AB molded plastic.
- Epoxy: UL 94V0 rate flame retardant
- Terminals: solderable per MIL-STD-750, method 2026.
- Polarity: Color band denotes cathode end except bipolar.



Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specific.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristics	Symbol	Value	Units
Peak power dissipation at 10/1000 μ s waveform ⁽¹⁾	P _{PPM}	1500	W
Peak pulse current at 10/1000 μ s waveform ⁽¹⁾	I _{PP}	See table 1	A
Steady state power dissipation at T _L =75°C	P _D	6.5	W
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load, uni-directional only ⁽²⁾	I _{FSM}	200	A
Maximum instantaneous forward voltage at 100A for uni-directional only ⁽³⁾	V _F	3.5/5.0	V
Operation junction temperature range	T _J	-55 to +150	°C
Storage temperature range	T _{STG}	-55 to +150	°C

Notes:

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 pulses 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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Ratings and Characteristics Curve (TV15CJ6V8-G Thru. TV15CJ601-G)

Fig.1 Pulse Derating Curve

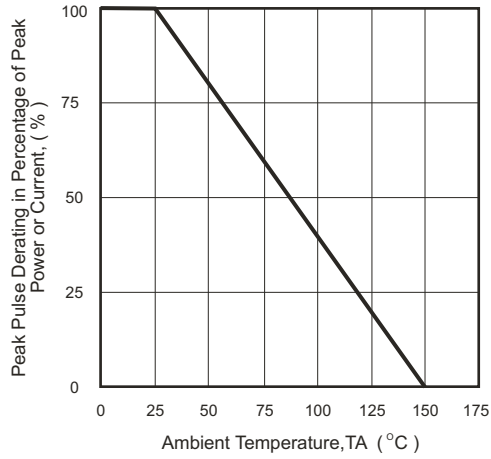


Fig.2 Max. Non-Repetitive Surge Current

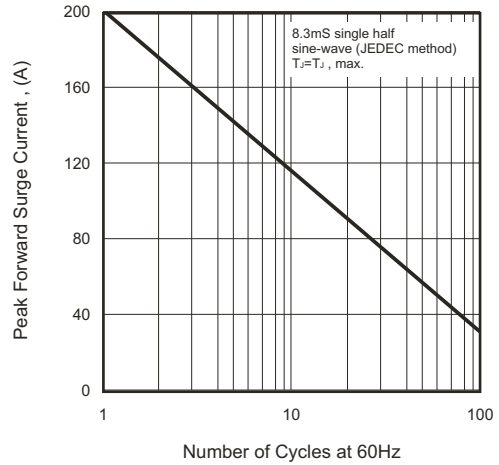


Fig.3 Steady State Power Derating Curve

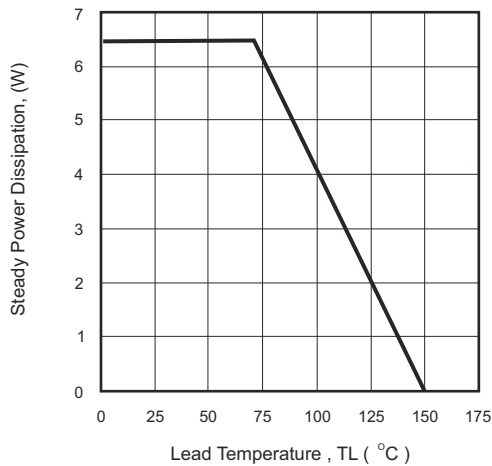


Fig.4 Peak Pulse Power Rating Curve

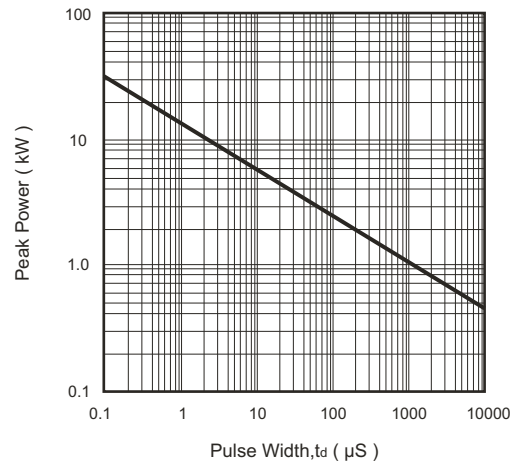


Fig.5 Pulse Waveform

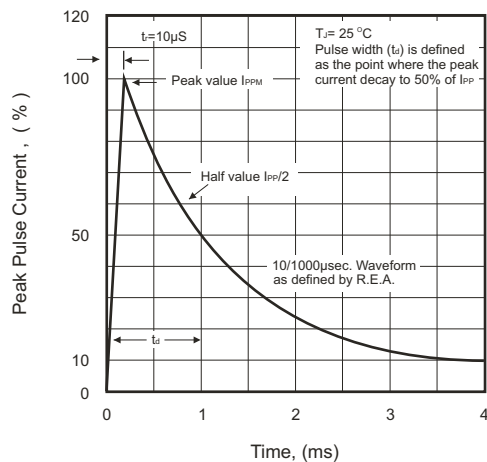
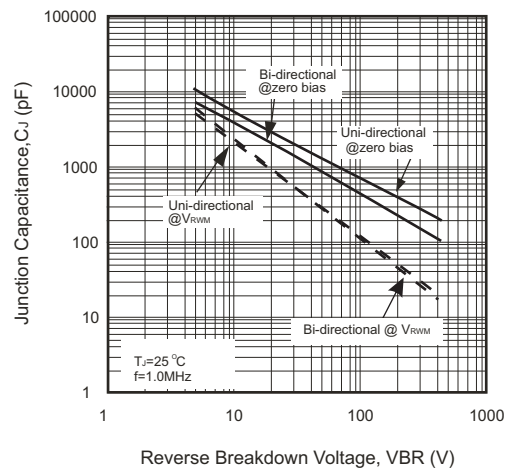


Fig.6 Typical Junction Capacitance



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Electrical Characteristics (TV15CJ6V8-G Thru. TV15CJ601-G)

Part No.		Absolute Maximum Rating (Ta=25°C)					Electrical Characteristics (Ta=25°C)			Marking Code.	
Uni	Bi	V _{RWM}	V _{BR} Min.	V _{BR} Max.	I _T	I _{FSM}	Max. Vc @I _{PPM}		Max. I _R @V _{RWM}	Uni	Bi
		(V)	(V)	(V)	(mA)	(A)@8.3ms	(V)	I _{PPM} (A)	µA		
TV15CJ6V8A-G	TV15CJ6V8CA-G	5.80	6.46	7.14	10	200	10.5	142.86	1000	6V8A	6V8C
TV15CJ7V5A-G	TV15CJ7V5CA-G	6.40	7.13	7.88	10	200	11.3	132.74	500	7V5A	7V5C
TV15CJ8V2A-G	TV15CJ8V2CA-G	7.00	7.79	8.61	1.0	200	12.1	123.97	200	8V2A	8V2C
TV15CJ9V1A-G	TV15CJ9V1CA-G	7.80	8.65	9.56	1.0	200	13.4	111.94	50	9V1A	9V1C
TV15CJ100A-G	TV15CJ100CA-G	8.60	9.50	10.50	1.0	200	14.5	103.45	10	10A	10C
TV15CJ110A-G	TV15CJ110CA-G	9.40	10.45	11.55	1.0	200	15.6	96.15	5	11A	11C
TV15CJ120A-G	TV15CJ120CA-G	10.20	11.40	12.60	1.0	200	16.7	89.82	5	12A	12C
TV15CJ130A-G	TV15CJ130CA-G	11.10	12.35	13.65	1.0	200	18.2	82.42	5	13A	13C
TV15CJ150A-G	TV15CJ150CA-G	12.80	14.25	15.75	1.0	200	21.2	70.75	5	15A	15C
TV15CJ160A-G	TV15CJ160CA-G	13.60	15.20	16.80	1.0	200	22.5	66.67	5	16A	16C
TV15CJ180A-G	TV15CJ180CA-G	15.30	17.00	18.90	1.0	200	25.2	59.52	5	18A	18C
TV15CJ200A-G	TV15CJ200CA-G	17.10	19.00	21.00	1.0	200	27.7	54.15	5	20A	20C
TV15CJ220A-G	TV15CJ220CA-G	18.80	20.90	23.10	1.0	200	30.6	49.02	5	22A	22C
TV15CJ240A-G	TV15CJ240CA-G	20.50	22.80	25.20	1.0	200	33.2	45.18	5	24A	24C
TV15CJ270A-G	TV15CJ270CA-G	23.10	25.65	28.35	1.0	200	37.5	40.00	5	27A	27C
TV15CJ300A-G	TV15CJ300CA-G	25.60	28.50	31.50	1.0	200	41.4	36.23	5	30A	30C
TV15CJ330A-G	TV15CJ330CA-G	28.20	31.35	34.65	1.0	200	45.7	32.82	5	33A	33C
TV15CJ360A-G	TV15CJ360CA-G	30.80	34.20	37.80	1.0	200	49.9	30.06	5	36A	36C
TV15CJ390A-G	TV15CJ390CA-G	33.30	37.05	40.95	1.0	200	53.9	27.83	5	39A	39C
TV15CJ430A-G	TV15CJ430CA-G	36.80	40.85	45.15	1.0	200	59.3	25.30	5	43A	43C
TV15CJ470A-G	TV15CJ470CA-G	40.20	44.65	49.35	1.0	200	64.8	23.15	5	47A	47C
TV15CJ510A-G	TV15CJ510CA-G	43.60	48.45	53.55	1.0	200	70.1	21.40	5	51A	51C
TV15CJ560A-G	TV15CJ560CA-G	47.80	53.20	58.80	1.0	200	77.0	19.48	5	56A	56C
TV15CJ620A-G	TV15CJ620CA-G	53.00	58.90	65.10	1.0	200	85.0	17.65	5	62A	62C
TV15CJ680A-G	TV15CJ680CA-G	58.10	64.60	71.40	1.0	200	92.0	16.30	5	68A	68C
TV15CJ750A-G	TV15CJ750CA-G	64.10	71.25	78.75	1.0	200	103.0	14.56	5	75A	75C
TV15CJ820A-G	TV15CJ820CA-G	70.10	77.90	86.10	1.0	200	113.0	13.27	5	82A	82C
TV15CJ910A-G	TV15CJ910CA-G	77.80	86.45	95.55	1.0	200	125.0	12.00	5	91A	91C
TV15CJ101A-G	TV15CJ101CA-G	85.50	95.00	105.00	1.0	200	137.0	10.95	5	100A	100C
TV15CJ111A-G	TV15CJ111CA-G	94.00	104.50	115.50	1.0	200	152.0	9.87	5	110A	110C
TV15CJ121A-G	TV15CJ121CA-G	102.00	114.00	126.00	1.0	200	165.0	9.09	5	120A	120C
TV15CJ131A-G	TV15CJ131CA-G	111.00	123.50	136.50	1.0	200	179.0	8.38	5	130A	130C
TV15CJ151A-G	TV15CJ151CA-G	128.00	142.50	157.50	1.0	200	207.0	7.25	5	150A	150C
TV15CJ161A-G	TV15CJ161CA-G	136.00	152.00	168.00	1.0	200	219.0	6.85	5	160A	160C
TV15CJ171A-G	TV15CJ171CA-G	145.00	161.50	178.50	1.0	200	234.0	6.41	5	170A	170C
TV15CJ181A-G	TV15CJ181CA-G	154.00	171.00	189.00	1.0	200	246.0	6.10	5	180A	180C
TV15CJ201A-G	TV15CJ201CA-G	171.00	190.00	214.00	1.0	200	274.0	5.47	5	200A	200C
TV15CJ221A-G	TV15CJ221CA-G	185.00	209.00	231.00	1.0	200	328.0	4.57	5	220A	220C
TV15CJ251A-G	TV15CJ251CA-G	214.00	237.50	262.50	1.0	200	344.0	4.36	5	250A	250C
TV15CJ301A-G	TV15CJ301CA-G	256.00	285.00	315.00	1.0	200	414.0	3.62	5	300A	300C
TV15CJ351A-G	TV15CJ351CA-G	299.30	332.50	367.50	1.0	200	482.0	3.11	5	350A	350C
TV15CJ381A-G	TV15CJ381CA-G	342.90	361.00	399.00	1.0	200	524.4	2.86	5	380A	380C
TV15CJ401A-G	TV15CJ401CA-G	342.00	380.00	420.00	1.0	200	548.0	2.72	5	400A	400C
TV15CJ441A-G	TV15CJ441CA-G	376.20	418.00	462.00	1.0	200	602.0	2.47	5	440A	440C

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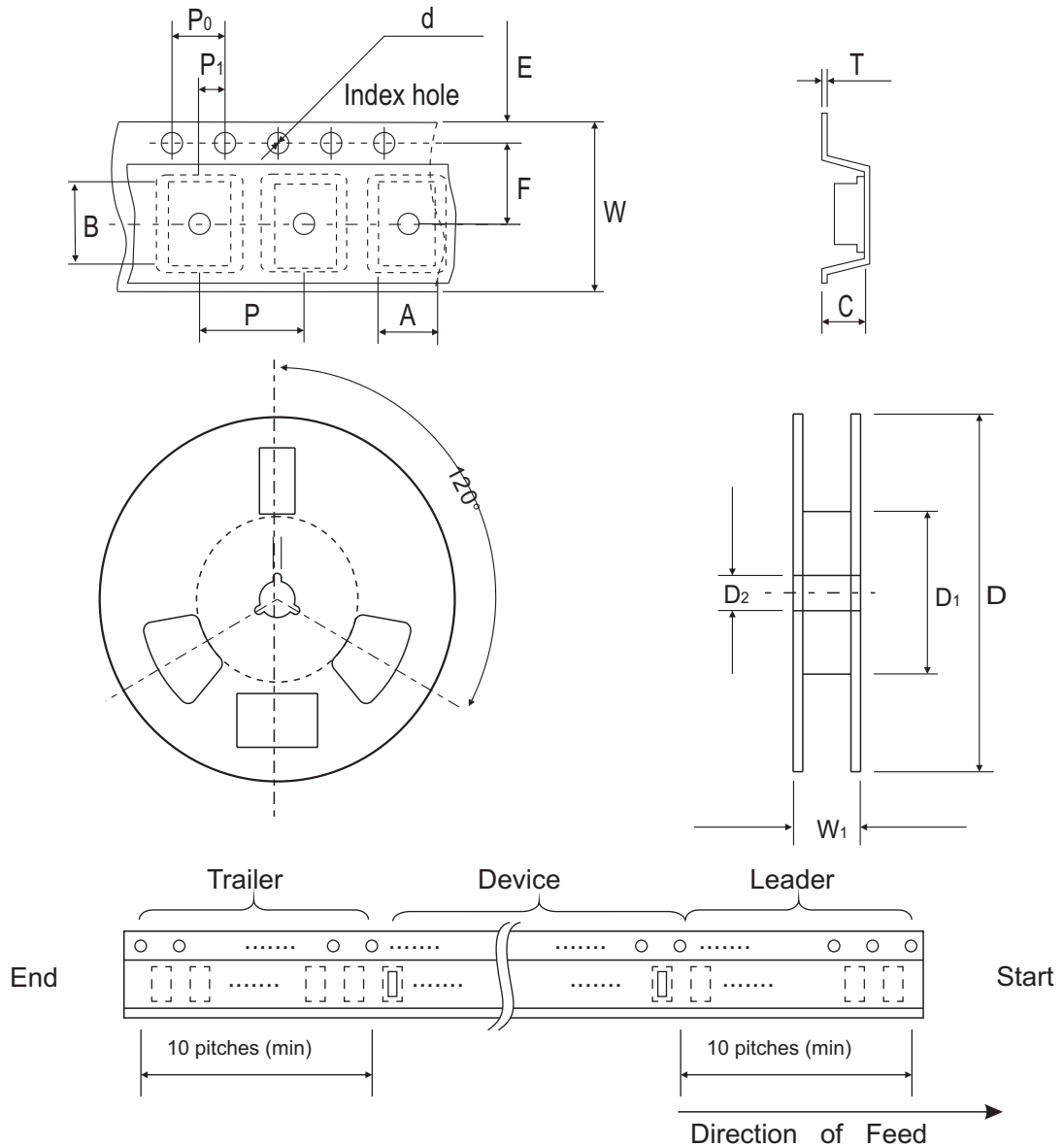
Electrical Characteristics (TV15CJ6V8-G Thru. TV15CJ601-G)

Part No.		Absolute Maximum Rating (Ta=25°C)					Electrical Characteristics (Ta=25°C)			Marking Code.	
Uni	Bi	V _{RWM}	V _{BR} Min.	V _{BR} Max.	I _T	I _{FSM}	Max. V _C @I _{PPM}		Max. I _R @V _{RWM}	Uni	Bi
		(V)	(V)	(V)	(mA)	(A)@8.3mS	(V)	I _{PPM} (A)	uA		
TV15CJ501A-G	TV15CJ501CA-G	427.5	475.00	525.00	1.0	200	690.00	2.17	5	500A	500C
TV15CJ521A-G	TV15CJ521CA-G	444.6	494.00	546.00	1.0	200	717.60	2.09	5	520A	520C
TV15CJ551A-G	TV15CJ551CA-G	470.3	522.50	577.50	1.0	200	759.00	1.98	5	550A	550C
TV15CJ601A-G	TV15CJ601CA-G	513.0	570.00	630.00	1.0	200	828.00	1.81	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.

Reel Taping Specification



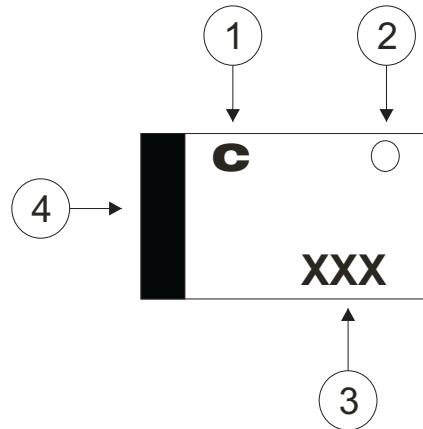
DO-214AB (SMC)	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	6.05 ± 0.10	8.31 ± 0.10	3.29 (max)	1.55 ± 0.10-0.0	330	50.0 MIN.	13.0 ± 0.20
	(inch)	0.256 ± 0.004	0.327 ± 0.004	0.130 (max)	0.061 ± 0.004	13.00	1.969 MIN.	0.512 ± 0.008

DO-214AB (SMC)	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	7.50 ± 0.10	8.00 ± 0.10	4.00 ± 0.10	2.00 ± 1.00	16.0 ± 0.30	22.4 MAX.
	(inch)	0.069 ± 0.004	0.295 ± 0.004	0.315 ± 0.004	0.157 ± 0.004	0.079 ± 0.040	0.630 ± 0.012	0.882 MAX.

Marking Code

1. C: COMCHIP
2. 0: Package

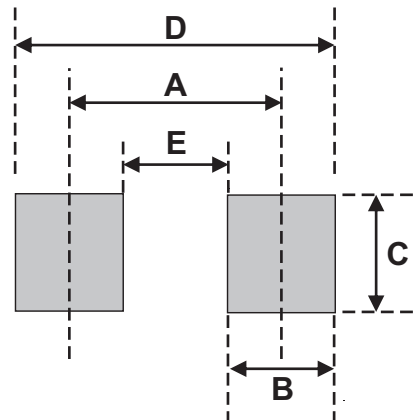
○	PKG
C	SMC



3. XXX: Marking code(see Page. 3~4)
4. █: Cathod Band

Suggested PAD Layout

SIZE	DO-214AB(SMC)	
	(mm)	(inch)
A	6.20	0.244
B	1.60	0.063
C	4.80	0.189
D	7.80	0.307
E	4.60	0.181



Standard Package

Case Type	Qty per Reel	Reel Size
	(Pcs)	(inch)
DO-214AB (SMC)	3000	13