

SMD Transient Voltage Suppressor



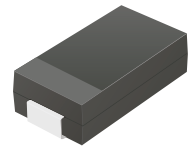
SMD Diodes Specialist

TV15CJ6V8-G Thru. TV15CJ601-G

Breakdown Voltage: 6.8 to 600 Volts

Peak Pulse Power : 1500Watts

RoHS Device

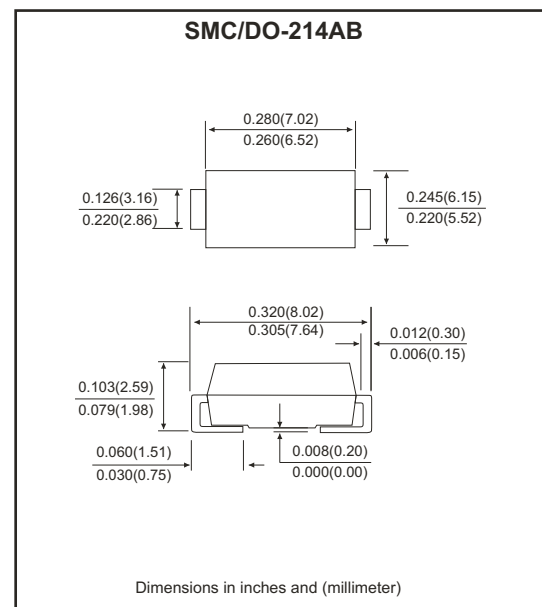


Features

- 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 specified.
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

Page 1

SMD Transient Voltage Suppressor



SMD Diodes Specialist

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

Fig.1 Pulse Derating Curve

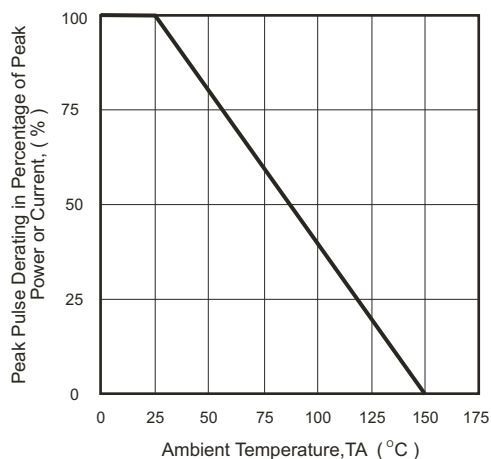


Fig.2 Max. Non-Repetitive Surge Current

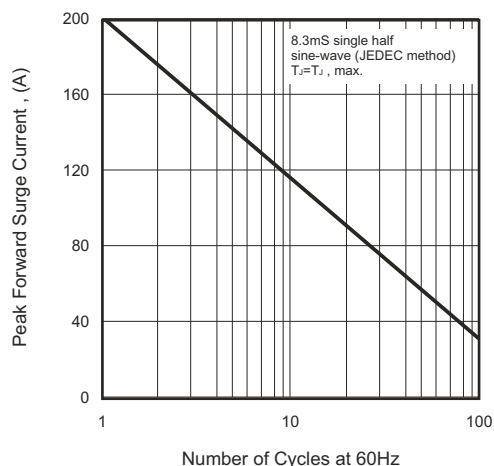


Fig.3 Steady State Power Derating Curve

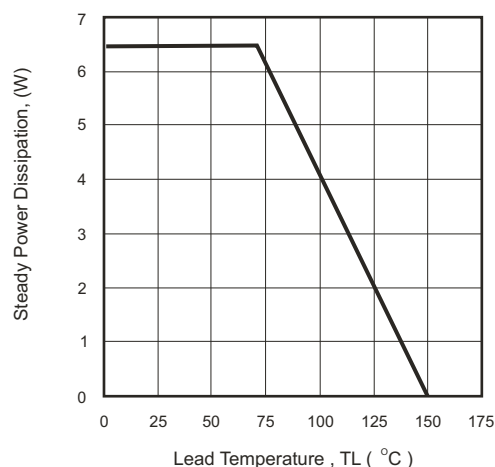


Fig.4 Peak Pulse Power Rating Curve

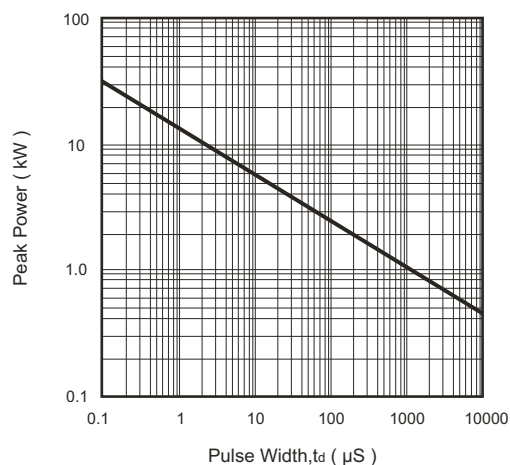


Fig.5 Pulse Waveform

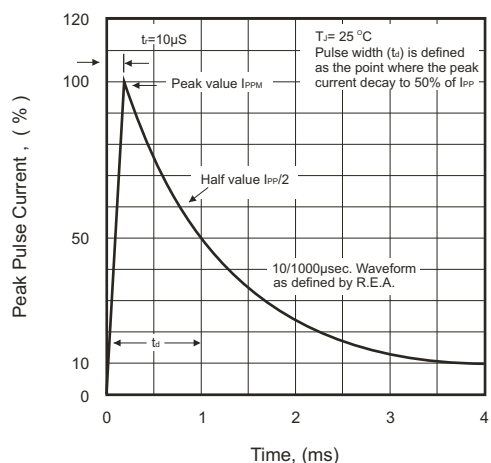
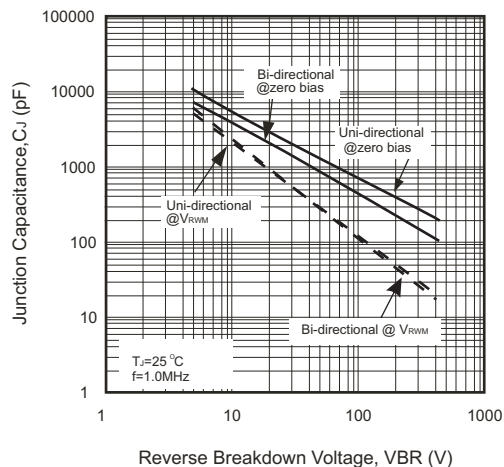


Fig.6 Typical Junction Capacitance



SMD Transient Voltage Suppressor



SMD Diodes Specialist

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)	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

Rev. A

Page 3

SMD Transient Voltage Suppressor



SMD Diodes Specialist

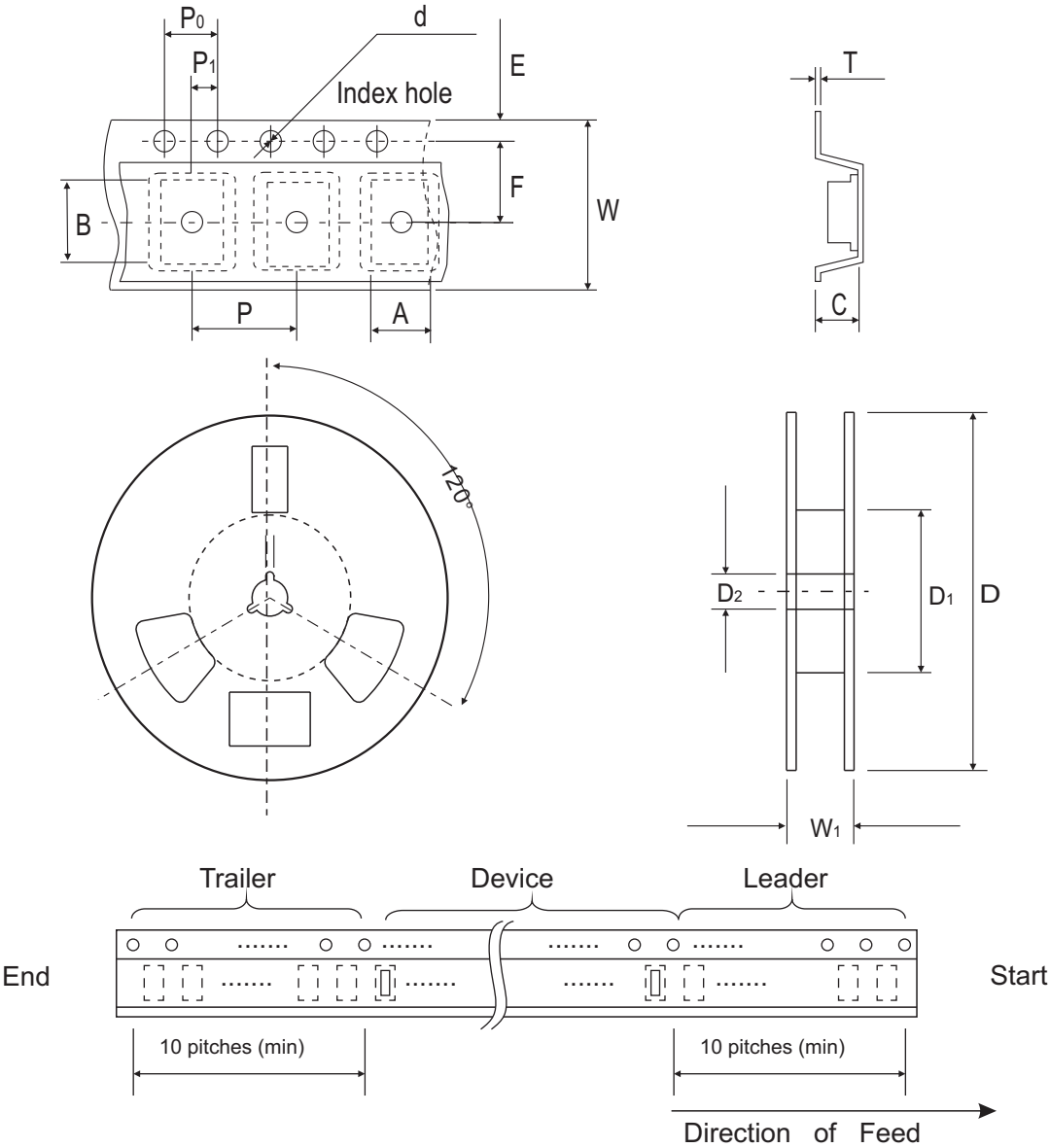
Electrical Characteristics (TV15CJ6V8-G Thru. TV15CJ601-G)

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 $\pm 10\%$) 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

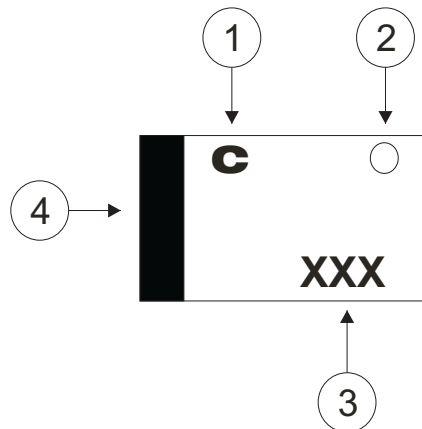
1. C: COMCHIP

2. 0: Package

○	PKG
C	SMC

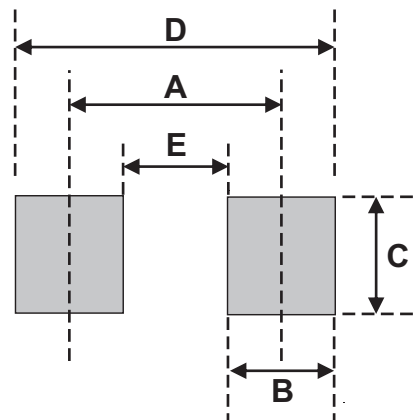
3. XXX: Marking code(see Page. 3~4)

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