瑞隆源电子
RuilongYuan Electronics

Transient Voltage Suppressors Diodes

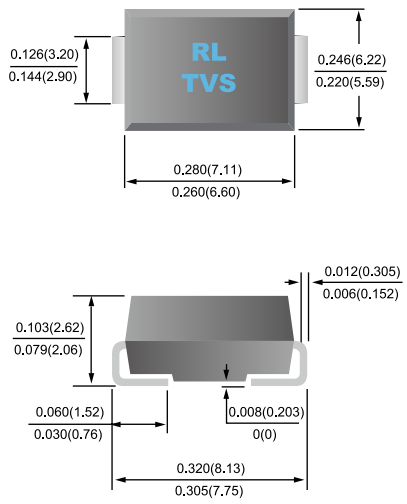
Surface Mount- 1500W > SMCJ5.0~440CA Series

The SMCJ series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

Features

- Halogen-free
- Rohs compliant
- Typical maximum temperature coefficient
- ΔV_{BR} = 0.1% x V_{BR}@25°C x ΔT
- Glass passivated Chip junction in DO-214AB package
- 1500W peak pulse capadility at 10×1000μs waveform, repetition rate (duty cycles):0.01%
- Fast response time:typically less than 1.0ps from 0 Volts to BV min
- Excellent clamping capability
- Low incremental surge resistance
- Typical I_R less than 5μA above 12V
- High temperature soldering guaranteed: 260°C/40 seconds / 0.375”,
- (9.5mm) lead length, 5lbs., (2.3kg) tension
- Plastic package has underwriters laboratory flammability classification 94v-0

SMC/DO-214AB **unit:inch(mm)**



Applications

TVS devices are ideal for the protection of I/O interfaces, V_{CC} bus and other vulnerable circuits used in telecom,computer, industrial and consumer electronic applications.

Maximum Ratings And Characteristics (TA=25°C unless otherwise noted)

Rating	Symbol	Value	Units
Peak Pulse Power Dissipation at TA=25°C by 10x1000μs waveform (Fig.1)(Note 1), (Note 2)	P_{PPM}	1500	Watts
Power Dissipation on infinite heat sink at TA=50°C	P_D	6.5	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	I_{FSM}	200	Amps
Maximum Instantaneous Forward Voltage at 25A for Unidirectional only (Note 4)	V_F	3.5V/5.0	V
Operating junction and Storage Temperature Range.	T_J,T_{STG}	-55 to 150	°C
Typical Thermal Resistance Junction to Lead	R_{uJL}	15	°C/W
Typical Thermal Resistance Junction to Ambient	R_{uJA}	75	°C/W

Notes:
1. Non-repetitive current pulse , per Fig. 3 and derated above T_A = 25°C per Fig. 2.
2. Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4 perminute 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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Electriacl Characteristics

Type Number		Device Marking Code		Reverse Stand-Off Voltage	Breakdown Voltage@I_T		Test Current	Maximum Clamping Voltage@I_{PP}	Peak Pulse Current	Reverse Leakage @V_{RWM}
(UNI)	(BI)	UNI	BI	V_{RWM}(V)	$V_{BR\ MIN.}$(V)	$V_{BR\ MAX.}$(V)	I_T(mA)	V_C(V)	I_{PP}(A)	I_R(μA)
SMCJ5.0A	SMCJ5.0CA	GDE	BDE	5.0	6.40	7.25	10	9.2	163.0	800
SMCJ6.0A	SMCJ6.0CA	GDG	BDG	6.0	6.67	7.67	10	10.3	145.7	800
SMCJ6.5A	SMCJ6.5CA	GDK	BDK	6.5	7.22	8.30	10	11.2	134.0	500
SMCJ7.0A	SMCJ7.0CA	GDM	BDM	7.0	7.78	8.95	10	12.0	125.0	200
SMCJ7.5A	SMCJ7.5CA	GDP	BDP	7.5	8.33	9.58	1	12.9	116.3	100
SMCJ8.0A	SMCJ8.0CA	GDR	BDR	8.0	8.89	10.23	1	13.6	110.3	50
SMCJ8.5A	SMCJ8.5CA	GDT	BDT	8.5	9.44	10.82	1	14.4	104.2	20
SMCJ9.0A	SMCJ9.0CA	GDV	BDV	9.0	10.00	11.50	1	15.4	97.4	10
SMCJ10A	SMCJ10CA	GDX	BDX	10.0	11.10	12.80	1	17.0	88.3	5
SMCJ11A	SMCJ11CA	GDZ	BDZ	11.0	12.20	14.00	1	18.2	82.5	5
SMCJ12A	SMCJ12CA	GEE	BEE	12.0	13.30	15.30	1	19.9	75.4	5
SMCJ13A	SMCJ13CA	GEG	BEG	13.0	14.40	16.50	1	21.5	69.8	5
SMCJ14A	SMCJ14CA	GEK	BEK	14.0	15.60	17.90	1	23.2	64.7	5
SMCJ15A	SMCJ15CA	GEM	BEM	15.0	16.70	19.20	1	24.4	61.5	5
SMCJ16A	SMCJ16CA	GEP	BEP	16.0	17.80	20.50	1	26.0	57.7	5
SMCJ17A	SMCJ17CA	GER	BER	17.0	18.90	21.70	1	27.6	54.4	5
SMCJ18A	SMCJ18CA	GET	BET	18.0	20.00	23.30	1	29.2	51.4	5
SMCJ20A	SMCJ20CA	GEV	BEV	20.0	22.20	25.50	1	32.4	46.3	5
SMCJ22A	SMCJ22CA	GEX	BEX	22.0	24.40	28.00	1	35.5	42.3	5
SMCJ24A	SMCJ24CA	GEZ	BEZ	24.0	26.70	30.70	1	38.9	38.6	5
SMCJ26A	SMCJ26CA	GFE	BFE	26.0	28.90	33.20	1	42.1	35.7	5
SMCJ28A	SMCJ28CA	GFG	BFG	28.0	31.10	35.80	1	45.4	33.1	5
SMCJ30A	SMCJ30CA	GFK	BFK	30.0	33.30	38.30	1	48.4	31.0	5
SMCJ33A	SMCJ33CA	GFM	BFM	33.0	36.70	42.20	1	53.3	28.2	5
SMCJ36A	SMCJ36CA	GFP	BFP	36.0	40.00	46.00	1	58.1	25.9	5
SMCJ40A	SMCJ40CA	GFR	BFR	40.0	44.40	51.10	1	64.5	23.3	5
SMCJ43A	SMCJ43CA	GFT	BFT	43.0	47.80	54.90	1	69.4	21.7	5
SMCJ45A	SMCJ45CA	GFV	BFV	45.0	50.00	57.50	1	72.7	20.6	5
SMCJ48A	SMCJ48CA	GFX	BFX	48.0	53.30	61.30	1	77.4	19.4	5
SMCJ51A	SMCJ51CA	GFZ	BFZ	51.0	56.70	65.20	1	82.4	18.2	5
SMCJ54A	SMCJ54CA	GGE	BGE	54.0	60.00	69.00	1	87.1	17.3	5
SMCJ58A	SMCJ58CA	GGG	BGG	58.0	64.40	74.10	1	93.6	16.1	5
SMCJ60A	SMCJ60CA	GGK	BGK	60.0	66.70	76.70	1	96.8	15.5	5
SMCJ64A	SMCJ64CA	GGM	BGM	64.0	71.10	81.80	1	103.0	14.6	5
SMCJ70A	SMCJ70CA	GGP	BGP	70.0	77.80	89.50	1	113.0	13.3	5
SMCJ75A	SMCJ75CA	GGR	BGR	75.0	83.30	95.80	1	121.0	12.4	5
SMCJ78A	SMCJ78CA	GGT	BGT	78.0	86.70	99.70	1	126.0	11.9	5
SMCJ85A	SMCJ85CA	GGV	BGV	85.0	94.40	108.20	1	137.0	11.0	5
SMCJ90A	SMCJ90CA	GGX	BGX	90.0	100.00	115.50	1	146.0	10.3	5
SMCJ100A	SMCJ100CA	GGZ	BGZ	100.0	111.00	128.00	1	162.0	9.3	5
SMCJ110A	SMCJ110CA	GHE	BHE	110.0	122.00	140.50	1	177.0	8.5	5
SMCJ120A	SMCJ120CA	GHG	BHG	120.0	133.00	153.00	1	193.0	7.8	5
SMCJ130A	SMCJ130CA	GHK	BHK	130.0	144.00	165.50	1	209.0	7.2	5
SMCJ150A	SMCJ150CA	GHM	BHM	150.0	167.00	192.60	1	243.0	6.2	5
SMCJ160A	SMCJ160CA	GHP	BHP	160.0	178.00	197.00	1	259.0	5.8	5
SMCJ170A	SMCJ170CA	GHR	BHR	170.0	189.00	209.00	1	275.0	5.5	5
SMCJ180A	SMCJ180CA	GHP	BHP	180.0	198.00	222.00	1	292.0	5.1	5
SMCJ190A	SMCJ190CA	GHT	BHT	190.0	209.00	243.20	1	308.0	4.8	5
SMCJ200A	SMCJ200CA	GHV	BHV	200.0	220.00	247.00	1	324.0	4.6	5
SMCJ220A	SMCJ220CA	GHX	BHX	220.0	242.00	272.00	1	356.0	4.2	5
SMCJ250A	SMCJ250CA	GHZ	BHZ	250.0	279.00	309.00	1	405.0	3.7	5
SMCJ300A	SMCJ300CA	GJE	BJE	300.0	335.00	371.00	1	486.0	3.1	5
SMCJ350A	SMCJ350CA	GJG	BJG	350.0	391.00	432.00	1	567.0	2.6	5
SMCJ400A	SMCJ400CA	GJK	BJK	400.0	447.00	494.00	1	648.0	2.3	5
SMCJ440A	SMCJ440CA	GJM	BJM	440.0	492.00	543.00	1	713.0	2.1	5

All data is subject to change,Please check our data sheets at ***www ruilon com*** for updates. ©2011 RuiLong Yuan,Inc.

Ratings and Characteristic Curves (T_A=25°C unless otherwise noted)

Figure 1 - Peak Pulse Power Rating

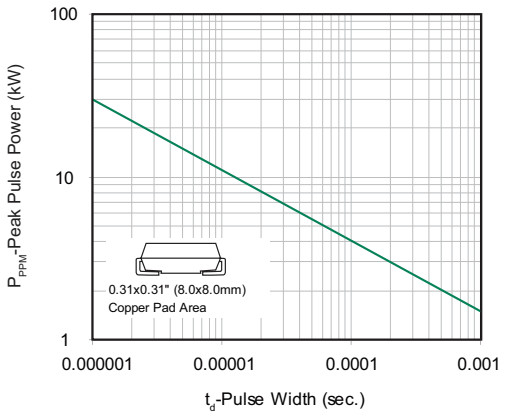


Figure 2 - Pulse Derating Curve

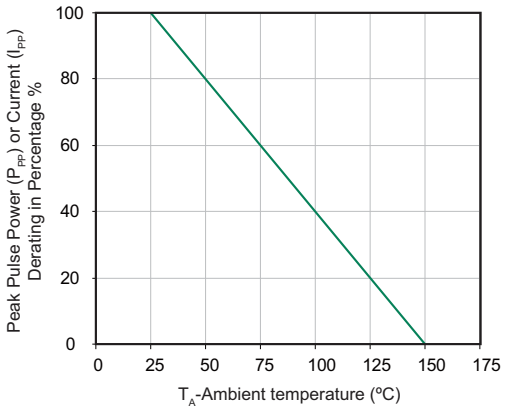


Figure 3 - Pulse Waveform

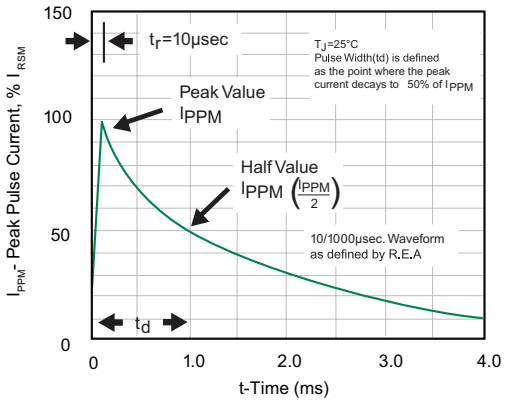


Figure 4 - Typical Junction Capacitance

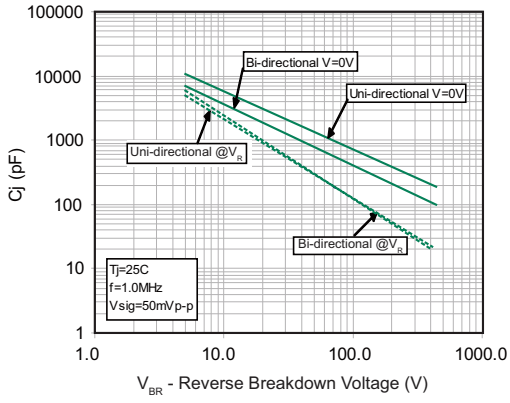


Figure 5 - Steady State Power Dissipation Derating Curve

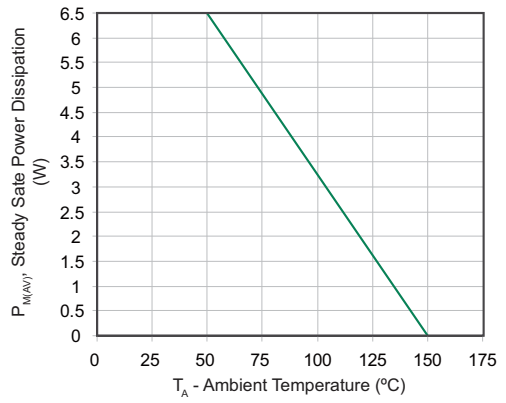
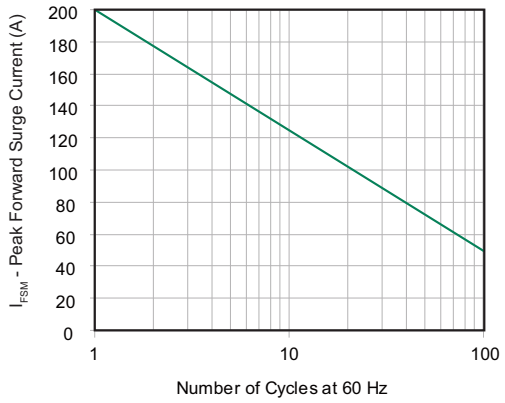


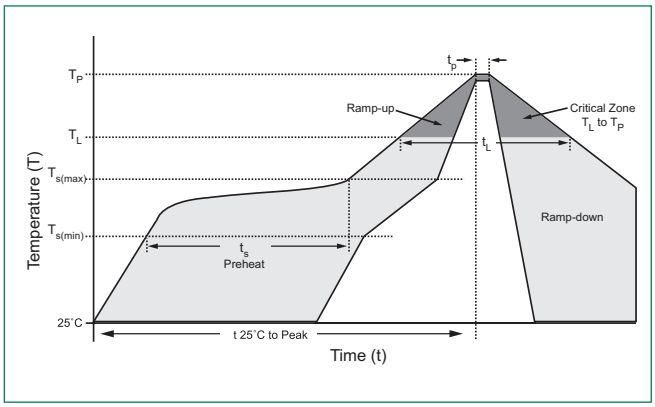
Figure 6 - Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional Only



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Soldering Parameters

Reflow Condition		Lead–free assembly
Pre Heat	-Temperature Min ($T_{s(min)}$)	150°C
	-Temperature Max ($T_{s(max)}$)	200°C
	-Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	-Temperature (T_L) (Liquidus)	217°C
	-Time (min to max) (t_s)	60 – 150 seconds
Peak Temperature (T_P)		$260^{+0/-5}$ °C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		280°C



Physical Specifications

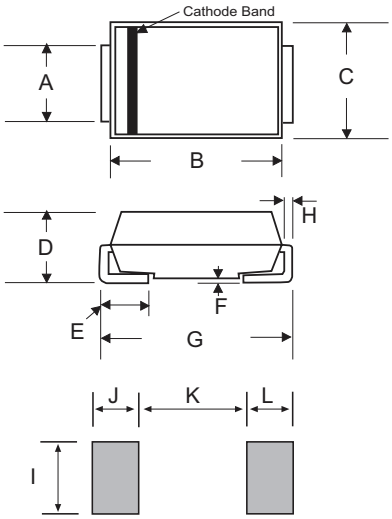
Weight	0.007 ounce, 0.21 grams
Case	JEDEC DO214AB. Molded plastic body over glass passivated junction
Polarity	Color band denotes positive end (cathode) except Bidirectional.
Terminal	Matte Tin-plated leads, Solderable per JESD22-B102D

Environmental Specifications

Temperature Cycle	JESD22-A104
Pressure Cooker	JESD 22-A102
High Temp. Storage	JESD22-A103
HTRB	JESD22-A108
Thermal Shock	JESD22-A106

Dimensions

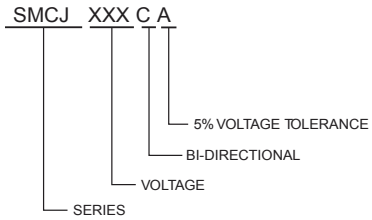
DO-214AB (SMC J-Bend)



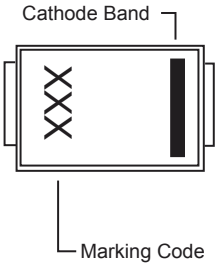
Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.114	0.126	2.900	3.200
B	0.260	0.280	6.600	7.110
C	0.220	0.245	5.590	6.220
D	0.079	0.103	2.060	2.620
E	0.030	0.060	0.760	1.520
F	-	0.008	-	0.203
G	0.305	0.320	7.750	8.130
H	0.006	0.012	0.152	0.305
I	0.129	-	3.300	-
J	0.094	-	2.400	-
K	-	0.165	-	4.200
L	0.094	-	2.400	-

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Part Numbering System



Part Marking System



Packaging

Part number	Component Package	Quantity	Packaging Option	Packaging Specification
SMCJxxxXX	DO-214AB	3000	Tape & Reel – 16mm/13″ tape	EIA STD RS-481

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