



Socay TVS Diodes 5000w Surface Mount Transient Voltage Suppressors 5.0SMDJ78 SMC

Our Product Introduction

Basic Information

- Place of Origin: Shenzhen, Guangdong, China
- Brand Name: Socay
- Certification: UL, REACH, RoHS, ISO
- Model Number: 5.0SMDJ78
- Minimum Order Quantity: 500PCS
- Price: Negotiable
- Packaging Details: tape reel, bulk
- Delivery Time: 1-3 WEEKS



Product Specification

- Name: TVS Diodes
- Reverse Stand-off Voltage: 78.0V
- Breakdown Voltage @It Min: 86.7V
- Breakdown Voltage @It Max: 95.8V
- Test Current: 1mA
- Maximum Clamping Voltage 126.0V @Ipp:
- Maximum Peak Pluse Current: 40.08A
- Maximum Reverse Leakage 5μA @Vrwm:
- Package Size: DO-214AB/SMC
- Storage Temperature Range: -55 To +150

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Product Description

Socay TVS Diodes 5000w Surface Mount Transient Voltage Suppressors 5.0SMDJ78 SMC

DATASHEET: [5.0SMDJ_v2107.1 .pdf](#)

5.0SMDJ78 TVS Diode Profile:

The 5.0SMDJ series is specifically designed to protect sensitive electronic equipment from voltage transients caused by lightning and other transient voltage events.

5.0SMDJ78 TVS Diode Application:

TVS devices are ideal for the protection of I/O interfaces, VCC bus and other vulnerable circuits used in Telecom, Computer, Industrial and Consumer electronic applications

5.0SMDJ78 TVS Diode Feature:

Low leakage
Uni and Bidirectional unit
Glass passivated junction
Low inductance
Excellent clamping capability

Electrical Characteristics (TA=25 unless otherwise noted)

Part Number		Marking		Reverse Stand-Off Voltage V_{RWM} (V)	Breakdown Voltage V_{BR} (V) @ I_T		Test Current I_T (mA)	Maximum Clamping Voltage V_C @ I_{PP} (V)	Maximum Peak Pulse Current I_{PP} (A)	Maximum Reverse Leakage I_R @ V_{RWM} (μA)
Uni	Bi	Uni	Bi		MIN	MAX				
—	5.0SMDJ8.0CA	—	5BDP	8.0	8.89	9.83	1	13.6	367.60	100
5.0SMDJ11A	5.0SMDJ11CA	5PDX	5BDX	11.0	12.20	13.50	1	18.2	277.47	800
5.0SMDJ12A	5.0SMDJ12CA	5PDZ	5BDZ	12.0	13.30	14.70	1	19.9	253.77	800
5.0SMDJ13A	5.0SMDJ13CA	5PEE	5BEE	13.0	14.40	15.90	1	21.5	234.88	500
5.0SMDJ14A	5.0SMDJ14CA	5PEG	5BEG	14.0	15.60	17.20	1	23.2	217.67	200
5.0SMDJ15A	5.0SMDJ15CA	5PEK	5BEK	15.0	16.70	18.50	1	24.4	206.97	100
5.0SMDJ16A	5.0SMDJ16CA	5PEM	5BEM	16.0	17.80	19.70	1	26.0	194.23	50
5.0SMDJ17A	5.0SMDJ17CA	5PEP	5BEP	17.0	18.90	20.90	1	27.6	182.97	20
5.0SMDJ18A	5.0SMDJ18CA	5PER	5BER	18.0	20.00	22.10	1	29.2	172.95	10
5.0SMDJ19A	5.0SMDJ19CA	5PET	5BET	19.0	21.10	23.30	1	30.8	164.07	10
5.0SMDJ20A	5.0SMDJ20CA	5PEV	5BEV	20.0	22.20	24.50	1	32.4	155.86	5
5.0SMDJ22A	5.0SMDJ22CA	5PEX	5BEX	22.0	24.40	26.90	1	35.5	142.25	5
5.0SMDJ24A	5.0SMDJ24CA	5PEZ	5BEZ	24.0	26.70	29.50	1	38.9	129.82	5
5.0SMDJ26A	5.0SMDJ26CA	5PFE	5BFE	26.0	28.90	31.90	1	42.1	119.95	5
5.0SMDJ28A	5.0SMDJ28CA	5PFG	5BFG	28.0	31.10	34.40	1	45.4	111.23	5
5.0SMDJ30A	5.0SMDJ30CA	5PFK	5BFK	30.0	33.30	36.80	1	48.4	104.34	5
5.0SMDJ33A	5.0SMDJ33CA	5PFM	5BFM	33.0	36.70	40.60	1	53.3	94.75	5
5.0SMDJ36A	5.0SMDJ36CA	5PFP	5BFP	36.0	40.00	44.20	1	58.1	86.92	5
5.0SMDJ40A	5.0SMDJ40CA	5PFR	5BFR	40.0	44.40	49.10	1	64.5	78.29	5
5.0SMDJ43A	5.0SMDJ43CA	5PFT	5BFT	43.0	47.80	52.80	1	69.4	72.77	5
5.0SMDJ45A	5.0SMDJ45CA	5PFV	5BFV	45.0	50.00	55.30	1	72.7	69.46	5
5.0SMDJ48A	5.0SMDJ48CA	5PFX	5BFX	48.0	53.30	58.90	1	77.4	65.25	5

5.0SMDJ5 1A	5.0SMDJ5 1CA	5PFZ	5BFZ	51.0	56.70	62.70	1	82.4	61.29	5
5.0SMDJ5 4A	5.0SMDJ5 4CA	5PGE	5BGE	54.0	60.00	66.30	1	87.1	57.98	5
5.0SMDJ5 8A	5.0SMDJ5 8CA	5PG G	5BG G	58.0	64.40	71.20	1	93.6	53.95	5
5.0SMDJ6 0A	5.0SMDJ6 0CA	5PGK	5BGK	60.0	66.70	73.70	1	96.8	52.17	5
5.0SMDJ6 4A	5.0SMDJ6 4CA	5PG M	5BG M	64.0	71.10	78.60	1	103.0	49.03	5
5.0SMDJ7 0A	5.0SMDJ7 0CA	5PGP	5BGP	70.0	77.80	86.00	1	113.0	44.69	5
5.0SMDJ7 5A	5.0SMDJ7 5CA	5PG R	5BG R	75.0	83.30	92.10	1	121.0	41.74	5
5.0SMDJ7 8A	5.0SMDJ7 8CA	5PGT	5BGT	78.0	86.70	95.80	1	126.0	40.08	5
5.0SMDJ8 0A	5.0SMDJ8 0CA	5PGB	5BGB	80.0	88.80	97.60	1	129.6	38.97	5
5.0SMDJ8 5A	5.0SMDJ8 5CA	5PGV	5BGV	85.0	94.40	104.0 0	1	137.0	36.86	5
5.0SMDJ9 0A	5.0SMDJ9 0CA	5PGX	5BGX	90.0	100.0 0	111.0 0	1	146.0	34.59	5
5.0SMDJ1 00A	5.0SMDJ1 00CA	5PGZ	5BGZ	100.0	111.0 0	123.0 0	1	162.0	31.17	5
5.0SMDJ1 10A	5.0SMDJ1 10CA	5PHE	5BHE	110.0	122.0 0	135.0 0	1	177.0	28.53	5
5.0SMDJ1 20A	5.0SMDJ1 20CA	5PH G	5BH G	120.0	133.0 0	147.0 0	1	193.0	26.17	5
5.0SMDJ1 30A	5.0SMDJ1 30CA	5PHK	5BHK	130.0	144.0 0	159.0 0	1	209.0	24.16	5
5.0SMDJ1 40A	5.0SMDJ1 40CA	5PHB	5BHB	140.0	155.0 0	171.0 0	1	226.8	22.27	5
5.0SMDJ1 50A	5.0SMDJ1 50CA	5PH M	5BH M	150.0	167.0 0	185.0 0	1	243.0	20.78	5
5.0SMDJ1 60A	5.0SMDJ1 60CA	5PHP	5BHP	160.0	178.0 0	197.0 0	1	259.0	19.50	5
5.0SMDJ1 70A	5.0SMDJ1 70CA	5PHR	5BHR	170.0	189.0 0	209.0 0	1	275.0	18.36	5
5.0SMDJ1 80A	5.0SMDJ1 80CA	5PHT	5BHT	180.0	201.0 0	220.0 0	1	291.6	17.32	5
5.0SMDJ1 90A	5.0SMDJ1 90CA	5PHV	5BHV	190.0	211.0 0	232.0 0	1	307.8	16.41	5
5.0SMDJ2 00A	5.0SMDJ2 00CA	5PH W	5BH W	200.0	224.0 0	247.0 0	1	324.0	9.26	5
5.0SMDJ2 20A	5.0SMDJ2 20CA	5PHX	5BHX	220.0	246.0 0	272.0 0	1	356.0	8.43	5
5.0SMDJ2 50A	5.0SMDJ2 50CA	5PHZ	5BHZ	250.0	279.0 0	309.0 0	1	405.0	7.41	5
5.0SMDJ3 00A	5.0SMDJ3 00CA	5PJE	5BJE	300.0	335.0 0	371.0 0	1	486.0	6.17	5
5.0SMDJ3 50A	5.0SMDJ3 50CA	5PJG	5BJG	350.0	391.0 0	432.0 0	1	567.0	5.29	5
5.0SMDJ4 00A	5.0SMDJ4 00CA	5PJK	5BJK	400.0	447.0 0	494.0 0	1	648.0	4.63	5
5.0SMDJ4 40A	5.0SMDJ4 40CA	5PJM	5BJM	440.0	492.0 0	543.0 0	1	713.0	4.21	5

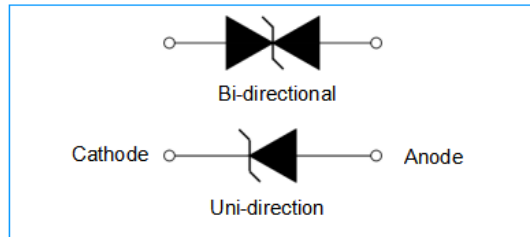
Maximum Ratings (TA=25 unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation with a 10/1000μs waveform (Fig.1)(Note 1), (Note 2)	P _{PPM}	5000	W
Peak Pulse Current with a 10/1000μs waveform. (Note1, Fig.3)	I _{PP}	See Next Table	A
Power Dissipation on Infinite Heat Sink at T _L =75	P _{M(AV)}	6.5	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	I _{FSM}	300	A
Maximum Instantaneous Forward Voltage at 25A for Unidirectional Only (Note 4)	V _F	3.5/5.0	V
Operating junction and Storage Temperature Range.	T _J , T _{STG}	-55 to +150	

Notes:

1. Non-repetitive current pulse, per Fig. 3 and derated above $T_A = 25^\circ\text{C}$ per Fig. 2.
2. Mounted on 5.0mm x 5.0mm (0.03mm thick) Copper Pads to each terminal.
3. 8.3ms single half sine-wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.
4. $V_F < 3.5\text{V}$ for $V_{BR} < 200\text{V}$ and $V_F < 6.5\text{V}$ for $V_{BR} > 201\text{V}$.

Functional Diagram



Ratings and Characteristic Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Figure 1 - Peak Pulse Power Rating Curve

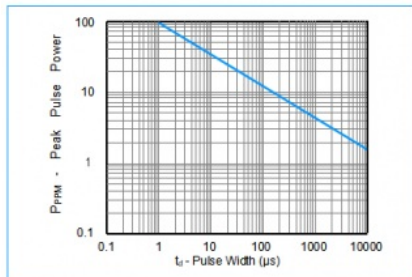


Figure 2 - Pulse Derating Curve

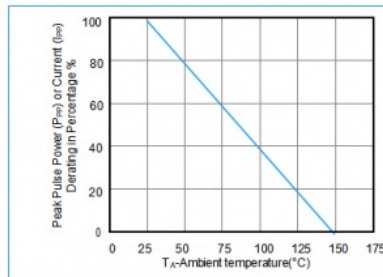


Figure 3 - Pulse Waveform

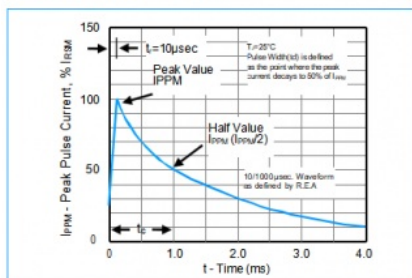


Figure 4 - Typical Junction Capacitance

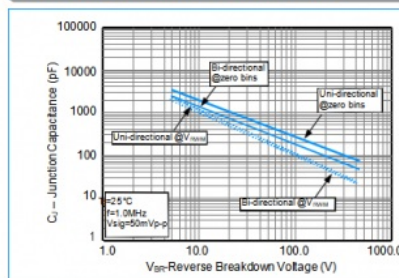


Figure 5 - Steady State Power Derating Curve

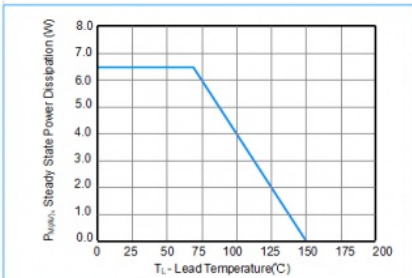
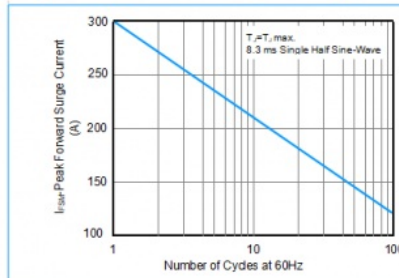
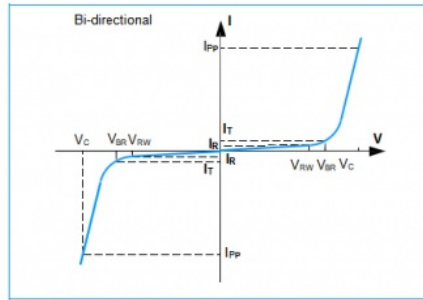
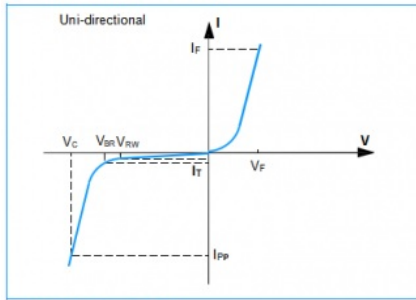


Figure 6 - Maximum Non-Repetitive Surge Current



I-V Curve Characteristics



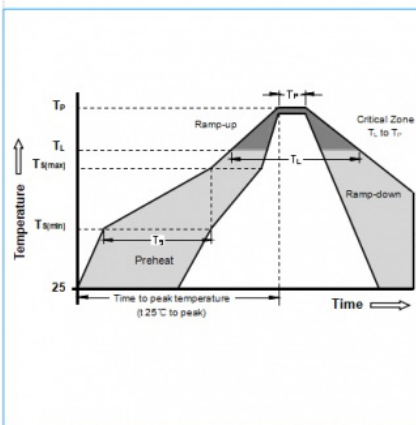
Physical Specifications

Weight	0.007 ounce, 0.21 gram
Case	JEDEC DO-214AB Molded Plastic over glass passivated junction
Polarity	Color band denotes cathode except Bipolar
Terminal	Matte Tin-plated leads, Solderable per JESD22-B102D

Environmental Specifications

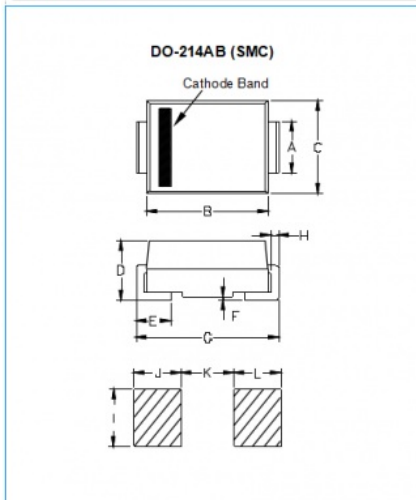
Temperature Cycle	JESD22-A104
Pressure Cooker	JESD22-A102
High Temp. Storage	JESD22-A103
HTRB	JESD22-A108
Thermal Shock	JESD22-A106

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 Seconds
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_L)	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

Dimensions

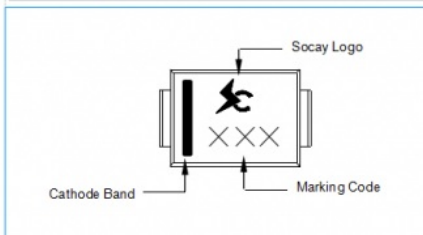


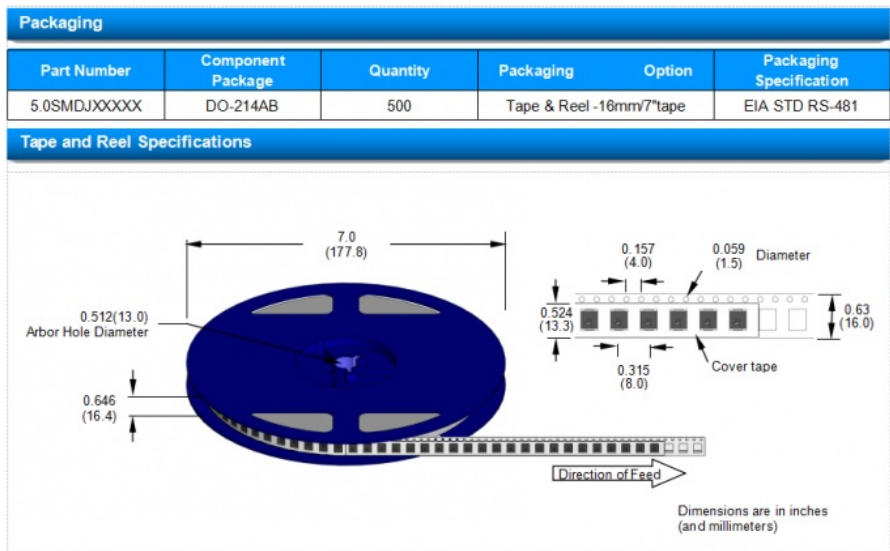
Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.108	0.126	2.750	3.200
B	0.260	0.280	6.520	7.110
C	0.217	0.244	5.520	6.220
D	0.080	0.112	2.050	2.850
E	0.030	0.060	0.750	1.520
F	-	0.008	-	0.203
G	0.305	0.320	7.640	8.130
H	0.006	0.012	0.150	0.310
I	0.121	-	3.070	-
J	0.068	-	1.715	-
K	-	0.185	-	4.690
L	0.068	-	1.715	-

Part Numbering

5.0 SMD J x x x CA	
5.0	5% V_{BR} VOLTAGE TOLERANCE
SMD	BI-DIRECTIONAL
J	V_R VOLTAGE
x x x	SERIES
CA	

Part Marking





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