



Fast Delivery Time SOCAY 58V Bi-directional TVS Diode 5.0SMDJ58CA IPP53.95A IR 5μA

Basic Information

- Place of Origin: Shenzhen, Guangdong, China
- Brand Name: SOCAY
- Certification: UL, REACH, RoHS, ISO
- Model Number: 5.0SMDJ58CA
- Minimum Order Quantity: 500PCS
- Price: Negotiable
- Delivery Time: 5-8 work days



Product Specification

- Product Name: TVS Diodes
- Package Type: DO-214AB/SMC
- V_{rw}: 58.0V
- V_{br@It} (Min.): 64.40V
- V_{br@It} (Max.): 71.20V
- I_t: 1mA
- V_{c@Ipp}: 93.6V
- I_{pp}: 53.95A
- I_{r@Vrw}: 5μA
- Storage Temperature Range: -55 To +150



Product Description

Fast Delivery Time SOCAY 58V Bi-directional TVS Diode 5.0SMDJ58CA IPP53.95A IR 5μA

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

Part Number	Component Package	Quantity	Packaging Option	Packaging Specification
5.0SMDJXXXXX	DO-214AB	500	Tape & Reel - 16mm/7"tape	EIA STD RS-481

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

Features:

- u For surface mounted applications in order to optimize board space
- u Low leakage
- u Uni and Bidirectional unit
- u Glass passivated junction
- u Low inductance
- u Excellent clamping capability
- u 5000W Peak power capability at 10 × 1000μs waveform Repetition rate (duty cycle):0.01%
- u Fast response time: typically less than 1.0ps from 0 Volts to V_{BR} min
- u Typical I_R less than 5μA above 25V.
- u High Temperature soldering: 260 /40 seconds at terminals
- u Typical maximum temperature coefficient $\Delta V_{BR} = 0.1\% \times V_{BR}@25 \times \Delta T$
- u Plastic package has Underwriters Laboratory Flammability 94V-0
- u Matte tin lead-free Plated
- u Halogen free and RoHS compliant
- u Typical failure mode is short from over-specified voltage or current
- u Whisker test is conducted based on JEDEC JESD201A per its table 4a and 4c
- u IEC-61000-4-2 ESD 15kV(Air), 8kV (Contact)
- u ESD protection of data lines in accordance with IEC 61000-4-2 (IEC801-2)
- u EFT protection of data lines in accordance with IEC 61000-4-4 (IEC801-4)

Description:

The 5.0SMDJ58CA is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

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
5.0SMDJ51A	5.0SMDJ51CA	5PFZ	5BFZ	51.0	56.70	62.70	1	82.4	61.29	5
5.0SMDJ54A	5.0SMDJ54CA	5PGE	5BGE	54.0	60.00	66.30	1	87.1	57.98	5
5.0SMDJ58A	5.0SMDJ58CA	5PGG	5BGG	58.0	64.40	71.20	1	93.6	53.95	5

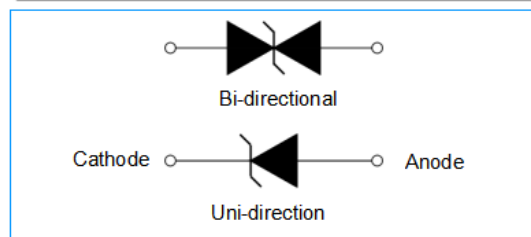
Maximum Ratings (TA=25 unless otherwise noted)

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 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 < 3.5V for V_{BR} < 200V and V_F < 6.5V for V_{BR} > 201V.

Functional Diagram



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

Figure 1 - Peak Pulse Power Rating Curve

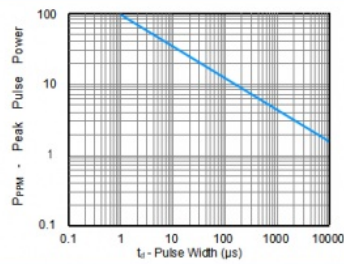


Figure 2 - Pulse Derating Curve

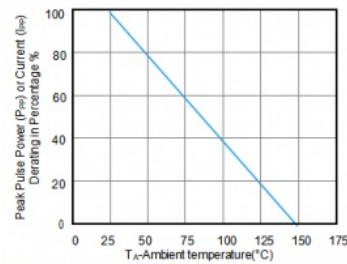


Figure 3 - Pulse Waveform

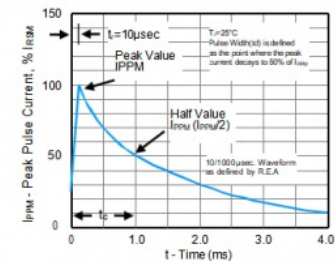


Figure 4 - Typical Junction Capacitance

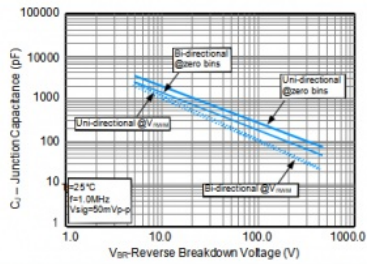


Figure 5 - Steady State Power Derating Curve

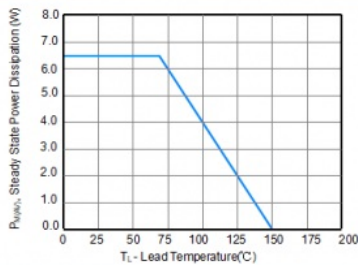
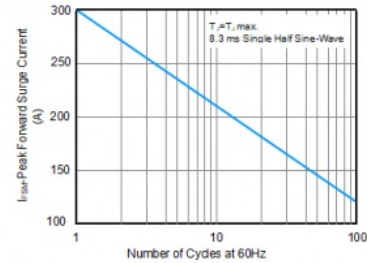
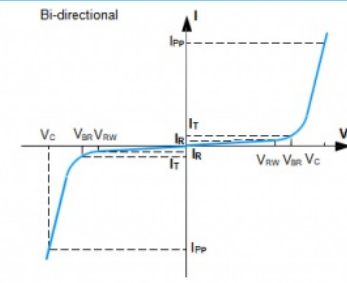
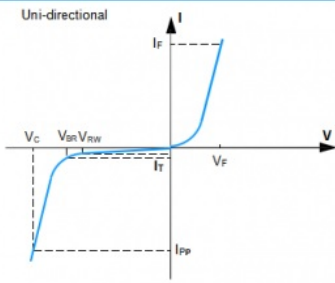


Figure 6 - Maximum Non-Repetitive Surge Current



I-V Curve Characteristics



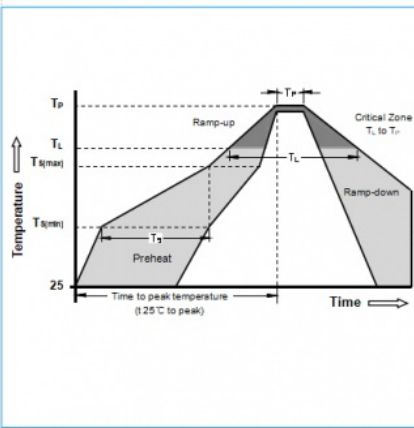
Physical Specifications

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

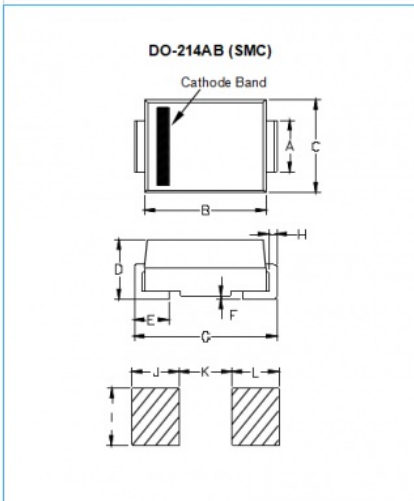
Temperature Cycle	JESD22-A104
Pressure Cooker	JESD22-A102
High Temp. Storage	JESD22-A103
HTRB	JESD22-A108
Thermal Shock	JESD22-A106

Soldering Parameters



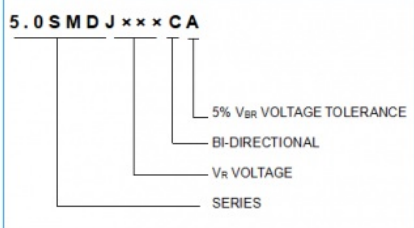
Reflow Condition		Lead-free assembly
Pre Heat	-Temperature Min ($T_{s(min)}$)	150°C
	-Temperature Max ($T_{s(max)}$)	200°C
	-Time (min to max) (T_s)	60 -180 Seconds
Average ramp up rate (Liquidus Temp T_L) to peak		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (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

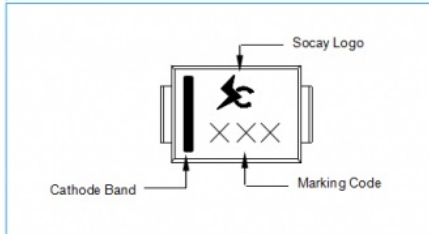


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.108	0.126	2.750	3.200
B	0.260	0.280	6.520	7.110
C	0.217	0.244	5.520	6.220
D	0.080	0.112	2.050	2.850
E	0.030	0.060	0.750	1.520
F	-	0.008	-	0.203
G	0.305	0.320	7.640	8.130
H	0.006	0.012	0.150	0.310
I	0.121	-	3.070	-
J	0.068	-	1.715	-
K	-	0.185	-	4.690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

Part Numbering



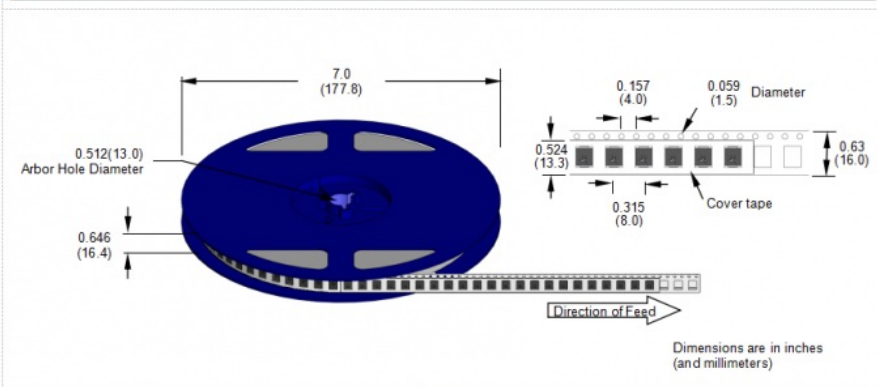
Part Marking



Packaging

Part Number	Component Package	Quantity	Packaging	Option	Packaging Specification
5.0SMDJXXXXX	DO-214AB	500	Tape & Reel -16mm/7"tape		EIA STD RS-481

Tape and Reel Specifications





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