



Socay TVS Diodes 400w 22V Surface Mount Transient Voltage Suppressors SMAJ22A SMC

Our Product Introduction

Basic Information

- Place of Origin: Shenzhen, Guangdong, China
- Brand Name: SOCAY
- Certification: UL, REACH, RoHS, ISO
- Model Number: SMAJ22A
- Minimum Order Quantity: 5000PCS
- Price: Negotiable
- Delivery Time: 5-8 work days



Product Specification

- Package Type: DO-214AC
- Reverse Stand-Off Voltage 22V
V_{rw}:
- Breakdown Voltage V_{br}@I_t 24.4V
(Min.):
- Breakdown Voltage V_{br}@I_t 26.9V
(Max.):
- Test Current I_t: 1mA
- V_c@I_{pp}: 35.5V
- I_{pp}: 11.27A
- Maximum Reverse Leakage 5μA
I_r@V_{rw}:

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Product Description

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DATASHEET: [SMAJ_v2207.1.pdf](#)

Brief introduction:

The SMAJ series is designed for the protection of electronic equipment from voltage transients due to lightning and other transient voltage events.

Application:

TVS devices are perfect for safeguarding I/O interfaces, VCC bus, and other vulnerable circuits utilized in Telecom, Computer, Industrial, and Consumer electronic applications.

Part Number		Marking		Reverse Stand-Off Voltage VRWM (V)	Breakdown Voltage VBR (V) @IT		Test Current IT (mA)	Maximum Clamping Voltage VC @IPP (V)	Maximum Peak Pulse Current IPP (A)	Maximum Reverse Leakage IR @VRWM (μA)
Uni	Bi	Uni	Bi		MIN	MAX				
SMAJ45A	SMAJ45CA	CV	YV	45.0	50.00	55.30	1	72.7	5.50	5
SMAJ48A	SMAJ48CA	CX	YX	48.0	53.30	58.90	1	77.4	5.17	5
SMAJ51A	SMAJ51CA	CZ	YZ	51.0	56.70	62.70	1	82.4	4.85	5
SMAJ54A	SMAJ54CA	RE	ZE	54.0	60.00	66.30	1	87.1	4.59	5
SMAJ58A	SMAJ58CA	RG	ZG	58.0	64.40	71.20	1	93.6	4.27	5
SMAJ60A	SMAJ60CA	RK	ZK	60.0	66.70	73.70	1	96.8	4.13	5
SMAJ64A	SMAJ64CA	RM	ZM	64.0	71.10	78.60	1	103.0	3.88	5
SMAJ70A	SMAJ70CA	RP	ZP	70.0	77.80	86.00	1	113.0	3.54	5
SMAJ75A	SMAJ75CA	RR	ZR	75.0	83.30	92.10	1	121.0	3.31	5
SMAJ78A	SMAJ78CA	RT	ZT	78.0	86.70	95.80	1	126.0	3.17	5
SMAJ80A	SMAJ80CA	RB	ZB	80.0	88.80	97.60	1	129.6	3.09	5
SMAJ85A	SMAJ85CA	RV	ZV	85.0	94.40	104.00	1	137.0	2.92	5
SMAJ90A	SMAJ90CA	RX	ZX	90.0	100.00	111.00	1	146.0	2.74	5
SMAJ100A	SMAJ100CA	RZ	ZZ	100.0	111.00	123.00	1	162.0	2.47	5
SMAJ110A	SMAJ110CA	SE	VE	110.0	122.00	135.00	1	177.0	2.26	5
SMAJ120A	SMAJ120CA	SG	VG	120.0	133.00	147.00	1	193.0	2.07	5
SMAJ130A	SMAJ130CA	SK	VK	130.0	144.00	159.00	1	209.0	1.91	5
SMAJ140A	SMAJ140CA	SB	VB	140.0	155.00	171.00	1	226.8	1.76	5
SMAJ150A	SMAJ150CA	SM	VM	150.0	167.00	185.00	1	243.0	1.65	5
SMAJ160A	SMAJ160CA	SP	VP	160.0	178.00	197.00	1	259.0	1.54	5
SMAJ170A	SMAJ170CA	SR	VR	170.0	189.00	209.00	1	275.0	1.45	5
SMAJ180A	SMAJ180CA	ST	VT	180.0	201.00	220.00	1	291.6	1.37	5
SMAJ190A	SMAJ190CA	SV	VV	190.0	211.00	232.00	1	307.8	1.30	5
SMAJ200A	SMAJ200CA	SW	VW	200.0	224.00	247.00	1	324.0	1.23	5
SMAJ220A	SMAJ220CA	SX	VX	220.0	246.00	272.00	1	356.0	1.12	5
SMAJ250A	SMAJ250CA	SZ	VZ	250.0	279.00	309.00	1	405.0	0.99	5

SMAJ300A	SMAJ300CA	DE	HE	300.0	335.00	371.00	1	486.0	0.82	5
SMAJ350A	SMAJ350CA	DG	HG	350.0	391.00	432.00	1	567.0	0.71	5
SMAJ400A	SMAJ400CA	DK	HK	400.0	447.00	494.00	1	648.0	0.62	5
SMAJ440A	SMAJ440CA	DM	HM	440.0	492.00	543.00	1	713.0	0.56	5

Notes:

- 1.1.Suffix 'A' denotes 5% tolerance device.
2. 2.Add suffix 'CA' after part number to specify Bi-directional devices.
3. 3.For Bi-Directional devices having V_R of 10 volts and under, the I_R limit is double.

Characteristics:

The junction is passivated with glass
Low inductance
Low leakage
Uni and Bidirectional unit
The clamping capability is excellent
Plated with matte tin that is lead-free.
Halogen free and RoHS compliant
To optimize board space for surface mounted applications
The plastic package has a flammability rating of Underwriters Laboratory 94V-0.
Over-specification of voltage or current is a common cause of failure
The Whisker test is conducted according to JEDEC JESD201A, specifically following its table 4a and 4c.
The device has a peak power capability of 400W when using a $10 \times 1000\mu s$ waveform repetition rate (duty cycle) of 0.01%.
Fast response time: typically less than 1.0ps from 0 Volts to VBR min
Typical infrared (IR) is less than 5 microamps (μA) above 12 volts.
Soldering at high temperatures: terminals should be heated to 260°C for 40 seconds.
IEC-61000-4-2 ESD 15kV(Air), 8kV (Contact)
Typical maximum temperature coefficient $\Delta VBR = 0.1\% \times VBR @ 25^\circ C \times \Delta T$
ESD protection of data lines in accordance with IEC 61000-4-2(IEC801-2)
EFT protection of data lines in accordance with IEC 61000-4-4(IEC801-4)



Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation with a 10/1000 μs waveform (Fig.1)(Note 1), (Note 2)	P_{PPM}	400	Watts
Peak Pulse Current with a 10/1000 μs waveform.(Note1, Fig.3)	I_{PP}	See Next Table	Amps
Power Dissipation on Infinite Heat Sink at $T_L=75^\circ C$	$P_{M(AV)}$	1.0	Watt
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	I_{FSM}	40	Amps

Maximum Instantaneous Forward Voltage at 25A for Unidirectional Only (Note 4)	V_F	3.5/5.0	Voltage
Operating junction and Storage Temperature Range.	T_J, T_{STG}	-55 to +150	

Notes:

1. Apply a non-repetitive current pulse as shown in Figure 3 and derate above $T_A = 25^\circ\text{C}$ as per Figure 2.
2. Mount the device on 5.0mm x 5.0mm (0.03mm thick) copper pads on each terminal.
3. The device should produce a single half sine-wave or equivalent square wave with a duration of 8.3ms. The duty cycle should not exceed 4 pulses per minute. Non-essential fillers have been removed.
4. The forward voltage (V_F) should be less than 3.5V for VBR values below 200V and less than 6.5V for VBR values above 201V. All units and metrics should be strictly adhered to.



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