

SC1122-01ETG

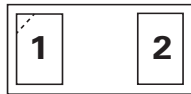
22 V, 60 pF, 9 A, SOD882, Unidirectional Discrete TVS Diode, General Purpose ESD Protection

HF RoHS Pb

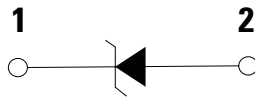


Note: This package image is for example and reference only. for detail package drawing, please refer to the package section in this datasheet.

Pinout



Functional Block Diagram



Description

The SC1122-01ETG uni-directional TVS is fabricated in a proprietary silicon avalanche technology. These diodes provide a high ESD (electrostatic discharge) protection level for electronic equipment. The SC1122-01ETG TVS can safely absorb repetitive ESD strikes of ± 30 kV (contact and air discharge as defined in IEC 61000-4-2) without any performance degradation. In addition, it can safely dissipate a 9 A 8/20 μ s surge event as defined in IEC 61000-4-5, 2nd edition.

Features

- ESD, IEC 61000-4-2, ± 30 kV contact/air
- EFT, IEC 61000-4-4, 40 A (5/50 ns)
- Maximum surge tolerance, IEC 61000-4-5 2nd edition, 9 A (8/20 μ s)
- Low leakage current of 1000 nA (Max) at 22 V
- Halogen free, lead free and RoHS compliant
- Moisture Sensitivity Level (MSL-1)

Applications

- CC/SBU for USB PD3.1
- Laptop/ Pad
- Mobile Phones

Life Support Note:

Not Intended for Use in Life Support or Life Saving Applications

The products shown herein are not designed for use in life sustaining or life saving applications unless otherwise expressly indicated.

SC1122-01ETG**22 V, 60 pF, 9 A, SOD882, Unidirectional Discrete TVS Diode, General Purpose ESD Protection****Absolute Maximum Ratings**

Symbol	Parameter	Value	Units
I_{PP}	Peak Current ($t_p = 8/20 \mu s$)	9	A
T_{OP}	Operating Temperature	-40 to 125	°C
T_{STOR}	Storage Temperature	-55 to 150	°C

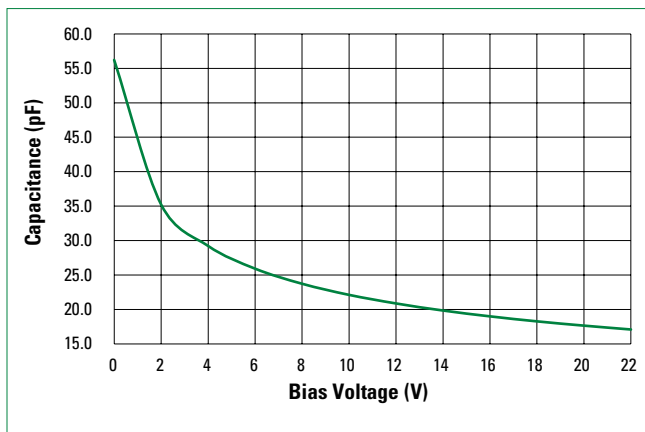
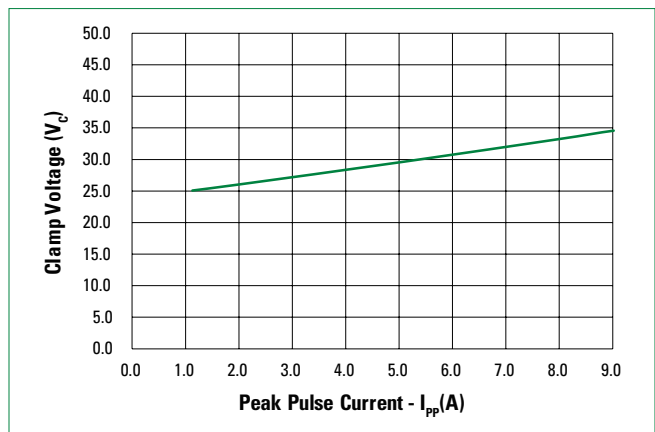
Caution: Stresses above those listed in "Absolute Maximum Ratings" may cause permanent damage to the component. This is a stress only rating and operation of the component at these or any other conditions above those indicated in the operational sections of this specification is not implied.

Electrical Characteristics ($T_{OP} = 25^\circ C$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Reverse Standoff Voltage	V_{RWM}				22	V
Breakdown Voltage	V_{BR}	$I_R = 1 \text{ mA}$	23.1		27	V
Reverse Leakage Current	I_{LEAK}	$V_R = 22 \text{ V}$			1000	nA
Clamp Voltage ¹	V_C	$I_{PP} = 1 \text{ A}, t_p = 8/20 \mu s, I/O \text{ to GND}$			28.0	V
		$I_{PP} = 9 \text{ A}, t_p = 8/20 \mu s, I/O \text{ to GND}$		34.5		V
Dynamic Resistance ^{1,2}	R_{DYN}	TLP, $t_p = 100 \text{ ns}, I/O \text{ to GND}$		0.3		Ω
ESD Withstand Voltage ^{1,3}	V_{ESD}	IEC 61000-4-2 (Contact Discharge)	± 30			kV
		IEC 61000-4-2 (Air Discharge)	± 30			kV
Diode Capacitance ¹	C_{IO-GND}	Reverse Bias = 0 V, $f = 1 \text{ MHz}, I/O \text{ to GND}$		60		pF

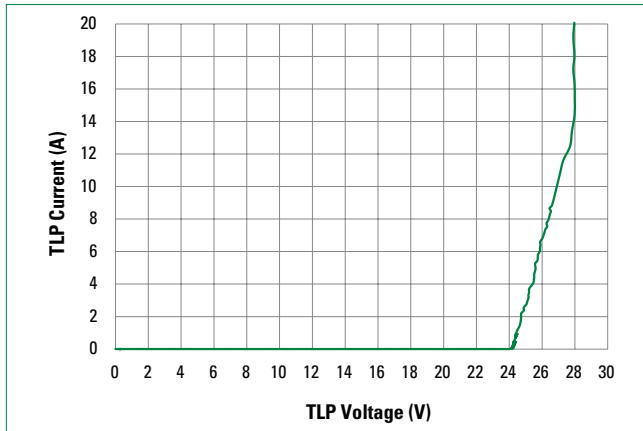
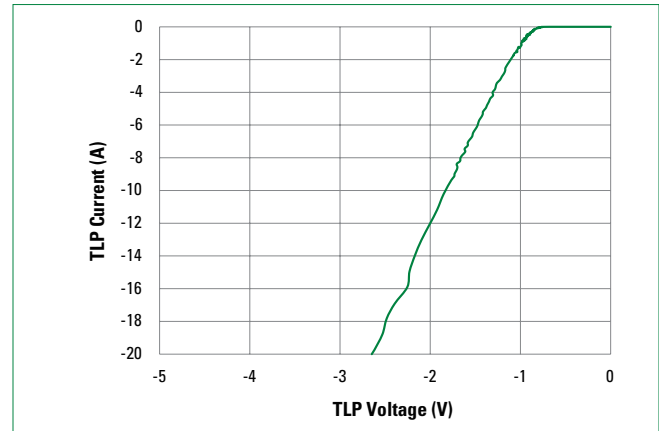
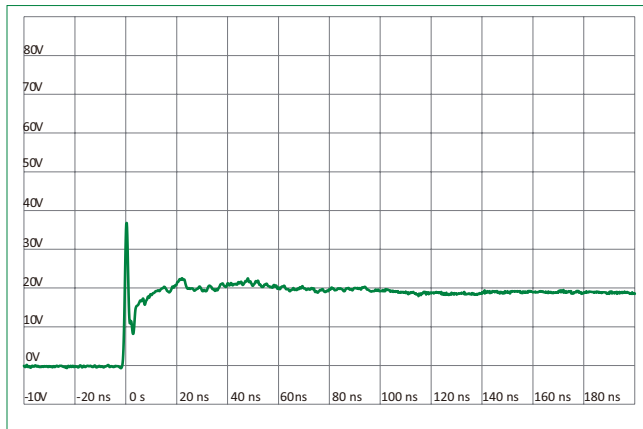
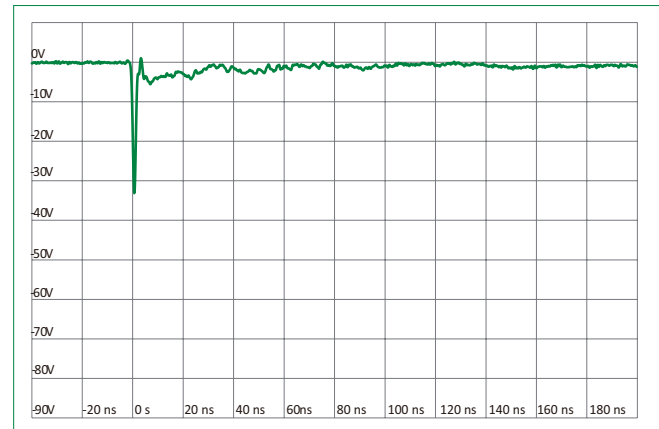
Note:

1. Parameter is guaranteed by design and/or component characterization
2. Transmission Line Pulse (TLP) with 100ns width, 0.2 ns rise time, and average window $t_1 = 70 \text{ ns}$ to $t_2 = 90 \text{ ns}$
3. Device stressed with ten non-repetitive ESD pulses

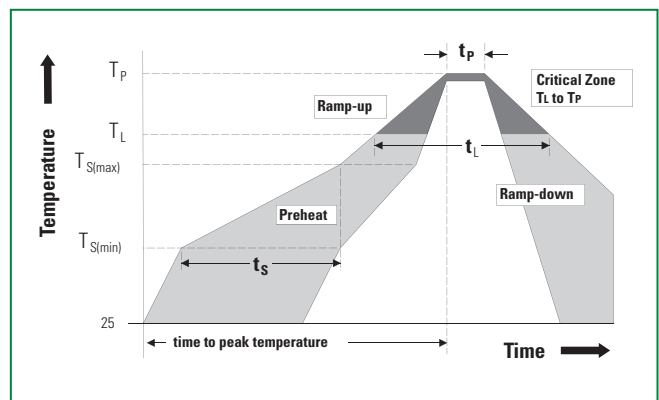
Capacitance vs. Reverse Bias**Clamping Voltage vs I_{PP}** 

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Positive Transmission Line Pulsing (TLP) Plot**Negative Transmission Line Pulsing (TLP) Plot****IEC 61000-4-2 +8 kV Contact ESD Clamping Voltage****IEC 61000-4-2 -8 kV Contact ESD Clamping Voltage****Soldering Parameters**

Reflow Condition		Pb – Free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150 °C
	- Temperature Max ($T_{s(max)}$)	200 °C
	- Time (min to max) (t_p)	60 – 120 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
	- Temperature (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260 ^{+0/-5} °C
Time Within 5 °C of Actual Peak Temperature (t_p)		30 seconds max
Ramp-down Rate		6 °C/second max
Time 25 °C to Peak Temperature (T_p)		8 minutes max
Do Not Exceed		260 °C



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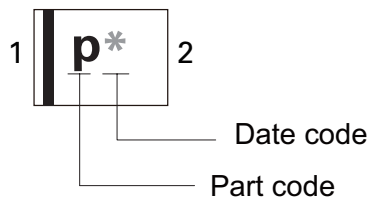
Ordering Information

Part Number	Package	Min. Order Qty.
SC1122-01ETG	SOD882	10000

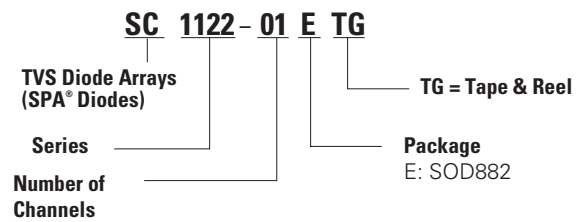
Product Characteristics

Lead Plating	Matte tin
Lead Material	Copper alloy
Body Material	Molded compound
Flammability	UL recognized compound meeting flammability rating V-0

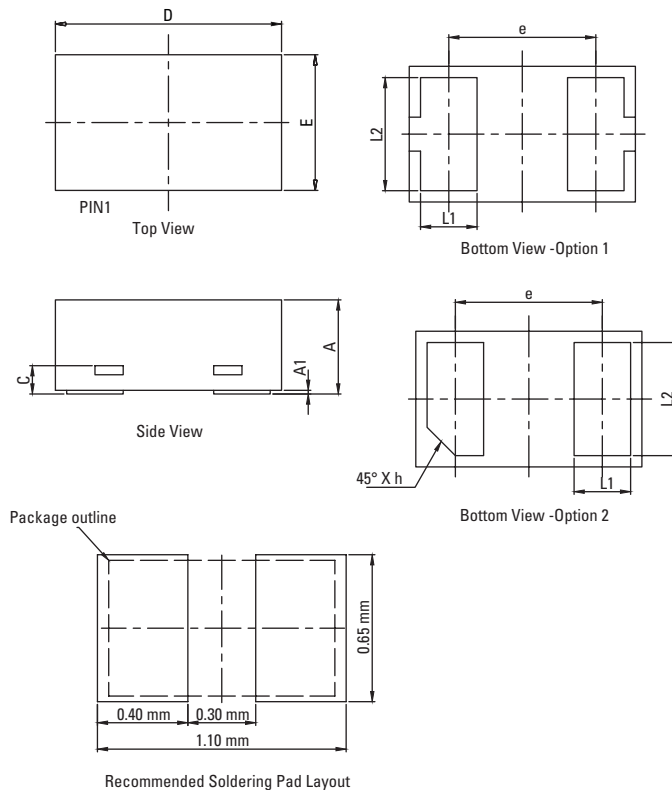
Part Marking System



Part Numbering System



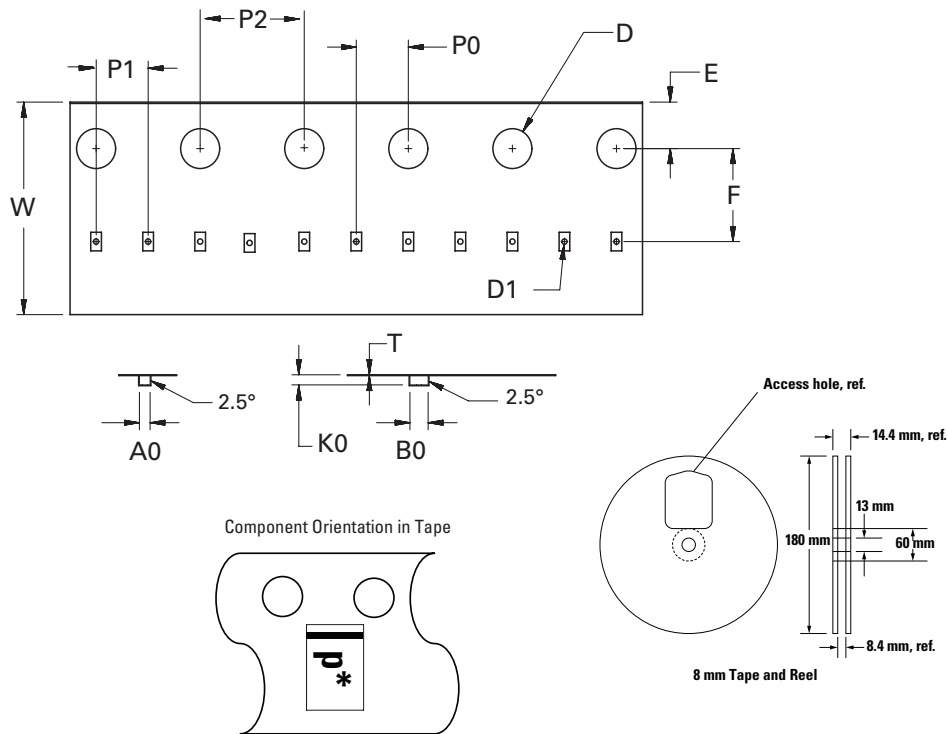
Package Dimensions — SOD882



Symbol	Millimeters		
	Min	Nom	Max
A	0.45	0.50	0.55
A1	0.00	0.02	0.05
L1	0.20	0.25	0.30
L2	0.45	0.50	0.55
D	0.95	1.00	1.05
E	0.55	0.60	0.65
e	0.65 5BSC		
h	0.07	0.12	0.17
C	0.125 (Option 1) / 0.150 (Option 2) REF.		

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Embossed Carrier Tape & Reel Specification — SOD882

Symbol	Millimeters
A0	0.70+/-0.05
B0	1.15+/-0.05
D	1.50+0.10
D1	0.40+/-0.10
E	1.75+/-0.10
F	3.50+/-0.05
K0	0.55+/-0.05
P0	2.00+/-0.05
P1	2.00+/-0.10
P2	4.00+/-0.10
T	0.20+/-0.03
W	8.00+0.30/-0.10

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