SP3022 Series
0.35pF 20kV Bidirectional Discrete TVS

Absolute Maximum Ratings

Symbol	Parameter	Value	Units
P_{PK}	Peak Pulse Power (t_P=8/20µs)	20	W
I_{PP}	Peak Current (t_p=8/20µs)	3.0	A
T_{OP}	Operating Temperature	-40 to 125	°C

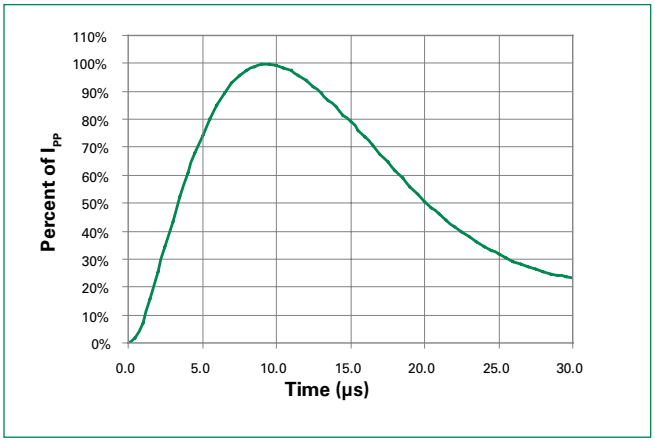
Caution: Stresses above those listed in "Absolute Maximum Ratings" may cause permanent damage to the component. This is a stress only rating and operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied.

Electrical Characteristics (TOP=25ºC)

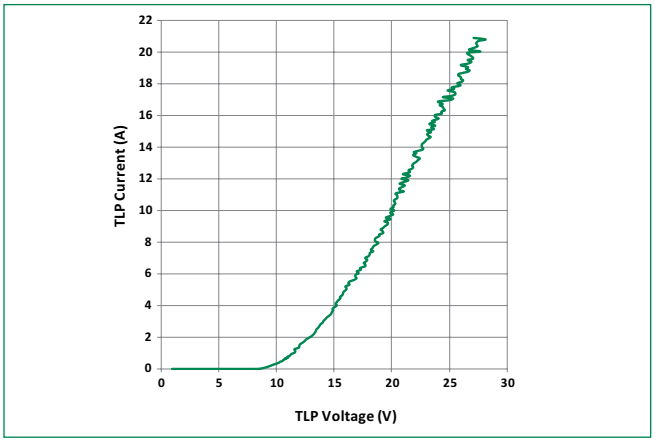
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Reverse Standoff Voltage	V_{RWM}	I_R=1µA			5.3	V
Breakdown Voltage	V_{BR}	I_R=1mA	6.8	7.8	9.1	V
Reverse Leakage Current	I_{LEAK}	V_R=5.3V		<10	100	nA
Clamp Voltage[1]	V_C	I_{PP}=1A, t_p=8/20µs, Fwd			12.0	V
Dynamic Resistance[2]	R_{DYN}	TLP, tp=100ns, I/O to GND		0.7		Ω
ESD Withstand Voltage[1]	V_{ESD}	IEC 61000-4-2 (Contact)	±20			kV
		IEC 61000-4-2 (Air)	±30			kV
Diode Capacitance[1]	$C_{I/O-I/O}$	Reverse Bias=0V, f=1MHz		0.35	0.5	pF

Note:
[1] Parameter is guaranteed by design and/or component characterization.
[2] Transmission Line Pulse (TLP) with 100ns width and 200ps rise time.

8/20 Pulse Waveform



Transmission Line Pulsing(TLP) Plot



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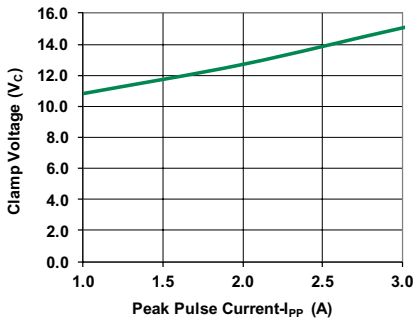
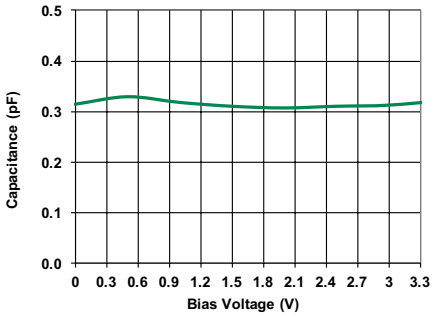
Clamping Voltage vs IPP

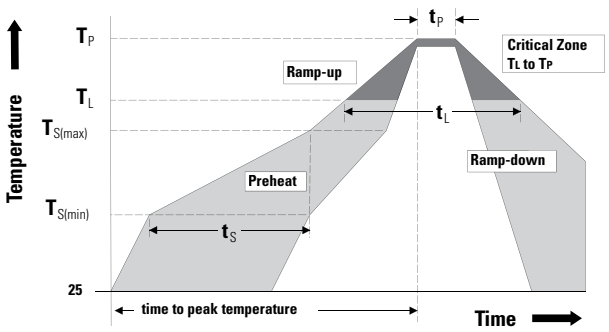


Capacitance vs. Reverse Bias



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_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
	- Temperature (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		260°C



Product Characteristics of SOD882

Lead Plating	Pre-Plated Frame
Lead Material	Copper Alloy
Substrate material	Silicon
Body Material	Molded Compound
Flammability	UL Recognized compound meeting flammability rating V-0.

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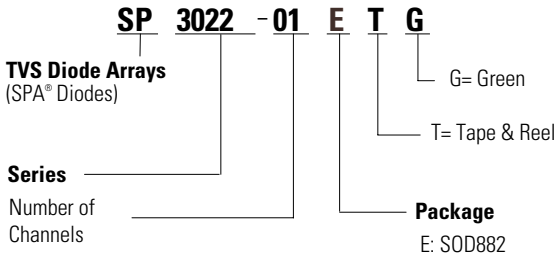
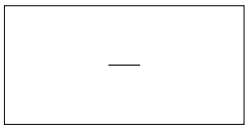
Ordering Information

Part Number	Package	Min. Order Qty.
SP3022-01ETG	SOD882	10000

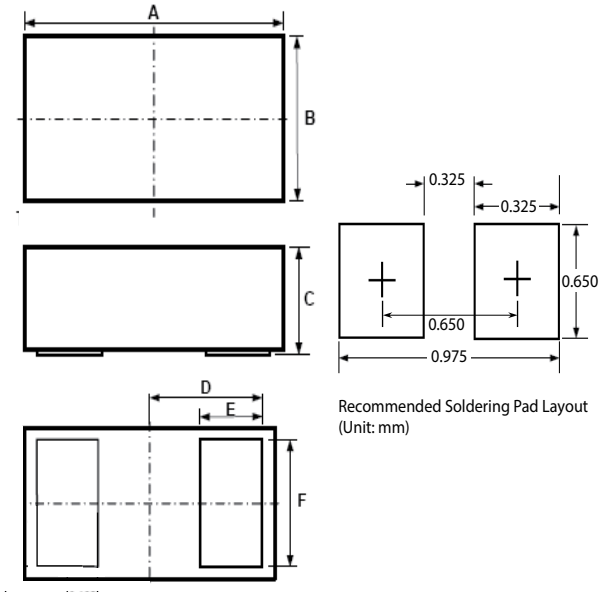
Part Numbering System



Part Marking System



Package Dimensions — SOD882



Recommended Soldering Pad Layout
(Unit: mm)

Symbol	Package	SOD882				
	JEDEC	MO-236				
	Millimeters			Inches		
	Min	Typ	Max	Min	Typ	Max
A	0.95	1.00	1.10	0.035	0.039	0.043
B	0.50	0.60	0.70	0.020	0.024	0.028
C	0.40	0.50	0.60	0.016	0.020	0.024
D		0.45			0.018	
E	0.20	0.25	0.35	0.008	0.010	0.012
F	0.45	0.50	0.55	0.018	0.020	0.022

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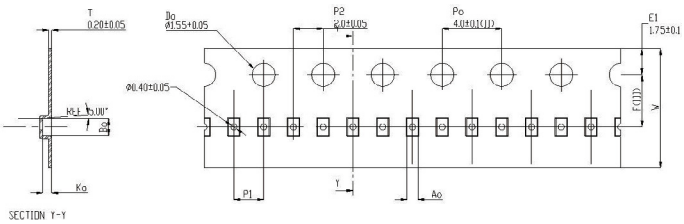
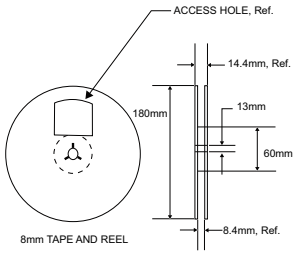
Embossed Carrier Tape & Reel Specification — SOD882





Symbol	Millimeters
A0	0.70+/-0.045
B0	1.10+/-0.045
K0	0.65+/-0.045
F	3.50+/-0.05
P1	2.00+/-0.10
W	8.00 + 0.30 -0.10