

SMP1005-01ETG TVS Arrays

Description

The SMP1005 includes back-to-back Zener diodes fabricated in a proprietary silicon avalanche technology to provide protection for electronic equipment that may experience destructive electrostatic discharges (ESD). These robust diodes can safely absorb repetitive ESD strikes above the maximum level specified in the IEC61000-4-2 international standard (Level 4, $\pm 8\text{kV}$ contact discharge) without performance degradation. The back-to-back configuration provides symmetrical ESD protection for data lines when AC signals are present.

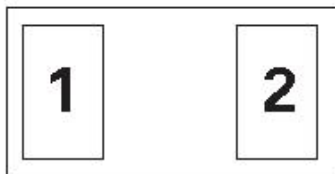
Features

- ESD protection in accordance with:
- IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- IEC 61000-4-5 (lightning) 10A (8/20 μs)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- Low capacitance of 30 pF @ VR=0V
- Low leakage current of 0.1 μA at 5V
- SOD882 package

Applications

- Mobile Phones
- Smart Phones
- Camcorders
- Tablets
- Digital cameras
- MP3/PMP
- Portable navigation devices
- Portable Medical
- Point of sale terminals

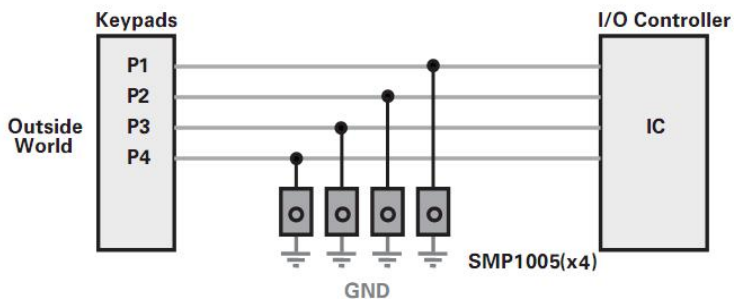
Pinout



Functional Block Diagram



Application Example



Ordering Information

Device	Package	Marking	Min. Order Qty.
SMP1005-01ETG	SOD882	● a	10000

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Absolute Maximum Ratings @T_A=25°C unless otherwise specified

Parameter	Symbol	Value	Units
Peak Pulse Current (tp=8/20μs)	I _{PP}	10.0	A
Operating Temperature	T _{OP}	-40 to + 125	°C
Storage Temperature	T _{STOR}	-55 to + 150	°C

CAUTION: Stresses above those listed in “Absolute Maximum Ratings” may cause permanent damage to the device. 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.

Thermal Information

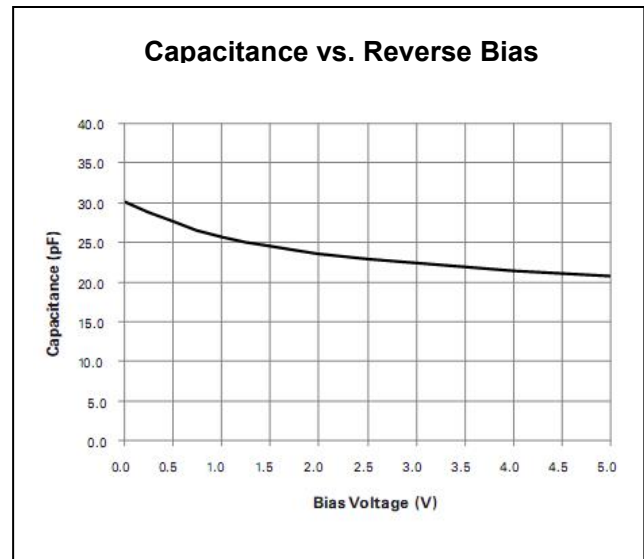
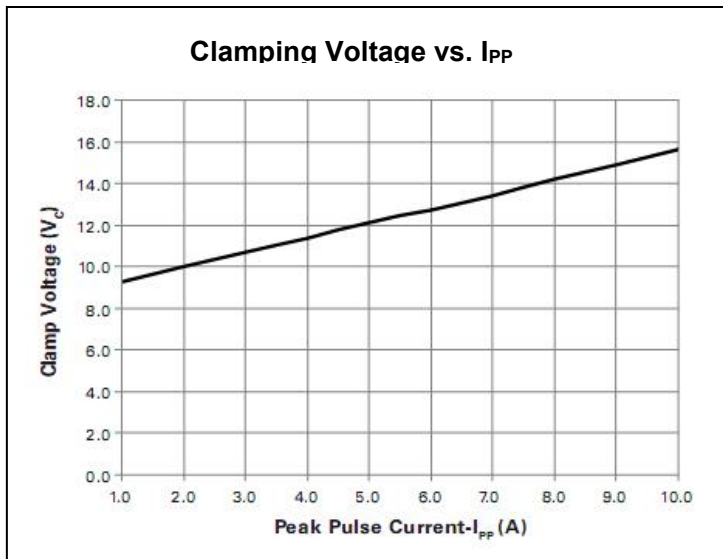
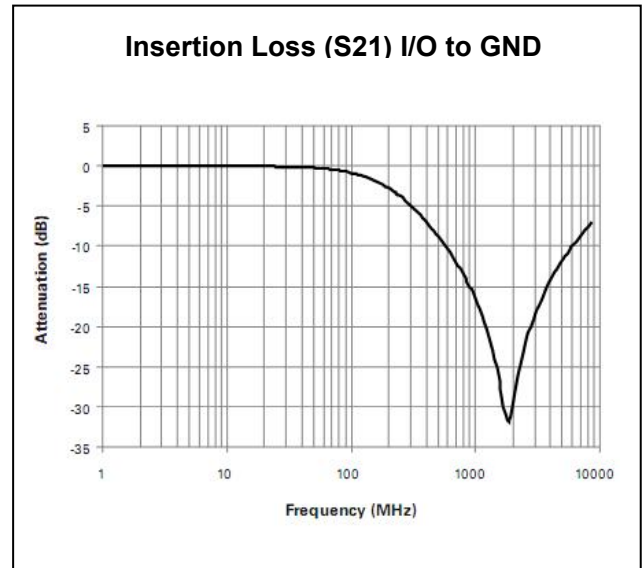
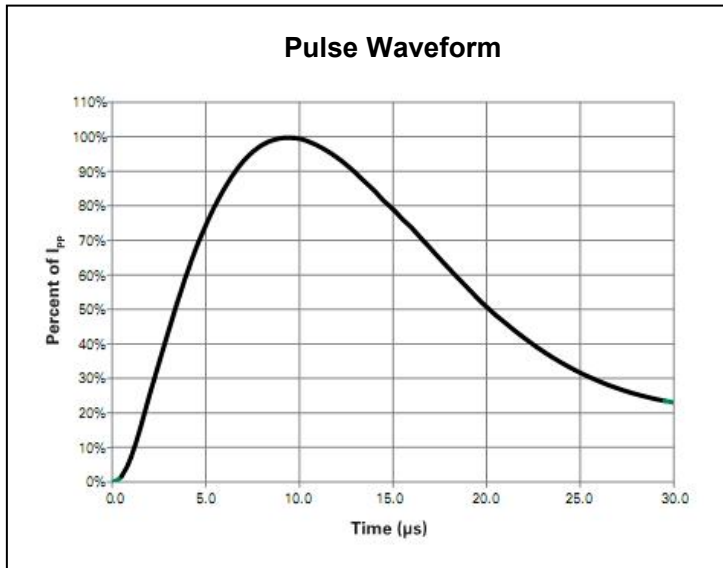
Parameter	Value	Units
Storage Temperature Range	-55 to + 150	°C
Maximum Junction Temperature	150	°C
Maximum Lead Temperature (Soldering 20-40s)	260	°C

Electrical Characteristics (T_{OP}=25°C)

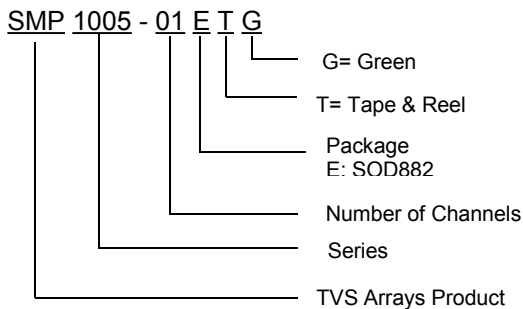
Characteristics	Symbol	Condition	Min.	Typ.	Max.	Units
Reverse Stand-Off Voltage	V _{RWM}	-	-	-	6.0	V
Breakdown Voltage	V _{BR}	I _R = 1mA	-	8.5	9.5	V
Reverse Leakage Current	I _{LEAK}	V _R =5V with 1pin at GND	-	0.1	0.5	μA
Clamping Voltage ¹	V _C	I _{PP} = 1A, tp=8/20μs, Fwd	-	9.3	-	V
		I _{PP} = 2A, tp=8/20μs, Fwd	-	10.0	-	V
		I _{PP} = 10A, tp=8/20μs, Fwd	-	15.6	-	V
ESD With stand Voltage ¹	V _{ESD}	IEC61000-4-2 (Contact Discharge)	±30	-	-	kV
		IEC61000-4-2 (Air Discharge)	±30	-	-	kV
Dynamic Resistance	R _{DYN}	(V _{C2} -V _{C1})/(I _{PP2} -I _{PP1})	-	0.28	-	Ω
Junction Capacitance ¹	C _D	Reverse Bias=0V	-	30	-	pF
		Reverse Bias=2.5V	-	23	-	

Note: 1. Parameter is guaranteed by design and/or device characterization.

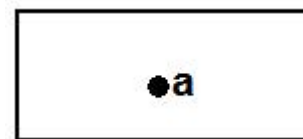
Ratings and Characteristics Curves



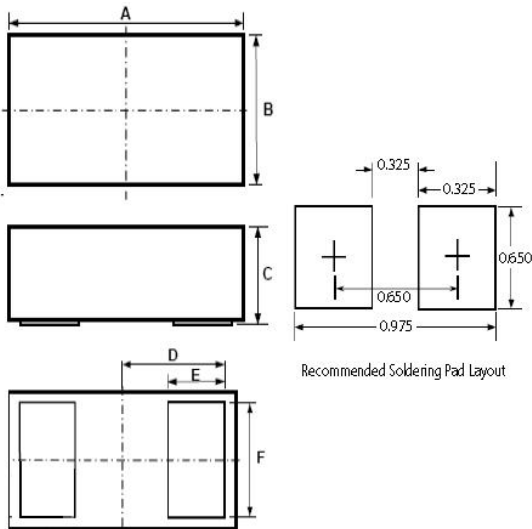
Part Name Information



Marking Diagram

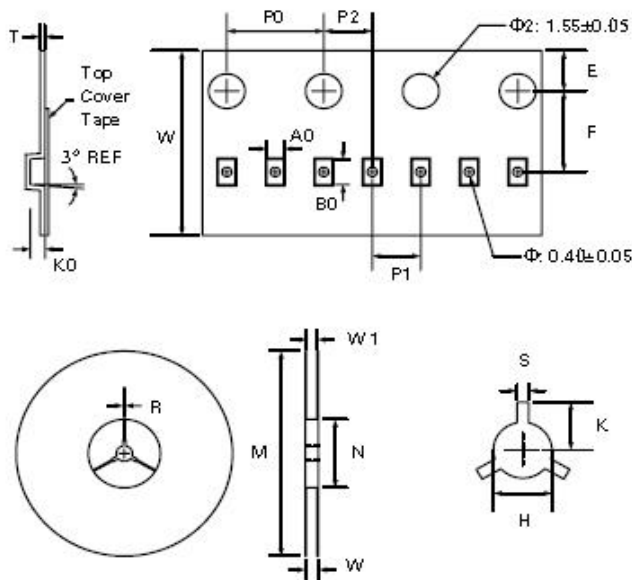


Mechanical Dimensions SOD882

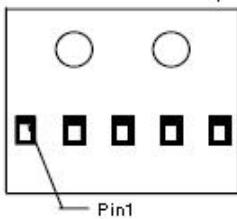


Symbol	Package			SOD882		
	JEDEC			MO-236		
	Millimeters			Inches		
	Min	Typ	Max	Min	Typ	Max
A	0.90	1.00	1.10	0.037	0.039	0.041
B	0.50	0.60	0.70	0.022	0.024	0.026
C	0.40	0.50	0.60	0.016	0.020	0.024
D	0.45			0.018		
E	0.20	0.25	0.35	0.008	0.010	0.012
F	0.45	0.50	0.55	0.018	0.020	0.022

Embossed Carrier Tape & Reel Specification — SOD882



Device Orientation in Tape



Symbol	Tape Dimensions	
	Millimeters	
	Min	Max
A0	0.65	0.75
B0	1.10	1.20
K0	0.50	0.60
E	1.65	1.85
F	3.45	3.55
P0	3.90	4.10
P1	1.90	2.10
P2	1.95	2.05
T	1.95	2.05
W	7.90	8.10

Symbol	Reel Dimensions (Size ϕ 178)	
	Millimeters	
	Min	Max
M	177.0	179.0
N	59.0	61.0
W	11.0	12.0
W1	8.5	9.5
H	12.5	13.5
S	1.9	2.1
K	10.8	11.2
R	0.95	1.05



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