SMP3030-01ETG

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Description

The SMP3030 includes low capacitance rail to rail diodes with an additional Zener diode 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 (±20kV contact discharge) without performance degradation. The low loading capacitance makes it ideal for protecting high speed data lines such as HDMI, DVI, USB2.0, USB3.0 and eSATA.

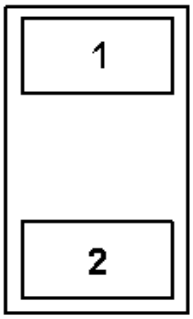
Features

- ESD protection in accordance with:
  IEC 61000-4-2 (ESD) ±30kV (air), ±20kV (contact)
  IEC 61000-4-5 (lightning) 3A (8/20μs)
  IEC 61000-4-4 (EFT) 40A (5/50ns)
- Low capacitance of 0.5pF @ VR=0V
- Low leakage current of 0.1μA at 5V
- Small SOD882 packaging helps save board space

Applications

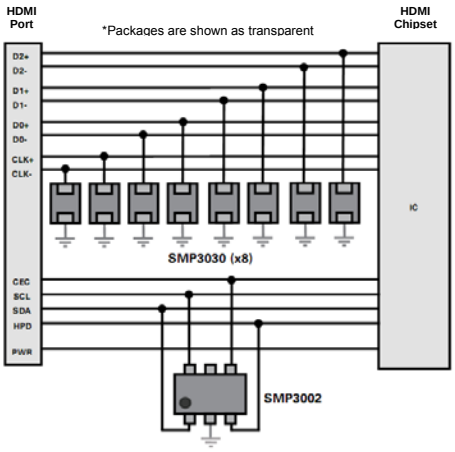
- Tablets
- Ultrabook
- eReader
- Smart Phones
- Digital Cameras
- MP3/ PMP
- Set Top Boxes
- Portable Medical

Pinout

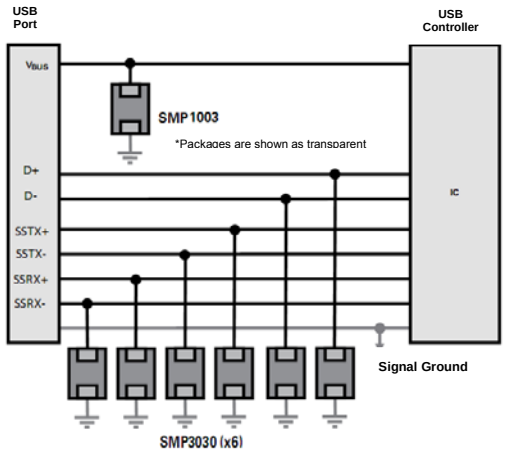


Functional Block Diagram

HDMI Application Example



USB3.0 Application Example



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Ordering Information:

Device	Package	Packaging Options	P0/P1	Packaging Speciications	Min. Order Qty.
SMP3030-01ETG	SOD882	Tape & Reel - 8mm tape/7" reel	4mm/2mm	EIA-481	10000

Absolute Maximum Ratings:

Parameter	Symbol	Value	Unit
Peak Pulse Current (tp=8/20μs)	I_{PP}	3.0	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	Unit
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}	-	-	-	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	-	9.2	-	V
		I_{PP} = 2A, tp=8/20μs, Fwd		10.0	-	V
ESD With stand Voltage[1]	V_{ESD}	IEC61000-4-2 (Contact)	±20	-	-	kV
		IEC61000-4-2 (Air)	±30	-	-	kV
Dynamic Resistance	R_{DYN}	$(V_{C2}-V_{C1})/(I_{PP2}-I_{PP1})$	-	0.55	-	Ω
Junction Capacitance[1]	C_j	Reverse Bias=0V, f=1 MHz	-	0.5	-	pF

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

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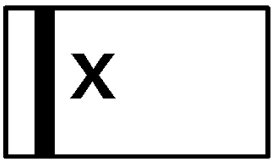
Marking Diagram



Where X is SMP3030-01ETG

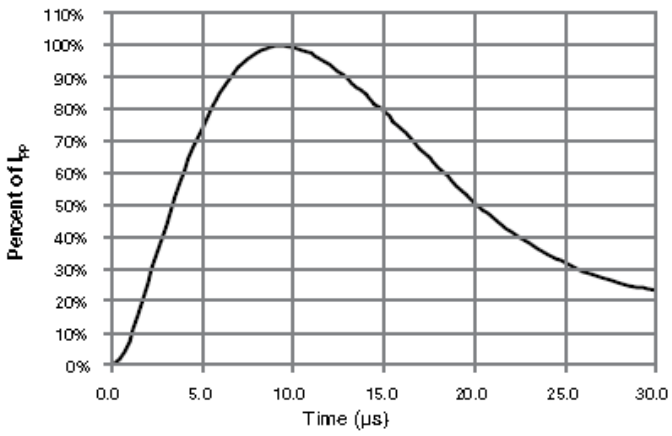
X = Product ID “T” or “W”

Part Name Information

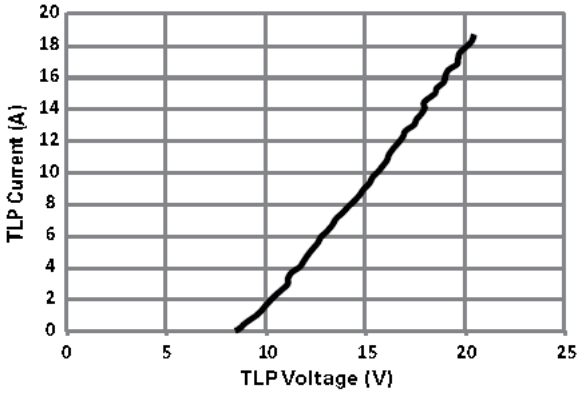
SMP 3030 – 01 E T G

- G= Green
- T= Tape & Reel
- Package
  E = SOD882
- Number of Channels
- Series
- TVS Diode Arrays

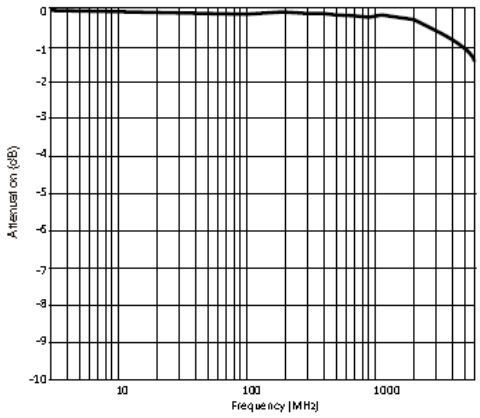
Pulse Waveform



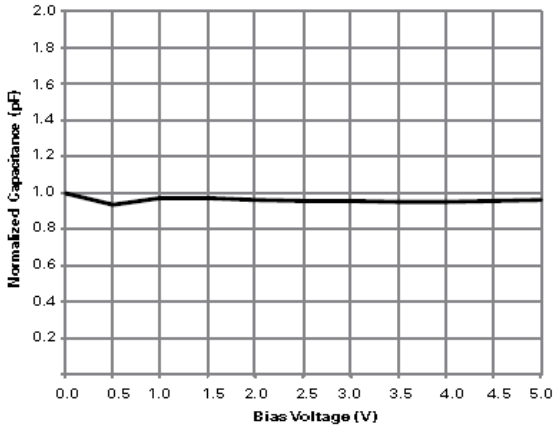
Transmission Line Pulsing (TLP) Plot



Insertion Loss (S21) I/O to GND



Normalized Capacitance vs. Reverse Voltage



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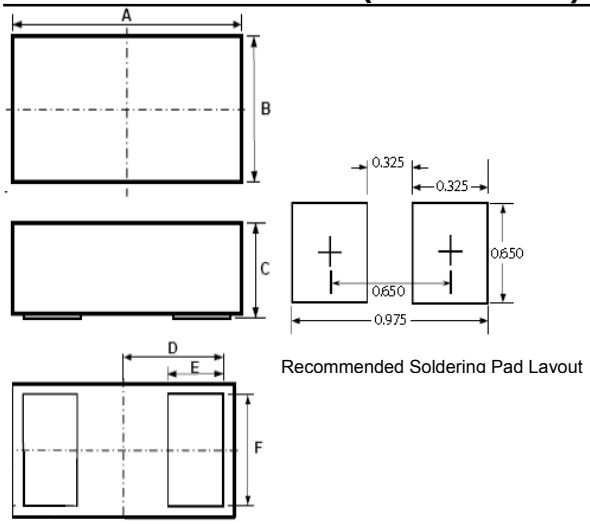
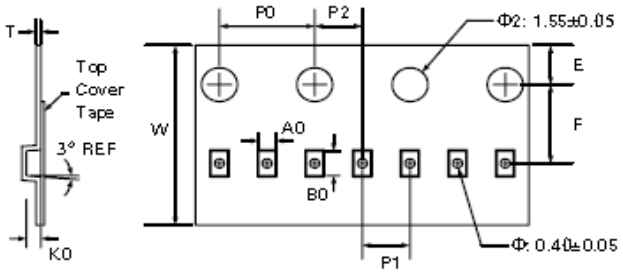
Mechanical Dimensions (In mm/Inches):

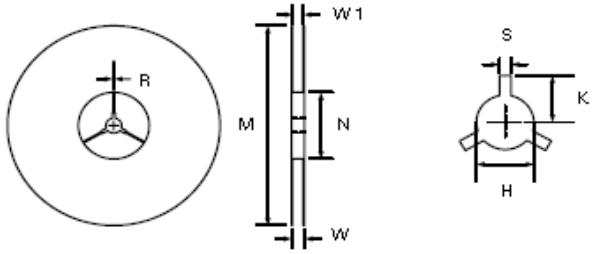


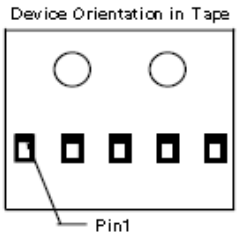
Recommended Soldering Pad Layout

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 Speciication — SOD882







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 Φ178)	
	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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