RECTRON SEMICONDUCTOR
TECHNICAL SPECIFICATION

TEP0801SLC

Ultra Low Capacitance TVS/ESD Protection Diode

DESCRIPTION

TEP0801SLC is a low-capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for high-speed data interfaces. With typical capacitance of 0.35pF only, TEP0801SLC is designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD), Level 4 (±15kV air, ±8kV contact discharge), IEC 61000-4-4 (electrical fast transient - EFT) (40A, 5/50 ns), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc.

TEP0801SLC uses ultra-small DFN1006 package. Each TEP0801SLC device can protect one high-speed data line. It offers system designers flexibility to protect single data line where space is a premium concern. The combined features of low capacitance, ultra-small size and high ESD robustness make TEP0801SLC ideal for high-speed data port and high-frequency line (e.g., USB 2.0 & antenna line) applications, such as cellular phones and HD visual devices.

FEATURES

✧Transient protection for high-speed data lines
  IEC 61000-4-2 (ESD) ±15kV (Air)
  ±8kV (Contact)
  IEC 61000-4-4 (EFT) 40A (5/50 ns)
  Cable Discharge Event (CDE)
✧Package optimized for high-speed lines
✧Ultra-small package (1.0mm×0.6mm×0.4mm)
✧Protects one data, control or power line
✧Low capacitance: 0.35pF (Typical)
✧Low leakage current: 10nA @ VRWM (Typical)
✧Low clamping voltage

MACHANICAL DATA

✧DFN1006 package
✧Flammability Rating: UL 94V-0
✧Packaging: Tape and Reel
✧High temperature soldering guaranted:260℃/10s
✧Reel size: 7 inch
✧
✧P/N suffix V means Halogen-free

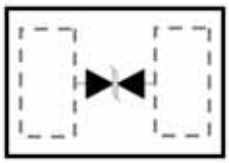
ORDERING INFORMATION

✧Device: TEP0801SLC
✧Package: DFN1006
✧Marking: 5BU
✧Material: Halogen free
✧Packing: Tape & Reel
✧Quantity per reel: 10,000pcs

APPLICATIONS

✧Serial ATA
✧Desktops, Servers and Notebooks
✧Cellular Phones
✧MDDI Ports
✧USB2.0 Power and Data Line Protection
✧Display Ports
✧Digital Visual Interfaces (DVI)

PIN CONFIGURATION



PACKAGE OUTLINE

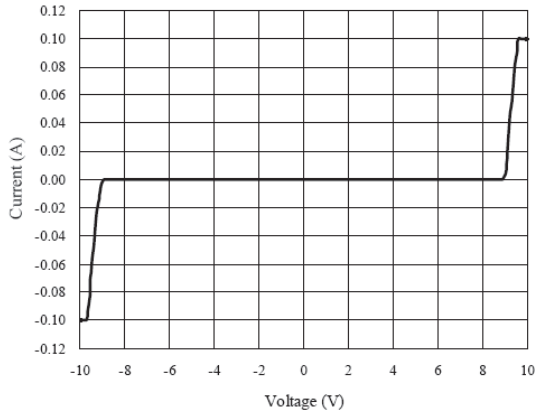
ABSOLUTE MAXIMUM RATING			
Symbol	**Parameter**	**Value**	**Units**
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	±17 ±12	kV
T_{OPT}	Operating Temperature	-55/+125	°C
T_{STG}	Storage Temperature	-55/+150	°C

ELECTRICAL CHARACTERISTICS (Tamb=25°C)						
Symbol	**Parameter**	**Test Condition**	**Min**	**Typ**	**Max**	**Units**
V_{RWM}	Reverse Working Voltage				5.0	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA	6.0	8.8	11	V
I_R	Reverse Leakage Current	V_{RWM} = 5V		0.01	1.0	μA
V_{C1}	Clamping Voltage 1	I_{PP} = 1A, t_p = 8/20μs			12	V
V_{C2}	Clamping Voltage 2	I_{PP} = 2A, t_p = 8/20μs			14	V
V_{C3}	Clamping Voltage 3	I_{PP} = 3A, t_p = 8/20μs			15	V
C_J	Junction Capacitance	V_R = 0V, f = 1MHz		0.35	0.50	pF

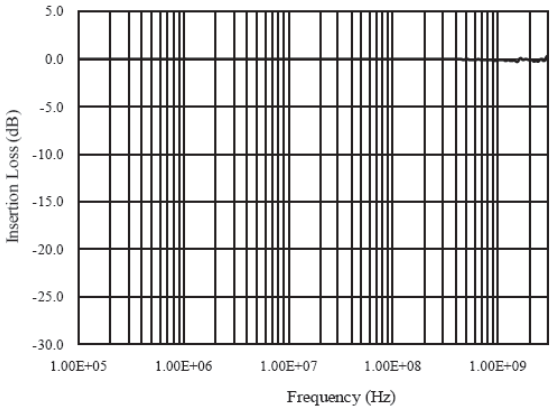
RATING AND CHARACTERISTIC CURVES (TEP0801SLC)

ELECTRICAL CHARACTERISTICS CURVE

Voltage Sweeping of I/O to I/O

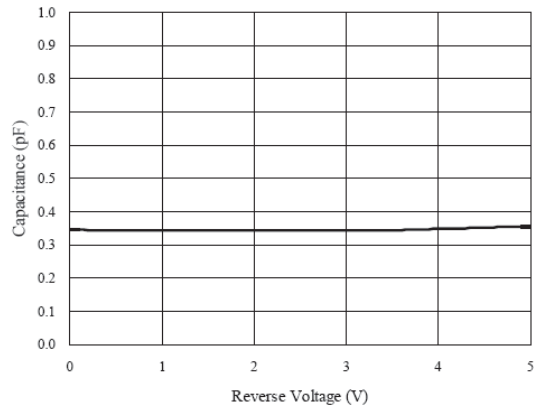


Insertion Loss S21 of I/O to I/O

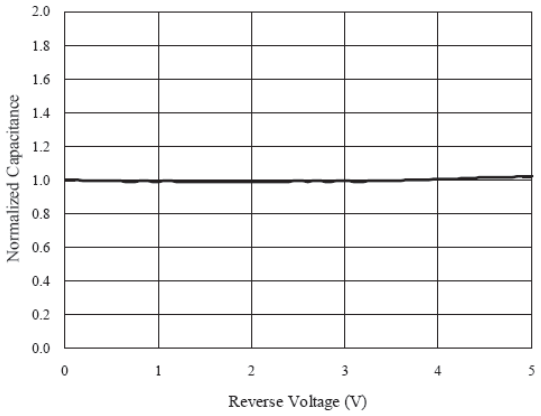


Capacitance *vs.* Voltage of I/O to I/O (f = 1MHz)

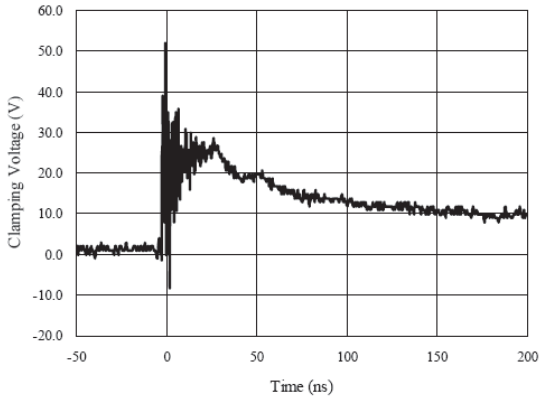
Capacitance *vs.* Reverse Voltage



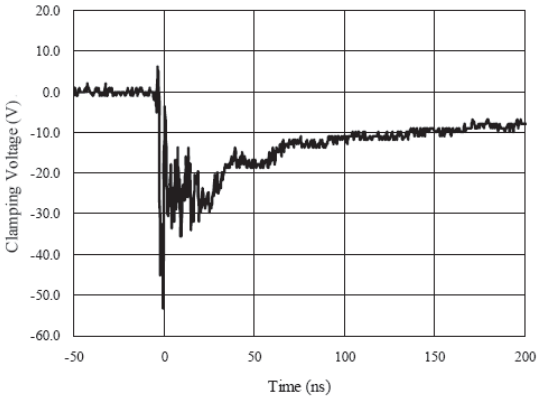
Normalized Capacitance *vs.* Reverse Voltage



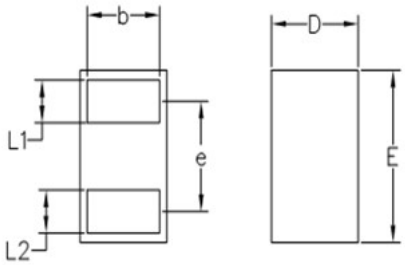
ESD Clamping of I/O to I/O (+8kV Contact per IEC 61000-4-2)

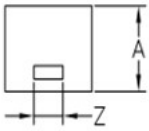


ESD Clamping of I/O to I/O (-8kV Contact per IEC 61000-4-2)



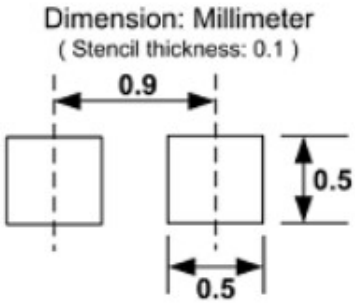
DFN1006 PACKAGE OUTLINE DIMENSIONS





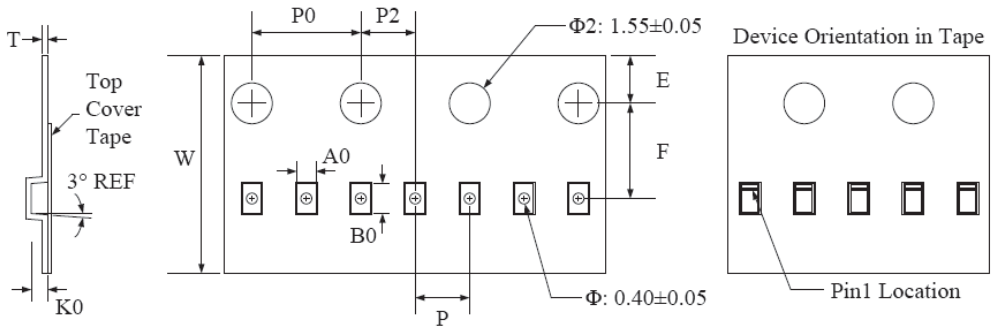
NOTE:ALL DIMENSIONS IN MM

	MIN	NOM	MAX
D	0.55	0.60	0.65
E	0.95	1.00	1.05
L1	0.20	0.25	0.30
L2	0.20	0.25	0.30
A	0.45	0.50	0.55
Z	0.15	0.20	0.25
b	0.45	0.50	0.55
e		0.64BSC	



Soldering Footprint

Carrier Tape



Symbol	W	A0	B0	K0	E	F	P	P0	P2	T
Dimensions (mm)	8.00±0.1	0.7±0.05	1.15±0.05	0.55±0.05	1.75±0.1	3.5±0.05	2.0±0.1	4.0±0.1	2.0±0.05	0.2±0.05

Packing Quantity

Reel		Inner Box		Carton	
Size	Quantity Per Reel	Size	Quantity Per Reel	Size	Quantity Per Reel
7 (inch)	10,000pcs	210*208*203 (mm)	150,000pcs	440*440*230 (mm)	600,000pcs
7 (inch)	10,000pcs	183*188*80 (mm)	60,000pcs	386*265*215 (mm)	360,000pcs

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