

Ultra Low Capacitance ESD Protection Device

DESCRIPTION

ESD2401CD is an ultra low capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for high-speed data interfaces. With typical capacitance of 0.3pF, ESD2401CD 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 ($\pm 15\text{kV}$ air, $\pm 8\text{kV}$ contact discharge), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc.

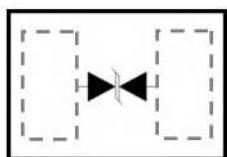
ESD2401CD uses ultra-small DFN1006 package.

Each ESD2401CD 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 ESD2401CD ideal for high-speed data port and high-frequency line applications.

ORDERING INFORMATION

- ✧ Device: ESD2401CD
- ✧ Package: DFN1006
- ✧ Packing: Tape & Reel
- ✧ Quantity per reel: 10,000pcs
- ✧ Reel size: 7 inch
- ✧ Packing Code:-T

PIN CONFIGURATION



FEATURES

- ✧ Transient protection for high-speed data lines
IEC 61000-4-2 (ESD) $\pm 15\text{kV}$ (Contact)
 $\pm 20\text{kV}$ (Air)
Cable Discharge Event (CDE)
- ✧ Package optimized for high-speed lines
- ✧ Ultra-small package (1.0mm $\times$ 0.6mm $\times$ 0.5mm)
- ✧ Protects one data, control line
- ✧ Low capacitance: 0.3pF (Typical)
- ✧ Low leakage current
- ✧ Low clamping voltage

MACHANICAL DATA

- ✧ DFN1006 package
- ✧ Flammability Rating: UL 94V-0
- ✧ High temperature soldering guaranteed: 260 $^{\circ}\text{C}$ /10s
- ✧ Marking: 24BU
- ✧ Material: Halogen free

APPLICATIONS

- ✧ Local Area Network (LAN) equipment
- ✧ FireWire
- ✧ Computers and peripherals
- ✧ Communication systems
- ✧ High-speed data lines

PACKAGE OUTLINE



2025-10/01
REV:0

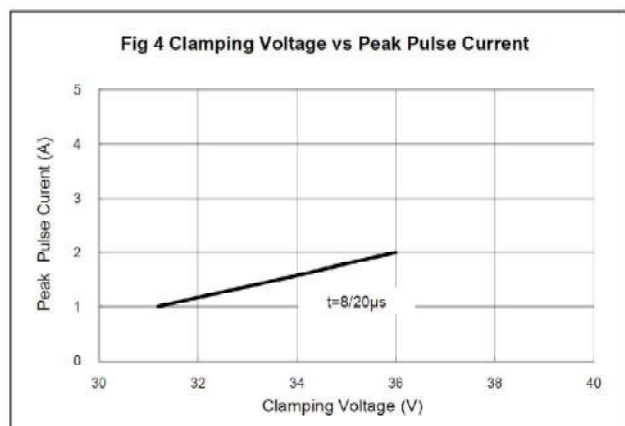
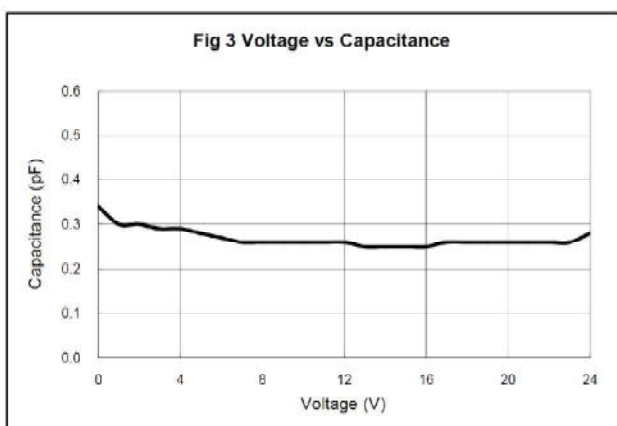
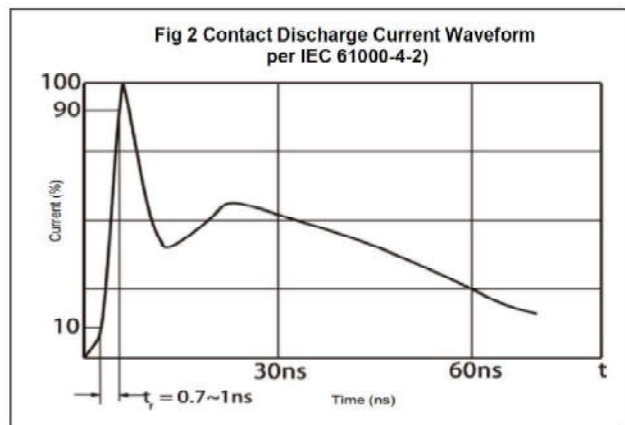
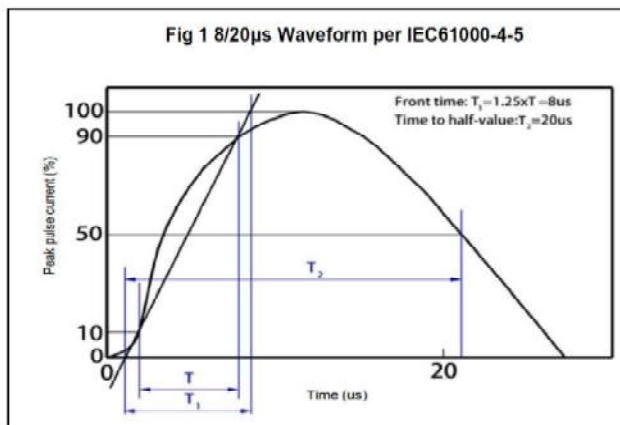
ABSOLUTE MAXIMUM RATING

Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Contact) ESD per IEC 61000-4-2 (Air)	± 15 ± 20	kV
P_{PP}	Peak Pulse Power (8/20 μ s)	38	W
T_{OPT}	Operating Temperature	-55~125	$^{\circ}$ C
T_{STG}	Storage Temperature	-55~150	$^{\circ}$ C

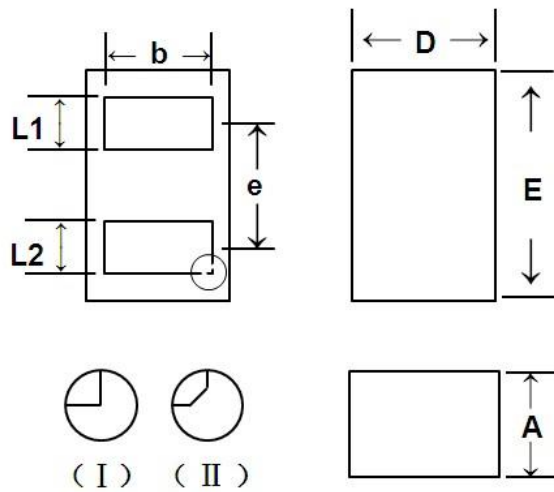
ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}$ C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage				24	V
V_{BR}	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	26			V
I_R	Reverse Leakage Current	$V_{RWM} = 24\text{V}$			500	nA
V_C	Clamping Voltage	$I_{PP} = 1\text{A}$, $t_p = 8/20\mu\text{s}$			38	V
C_J	Junction Capacitance	$V_R = 0\text{V}$, $f = 1\text{MHz}$		0.3	0.5	pF

RATING AND CHARACTERISTICS CURVES (ESD2401CD)

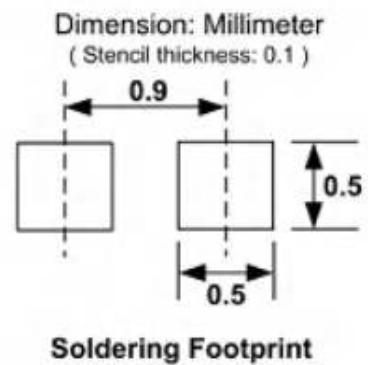


DFN1006 PACKAGE OUTLINE DIMENSIONS



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
b	0.45	0.50	0.55
e		0.64BSC	



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