



ESD4501CM

Ultra Low Capacitance ESD Protection Diode

Description

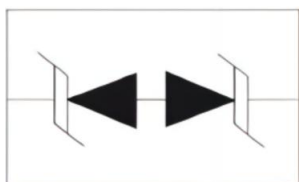
The ESD4501CM is designed to protect voltage sensitive component from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is suited for use in cellular phones, portable devices, digital cameras, power supplies and many other portable applications where board space comes at a premium. Also because of its low capacitance, it is suited for use in high frequency designs such as high speed line application.

This device has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by ESD (electrostatic discharge), and EFT (electrical fast transients)

Ordering Information

- Device:ESD4501CM
- Package:DFN1006
- Marking:B8
- Material:Halogen free and RoHS
- Packing:Tape & Reel
- Quantity per reel:10,000pcs

Pin Configuration



Features

- IEC61000-4-2(ESD) $\pm 30\text{kV}(\text{air})$
 $\pm 30\text{kV}(\text{contact})$
- IEC61000-4-4(EFT)40A(5/50ns)
- Peak power dissipation: 400W(8/20 μs)
- Protects one V_{CC} or data line
- Low clamping voltage
- Working voltage: 4.5V
- Low leakage current
- Low capacitance

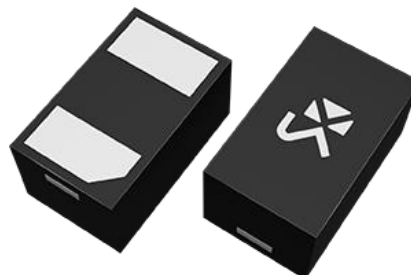
Mechanical Data

- DFN1006 package
- Flammability Rating: UL 94V-0
- High temperature soldering guaranteed: 260°C/10s
- Packaging: Tape and Reel
- Reel size: 7 inch

Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants(PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Networking and Telecom
- Serial and Parallel Ports
- Peripherals

Circuit Diagram





ESD4501CM

Maximum Rating

Parameter	Symbol	Value	Unit
ESD per IEC 61000-4-2(Air)	V_{ESD}	± 30	kV
ESD per IEC 61000-4-2(Contact)		± 30	
Peak Pulse Power(8/20 μ s)	P_{PP}	400	W
Operating Temperature	T_{OPT}	-55~+150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~+150	$^{\circ}C$

Electrical Characteristics ($T_A=25^{\circ}C$)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				4.5	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	5.0		8.0	V
Reverse Leakage Current	I_R	$V_{RWM}=4.5V$			1	μA
Clamping Voltage	V_C	$I_{PP}=1A, t_p=8/20\mu s$			6.0	V
		$I_{PP}=40A, t_p=8/20\mu s$			12	V
Junction Capacitance	C_J	$V_R=0V, f=1MHz$			100	pF

Typical Characteristics

Fig 1 8/20 μ s Waveform per IEC61000-4-5

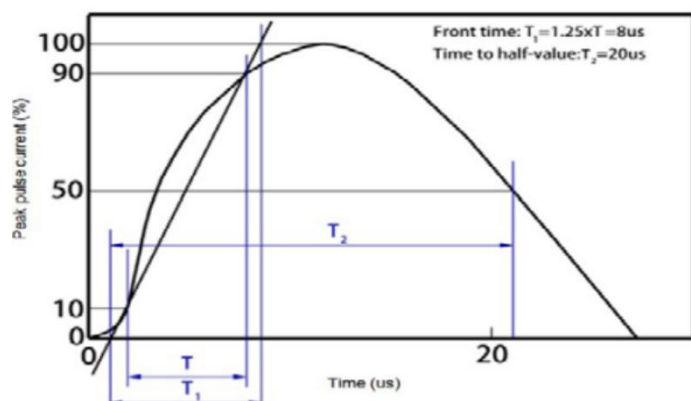
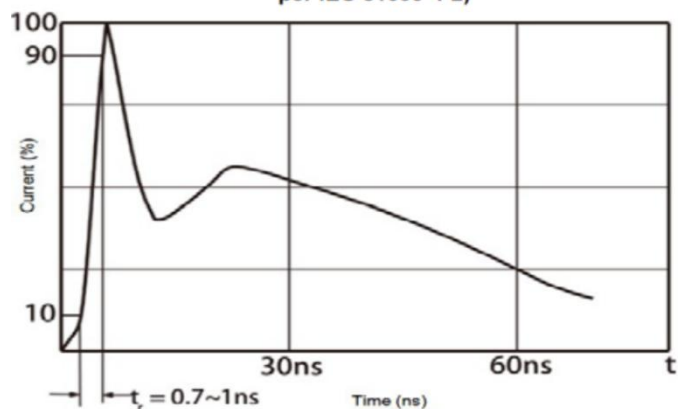


Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2)



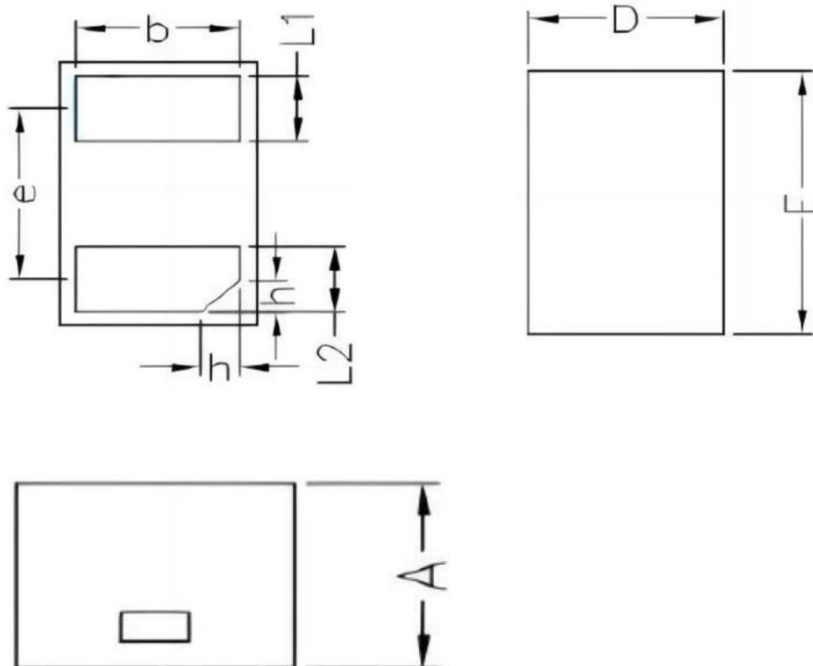


ESD4501CM

Package Information

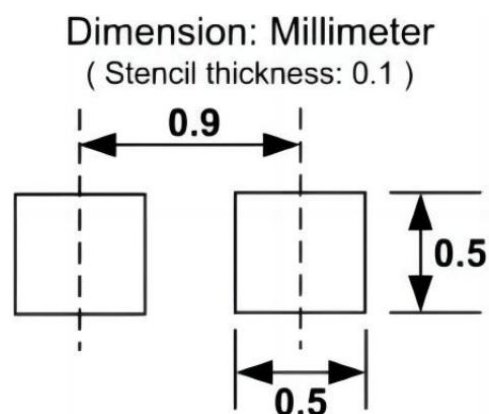
DFN1006

Dimensions in mm



Symbol	Dimensions In Millimeters		
	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
b	0.45	0.50	0.55
e	0.65 BSC		
A	0.45	0.50	0.55
h	0.07	0.12	0.17

Soldering Footprint





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