CREATEK Microelectronics

Ultra Low Capacitance ESD Protection Diode in 0402

Features

- ESD protection for high speed data lines to IEC61000-4-2
- ESD contact discharge typical 20KV, max 25KV
- ESD air discharge typical 25KV, max 30KV
- Surface mount
- Extremely low capacitance
- Very low leakage current
- Fast response time
- Bi-directional ESD protection
- Lead free solder termination
- The best ESD protection for high frequency, low voltage applications



■ Case: 0402 (plastic package). Lead free; RoHS compliant

■ Molding Compound Flammability Rating: UL 94 V-0

■ **Terminals:** High temperature soldering guaranteed:

260 °C/10 sec. at terminals

Applications

- USB3.0, Firewire, DVI, HDMI, S-ATA
- Thunderbolt, Display Port
- Mobile HDMI Link, MDDI, MIPI, SWP / NFC

Absolute Maximum Ratings

Ratings at 25 °C, ambient temperature unless otherwise specified

Parameter	Symbol	Value	Unit
Maximum Contact discharge voltage Per IEC61000-4-2		25KV	V
Maximum Air discharge voltage Per IEC61000-4-2		30KV	V
Maximum Operating temperature	Toper	-40 to +125	°C
Maximum Storage temperature	Тѕтс	-55 to +125	°C
Maximum lead temperature for soldering during 10s	T∟	260	°C

Electrical Characteristics

(T_A = 25 °C unless otherwise specified)

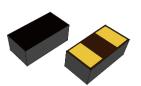
Parameter	Symbol	Test Conditions	Min	Тур	Max	Units
Rated Voltage	VR				6	V
Trigger voltage	VT	IEC61000-4-2 8KV contact discharge		300		V
Clamping voltage	Vc	IEC61000-4-2 8KV contact discharge		35		V
Leakage current	lı	DC 12V shall be applied on component			0.10	uA
Capacitance	СР	V _R = 0V, f = 1MHz		0.05		pF

Note: 1 Trigger and clamping voltage are measured per IEC 61000-4-2, 8KV contact discharge method.

2 After reliability tests such as high temp storage, temp cycles, continuous ESD strike etc, the maximum leakage current is less than 10uA.

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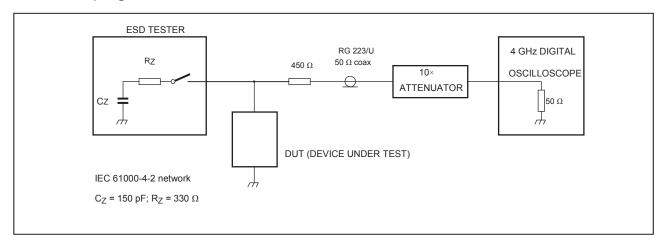
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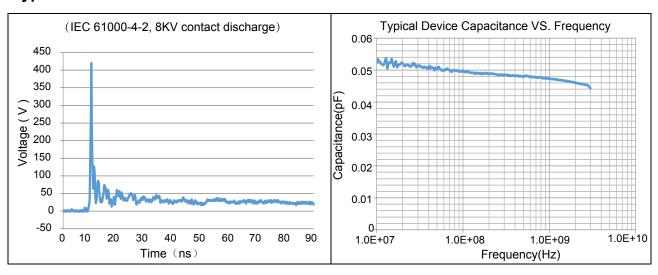


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ESD Clamping Test



Typical Characteristics



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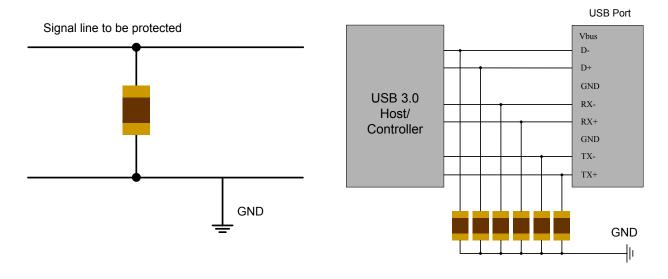
CESDP0402UC6VB

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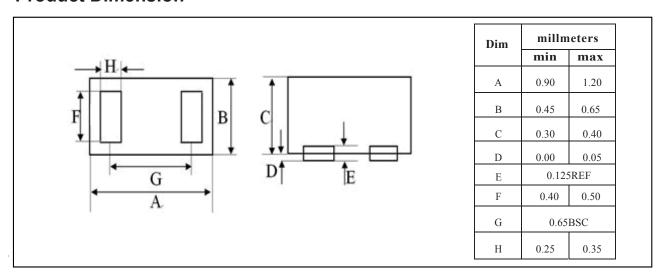
ESD Protection for Signal Line

The CESD is designed for the protection of one bidirectional data line from ESD damage.

- Place the CESD as close to the input terminal or connector as possible.
- Minimize the path length between the CESD and the protected signal line.
- Use ground planes whenever possible.



Product Dimension



Ordering inormation

Order code	Package	Packaging option	Base quantity	Packaging specification
CESDP0402UC6VB	0402	Tape and reel	10000pcs / reel	EIA STD RS-481

Revision history

Date	Revision	Changes
23-May-2016	1.0	Initial release

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CESDP0402UC6VB

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