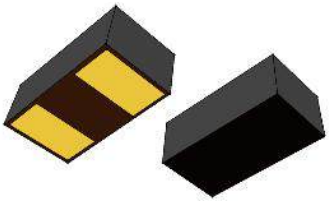
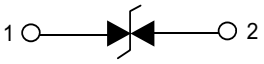
Descriptions

Due to its extremely small package, ultra-fast response time is suitable for most portable electronic devices; it can be used for high-speed signals (such as USB3.0, MIPI, HDMI, etc.) due to its ultra-low junction capacitance. The low clamp voltage can effectively prevent the IO port or the post-stage circuit from being disturbed by ESD when the ESD event occurs.



Features

1.Lead free type.
2.Compact size for 1006(0402)
3.Insulator over coat keeps excellent low and stable leakage current.
4.Quick response time(<1ns).
5.Low Clamping Voltage.
6.Meet IEC 61000-4-2 standard.
--Contact discharge mode:typical ±8kV
--Air discharge mode:typical ±15kV



Circuit diagram

Applications

Application for Mother Board,Notebook, cellular Phone,PDA,handheld device, DSC,DV,Scanner,and Set-Top Box etc.

Part Numbering

CV	1006D	03	001	T
(1)	(2)	(3)	(4)	(5)

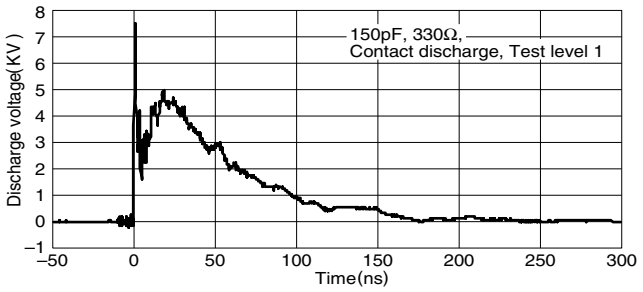
(1) CV : Series Name
(2) Size:1006(0402)
(3) 03: V_{DC} 3.3V
(4) 001 : 0.05PF~0.15PF
(5) Packing: Tape & Ree

Specifications

Part Number	Continuous Operating Voltage V_{DC} (V) Max	Clamping Voltage V_C (V) Typ	Trigger Voltage V_T (V) Typ	Leakage Current I_L (nA) Max	Capacitance C_J (pF) Typ
CV1006D03001T	3.3	40.0	450.0	100.0	0.05
CV1006D05001T	5.0	40.0	450.0	100.0	0.05
CV1006D06001T	6.0	40.0	450.0	100.0	0.05
CV1006D12001T	12.0	40.0	450.0	100.0	0.05
CV1006D14001T	14.0	40.0	450.0	100.0	0.05
CV1006D18001T	18.0	40.0	450.0	100.0	0.05
CV1006D24001T	24.0	40.0	450.0	50.0	0.05
CV1006D30001T	30.0	40.0	450.0	50.0	0.05
CV1006D36001T	36.0	40.0	450.0	50.0	0.05
CV1006D48001T	48.0	40.0	450.0	50.0	0.05

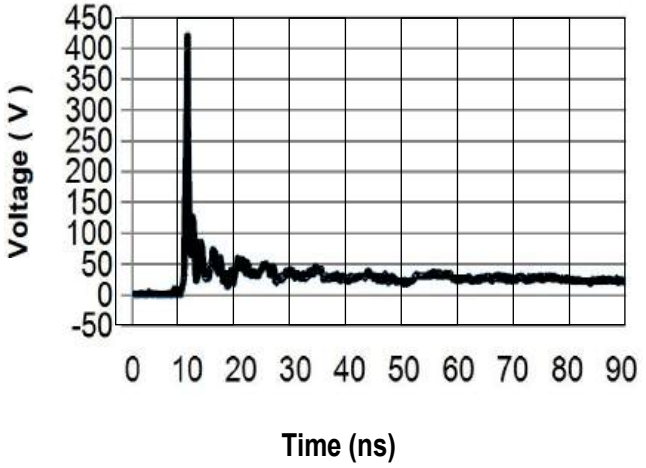
Electrostatic absorption characteristic

Discharge voltage waveform



Current wave parameter **[IEC61000-4-2]**

level	ESD Charging voltage (kV)	Discharge 1 peak current (A)	Rise time (ns)
1	2	7.5	0.7 to 1.0
2	4	15	0.7 to 1.0
3	6	22.5	0.7 to 1.0
4	8	30	0.7 to 1.0



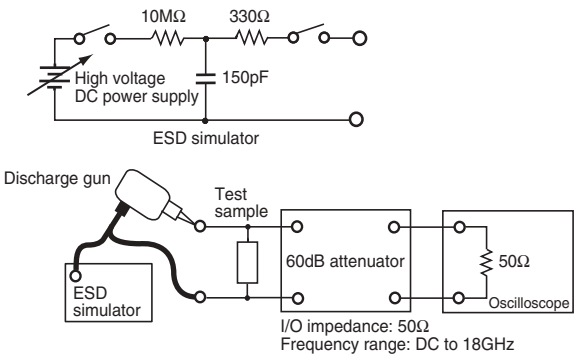
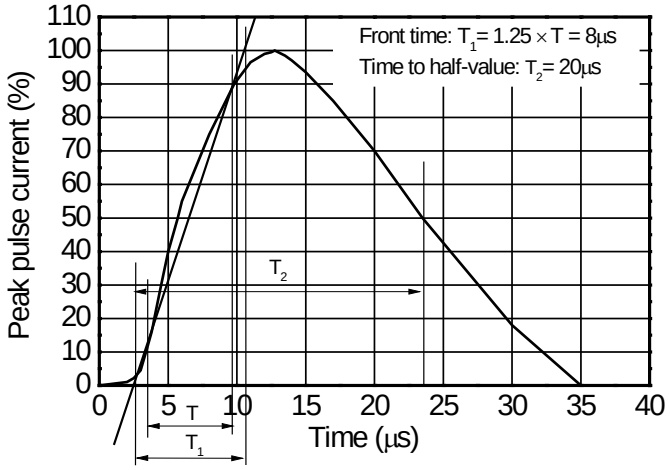
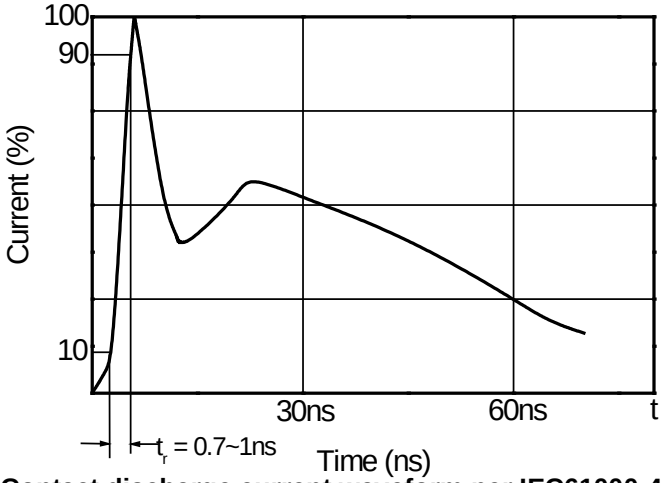


Fig.1 Typical ESD Response
（IEC 61000-4-2, 8kV contact discharge）

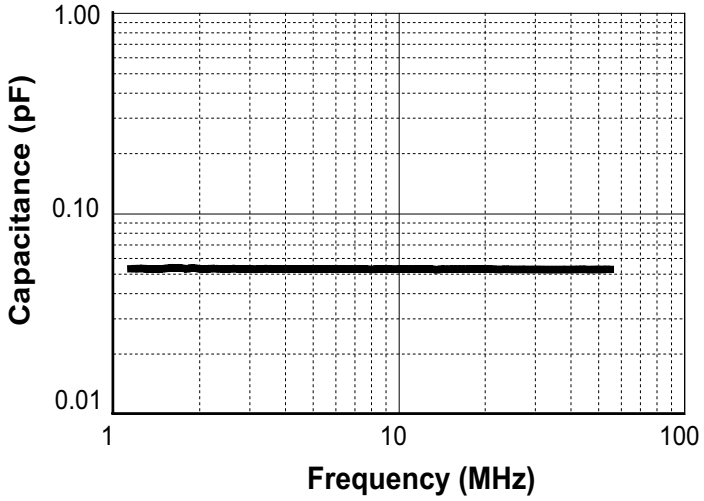
Typical characteristics (T_A=25°C, unless otherwise noted)



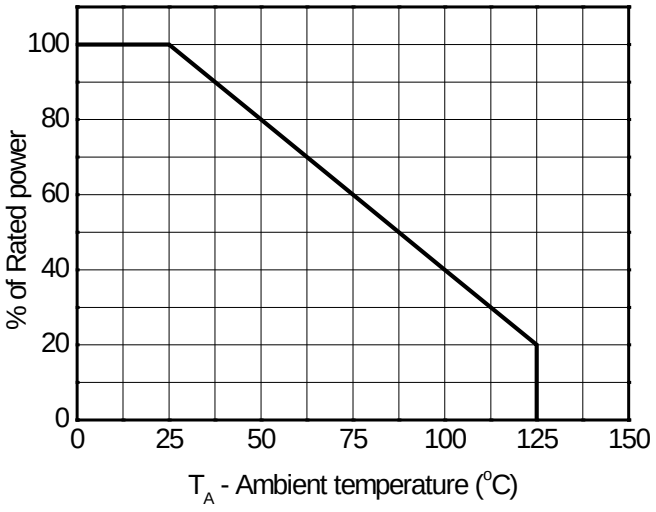
8/20μs waveform per IEC61000-4-5



Contact discharge current waveform per IEC61000-4-2

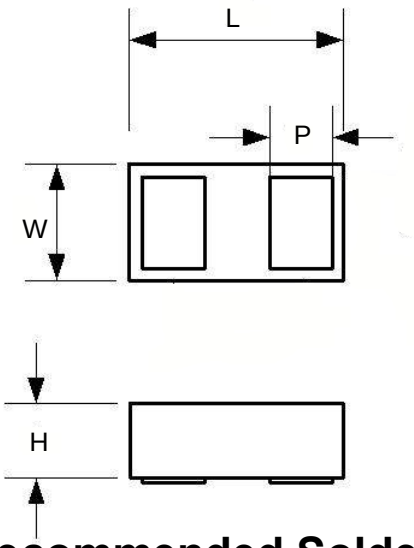


Capacitance vs. Reveres voltage



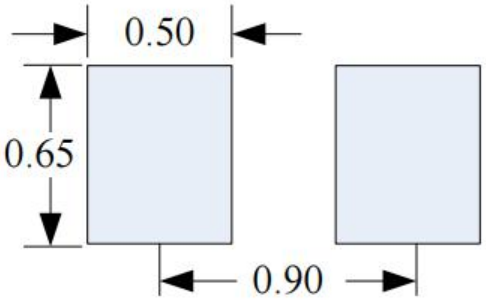
Power derating vs. Ambient temperature

PAD Dimension



Dimension	Unit: Millimeters	
	Min.	Max.
L	0.90	1.10
W	0.42	0.62
P	0.15	0.35
H	0.25	0.45

Recommended Solder Pad Footprint



***Sizes in mm**

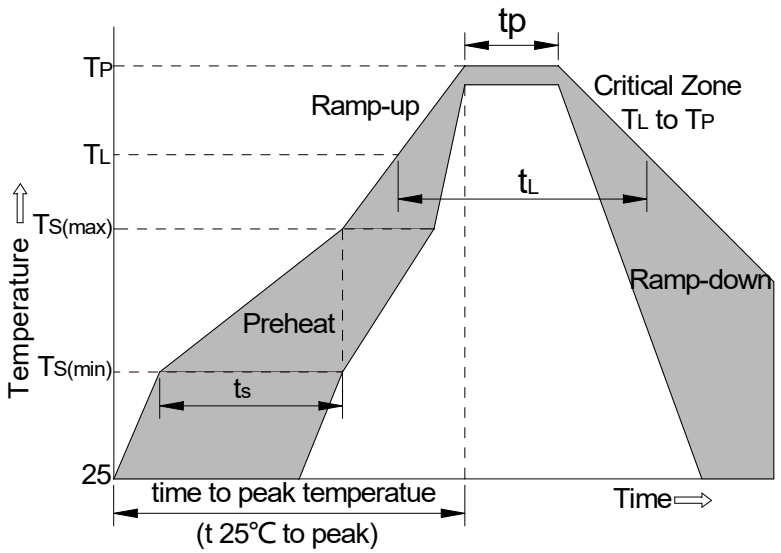
Environmental Performance

Item	Specifications	Test Condition
Bias Humidity	ΔVv/ Vv ≤±10%	90%RH,40℃,Working Voltage,1000hrs
Thermal Shock		-55℃ to 125℃,30min.cycle,5 cycles
Full Load Voltage		Working Voltage ,125℃,1000hrs
Solder Leach Resistance	(1)ΔVv/ Vv ≤±10% (2)IL≤1nA at Working Voltage (3)Solder Wetting Area≥95%	260±5℃,10 ±1sec.

Package

Size EIA(EIAJ)	1006
Standard Packing Quantity(pcs / reel)	10,000

Soldering Parameters



Reflow Condition		Pb-Free Assembly
Pre-heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
xTime 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C