BTRD04A005

ESD Protection Devices

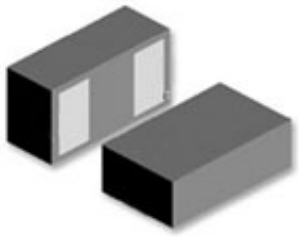
Feature

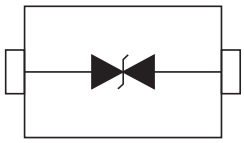
- ESD protection for high speed data lines to IEC61000-4-2
- ESD contact discharge typical 8KV, max 15KV
- ESD air discharge typical 15KV, max 25KV
- Surface mount
- Extremely low capacitance
- Very low leakage current
- Fast response time
- Bi-directional ESD protection
- Lead free solder termination
- The best ESD protection for high frequency, low voltage applications

Description

This device is an ultra low capacitance ESD product designed to protect very high speed data interfaces. BTRD04A005 has a typica l capacitance of only 0.05pf (I/O to GND), and it can be used to meet the ESD immunity requirements of IEC61000-4-2 (15KV air, 8KV contact discharge).

0402





Schematic Diagram

Application

- High Definition Multi-Media Interface (HDMI)
- Digital Visual Interface (DVI)
- Display Port Interface (DP)
- Unified Display Interface (UDI)
- Mobile Display Digital Interface (MDDI)
- Gigabit Ethernet
- USB2.0 and USB3.0
- IEEE1394 interface

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Maximum Contact discharge voltage Per IEC61000-4-2	---	15KV	V
Maximum Air discharge voltage Per IEC61000-4-2	---	25KV	V
Maximum Operating temperature	T_{OPER}	-55 to +125	℃
Maximum Storage temperature	T_{STG}	-55 to +125	℃
Maximum lead temperature for soldering during 10s	T_L	260	℃

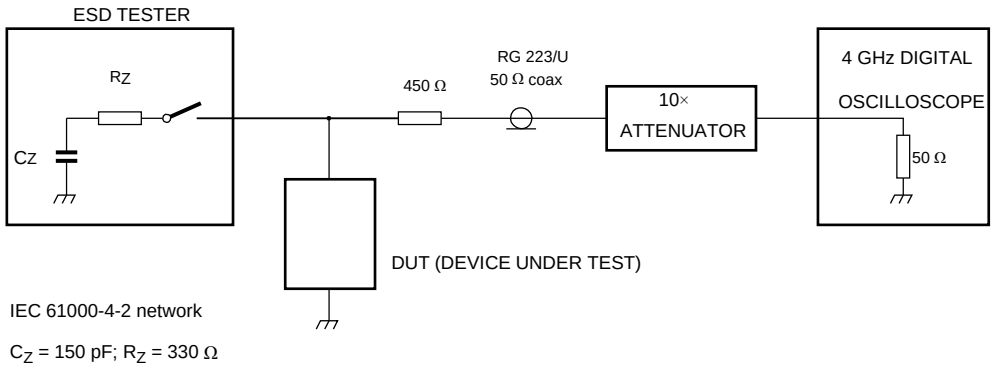
Electrical Characteristics(T_A=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Rated Voltage	V_R	---	---	---	5	V
Trigger voltage	V_T	IEC61000-4-2 8KV contact discharge	---	300	---	V
Clamping voltage	V_C	IEC61000-4-2 8KV contact discharge	---	35	---	V
Leakage current	I_L	DC 5V shall be applied on component	---	0.01	0.10	uA
Capacitance	C_P	V_R = 0V, f = 1MHz	---	0.05		pF

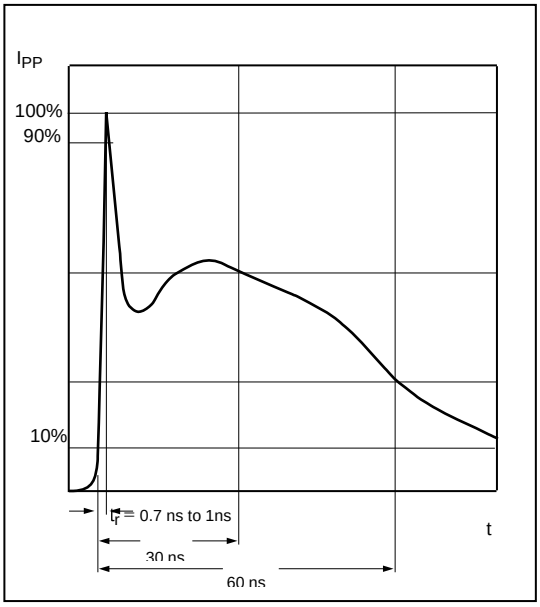
Note: 1 Trigger and clamping voltage are measured per IEC 61000-4-2, 8KV contact discharge method.

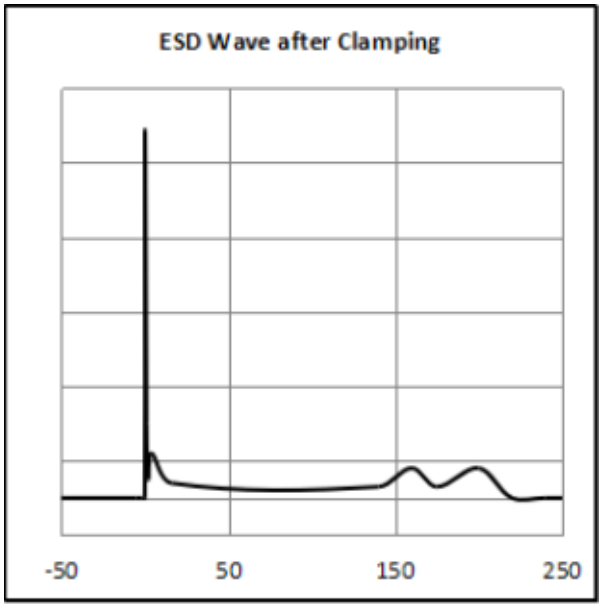
2 After reliability tests such as high temp storage, temp cycles, continuous ESD strike etc, the maximum leakage current is less than 10uA.

ESD Clamping Test

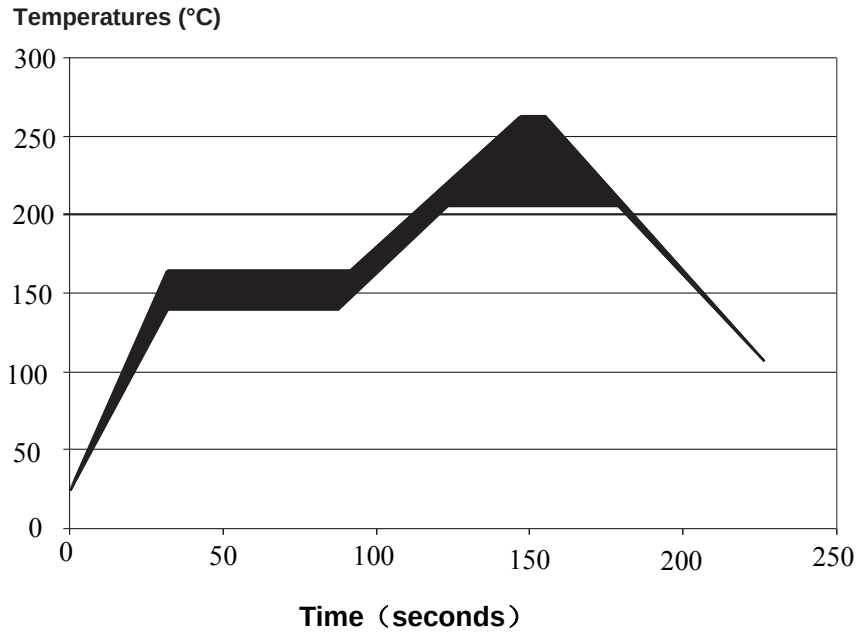


ESD Clamping Test Waveforms

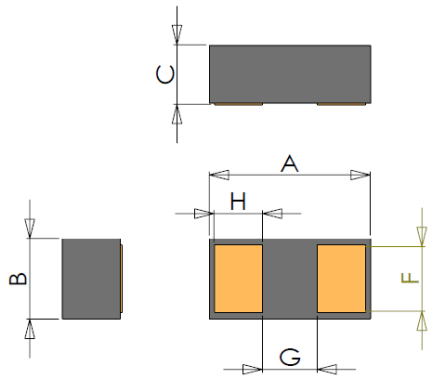




Solder Reflow Recommendations

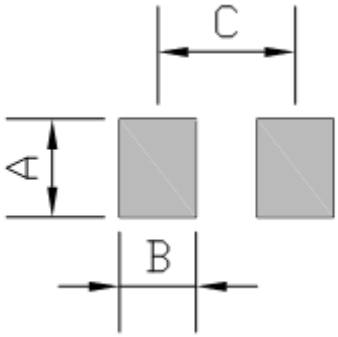


Product Dimension



Symbol	Dimension			Unit
	Min	Typ	Max	
A	0.95	1.0	1.05	mm
B	0.45	0.50	0.55	
C	0.32	0.36	0.40	
H	0.28	0.30	0.32	
F	0.41	0.43	0.45	
G	0.32	0.34	0.36	

PAD Dimension



Symbol	Dimension	Unit
A	0.65	mm
B	0.50	
C	0.90	

Solder thickness 0.08 to 0.12mm

Order Information

Device	Package	Net Weight	Carrier	Quantity	HSF Status
BTRD04A005	0402	0.44 mg	Tape & Reel	10,000pcs/reel	RoHS compliant

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