DESCRIPTION

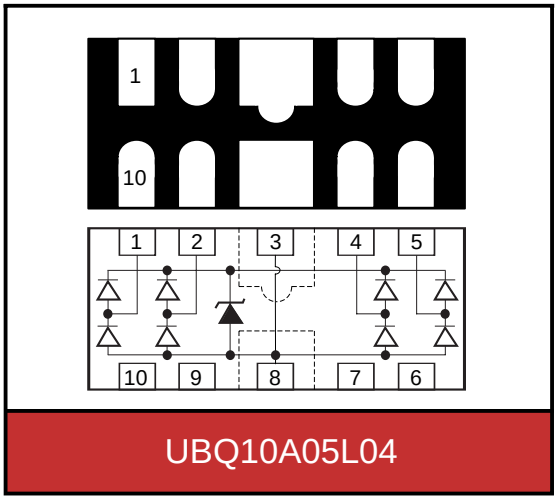
UBQ10A05L04 is a ultra low capacitance TVS array designed to protect high speed data interfaces. This series has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from over-voltage caused by electrostatic discharge(ESD),cable discharge events (CDE), and electrical fast transients (EFT).

The UBQ10A05L04 has a typical capacitance of only 0.50pF between I/O pins. This allows it to be used on circuits operating in excess of 3GHz without signal attenuation. They may be used to meet the ESD immunity requirements of IEC 61000-4-2, Level 4 (±15kv air, ±8kV contact discharge). They are designed for easy PCB layout by allowing the traces to run straight through the device. The combination of small size, low capacitance, and high level of ESD protection makes them a flexible solution for applications such as HDMI, UDI, Display Port™ , MDDI, Serial ATA and Infiniband circuits.

Contact : ±8kV
Air : ±15kV

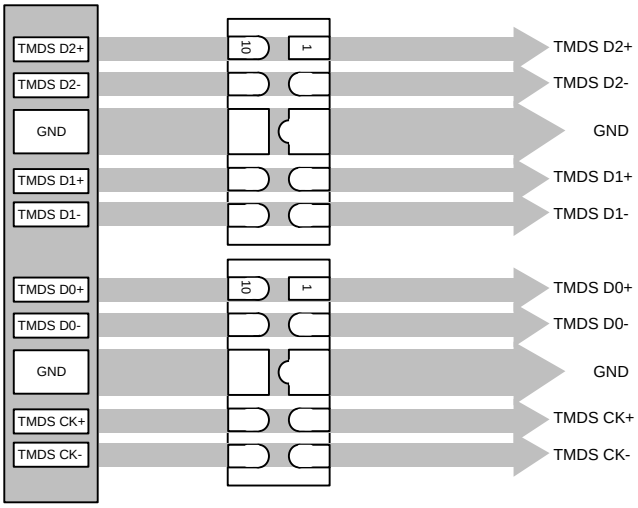
SPECIFICATION FEATURES

- IEC61000-4-2 ESD 15KV Air,8KV contact compliance
- QFN-10 (2.5×1.0×0.5mm) surface mount package
- Protects four I/O lines
- Working voltage : 5V
- Low leakage current
- Low operating and clamping voltages
- Solid-state silicon avalanche technology
- Lead Free/RoHS compliant
- Marking: B 54 or 0524P



APPLICATIONS

- High Definition Multimedia Interface (HDMI 1.4)
- Digital Visual Interface (DVI)
- Unified Display Interface (UDI)
- Display Port Interface
- MDDI Ports
- PCI Express
- Serial ATA



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
ESD voltage (Contact discharge)	V_{ESD}	±8	kV
ESD voltage (Air discharge)		±15	
Lead soldering temperature	T_L	260	℃
Storage & operating temperature range	T_{STG} ,T_J	-55~+150	℃

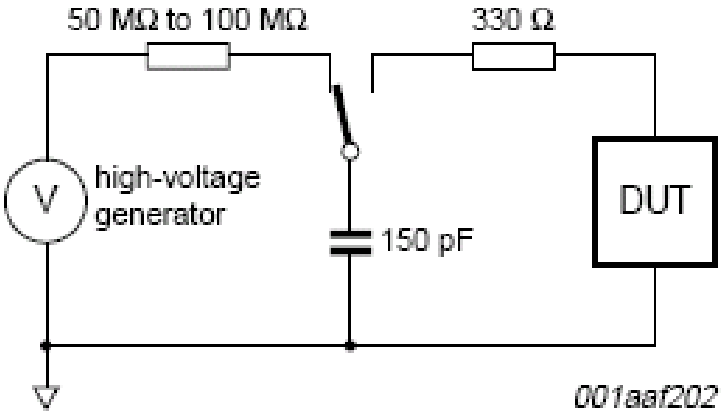
ELECTRICAL CHARACTERISTICS (T_J=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				5	V
Reverse breakdown voltage	V_{BR}	I_{BR}=1mA	6			V
Reverse leakage current	I_R	V_R=5V Each I/O pin			1	μA
Clamping voltage (tp=8/20μs)	V_C	I_{PP}=1A		9.8		V
Off state junction capacitance	C_J	V_R=0V, f=1MHz I/O pin to GND		0.6		pF
		V_R=0V, f=1MHz Between I/O pins		0.3		pF

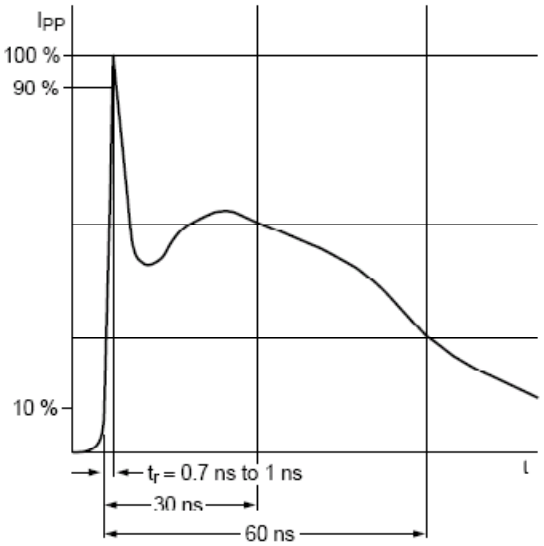
ESD PROTECTION STANDARDS

IEC 61000-4-2

Interfaces of consumer electronic equipment are widely specified according to the International Electrotechnical Commission standard IEC 61000-4-2. This standard is not targeted towards particular devices but towards general equipment, systems and subsystems that may be involved in electrostatic discharge. consists of a 150 pF capacitor and a 330 Ω series resistor representing the counterpart to the Device Under Test (DUT).



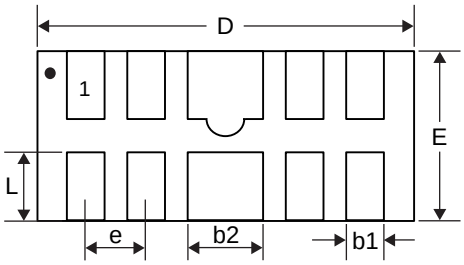
Test circuit according IEC 61000-4-2

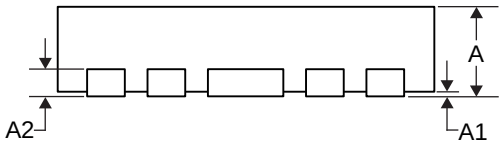


ESD surge according IEC 61000-4-2

PACKAGE AND SUGGESTED PAD LAYOUT DIMENSION

QFN-10 (unit:mm)





DIMENSIONS						
SYMBOL	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.018	0.022	0.026	0.45	0.55	0.65
A1	0	0.001	0.002	0	0.03	0.05
A2		0.005REF			0.13REF	
b1	0.006	0.008	0.010	0.15	0.20	0.25
b2	0.014	0.016	0.018	0.35	0.40	0.45
D	0.094	0.098	0.102	2.40	2.50	2.60
E	0.035	0.039	0.043	0.90	1.00	1.10
e		0.020BSC			0.50BSC	
L	0.012	0.015	0.017	0.30	0.38	0.43