

DESCRIPTION

The series are an 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 data and transmission lines from overvoltage caused by ESD(electrostatic discharge), CDE(cable discharge events) and lightning.

The unique design incorporates surge rated, low capacitance steering diodes and a TVS diode in a single package. During transient conditions, the steering diodes direct the transient current to ground. The internal TVS diode clamps the transient voltage to a safe level. The ultra low capacitance array configuration allows the user to protect up to the high speed data lines. These devices are in a signal package, RoHS/WEEE compliant, SOD-323 package. It measures 2.5×1.25×1.0mm.

The series devices may be used to meet the immunity requirements of IEC 61000-4-2(ESD), IEC 61000-4-4(EFT) and IEC 61000-4-5(Surge).

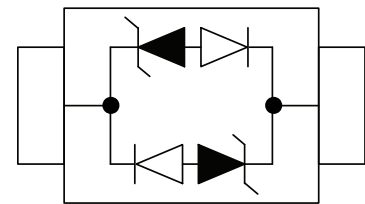


Contact : ±8kV
Air : ±15kV



SPECIFICATION FEATURES

- IEC61000-4-2 ESD 15KV Air,8KV contact compliance
- SOD-323 surface mount package
- Protects one I/O line
- Peak power dissipation of 350W under 8/20μs waveform
- Working voltage: 3.3V, 5V, 12V and 15V
- Low leakage current
- Low operating and clamping voltages
- Solid-state silicon avalanche technology
- Lead Free/RoHS compliant



UDD32CXXL01

APPLICATIONS

- USB 2.0 and USB 3.0 interface
- 10/100/1000 Ethernet
- Personal digital assistants (PDA)
- Serial ATA protection
- Digital visual interface (DVI)
- Wireless system devices
- Handhelds and notebooks
- Digital cameras
- RF interface

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak pulse power (tp=8/20μs waveform)	P _{PP}	350	W
ESD voltage (Contact discharge)	V _{ESD}	±8	kV
ESD voltage (Air discharge)		±15	
Lead soldering temperature	T _L	260	°C
Storage & operating temperature range	T _{STG} , T _J	-55~+150	°C

ELECTRICAL CHARACTERISTICS (T_J=25°C)

UDD32C03L01 (Marking: AC)

Rating	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V _{RWM}				3.3	V
Reverse breakdown voltage	V _{BR}	I _{BR} =1mA	4			V
Reverse leakage current	I _R	V _R =3.3V			5	μA
Clamping voltage (tp=8/20μs)	V _C	I _{PP} =1A			7	V
Clamping voltage (tp=8/20μs)	V _C	I _{PP} =5A			15	V
Peak Pulse Current (tp=8/20μs)	I _{PP}				19	A
Off state junction capacitance	C _J	0Vdc, f=1MHz		0.8		pF

UDD32C05L01 (Marking: BC)

Rating	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			5	μA
Clamping voltage (tp=8/20μs)	V _C	I _{PP} =1A			9.8	V
Clamping voltage (tp=8/20μs)	V _C	I _{PP} =5A			18.3	V
Peak Pulse Current (tp=8/20μs)	I _{PP}				17	A
Off state junction capacitance	C _J	0Vdc, f=1MHz		0.8		pF

ELECTRICAL CHARACTERISTICS (T_J=25°C)

UDD32C12L01 (Marking: DC)

Rating	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V _{RWM}				12	V
Reverse breakdown voltage	V _{BR}	I _{BR} =1mA	13.3			V
Reverse leakage current	I _R	V _R =12V			1	μA
Clamping voltage (tp=8/20μs)	V _C	I _{PP} =1A			19	V
Clamping voltage (tp=8/20μs)	V _C	I _{PP} =5A			28.6	V
Peak Pulse Current (tp=8/20μs)	I _{PP}				7	A
Off state junction capacitance	C _J	0Vdc,f=1MHz		0.8		pF

UDD32C15L01 (Marking: EC)

Rating	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V _{RWM}				15	V
Reverse breakdown voltage	V _{BR}	I _{BR} =1mA	16.7			V
Reverse leakage current	I _R	V _R =15V			1	μA
Clamping voltage (tp=8/20μs)	V _C	I _{PP} =1A			24	V
Clamping voltage (tp=8/20μs)	V _C	I _{PP} =5A			35	V
Off state junction capacitance	C _J	0Vdc,f=1MHz		0.8		pF

TYPICAL CHARACTERISTICS CURVES

Figure 1. Power Derating Curve

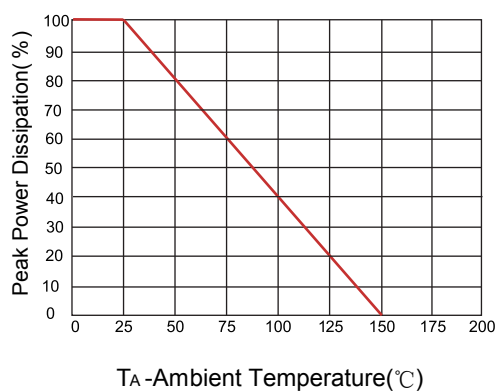


Figure 2. Pulse Waveforms

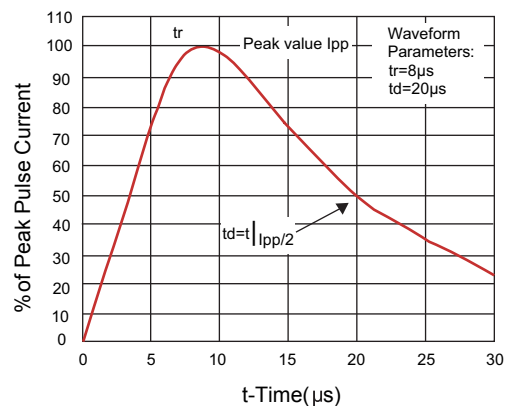


Figure 3. Non-Repetitive Peak Pulse vs Pulse Time

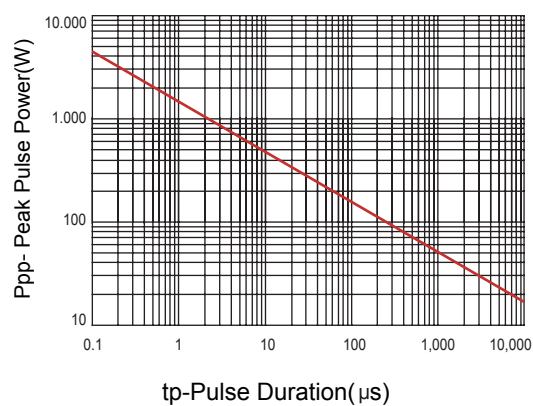
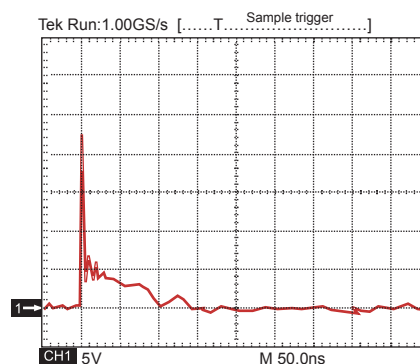
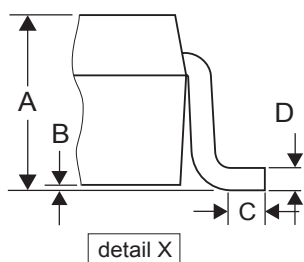
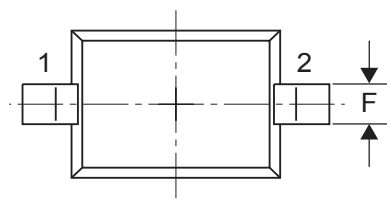
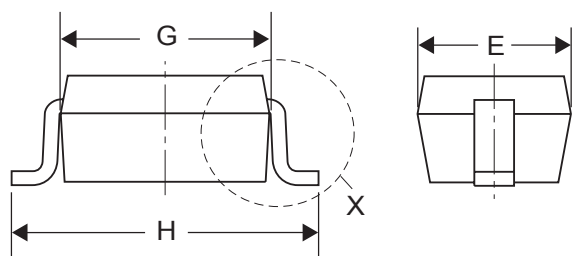


Figure 4. ESD Clamping(8kv Contact IEC61000-4-2)



PACKAGE AND SUGGESTED PAD LAYOUT DIMENSION

SOD-323(unit:mm)



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.031	0.043	0.80	1.10
B	-	0.004	-	0.10
C	0.008	-	0.20	-
D	0.004	0.008	0.11	0.20
E	0.045	0.053	1.15	1.35
F	-	0.014	-	0.35
G	0.063	0.071	1.60	1.80
H	0.094	0.102	2.40	2.60

