

DESCRIPTION

Brightking's UDT23A05L01 component is ultra low capacitance TVS arrays 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 overvoltage caused by ESD(electrostatic discharge),CDE(cable discharge events), and EFT(electrical fast transients).

The series has a typical capacitance of only 1.2pF(Max.).

This means it can be used on circuits operating in excess of 3GHz without signal attenuation.

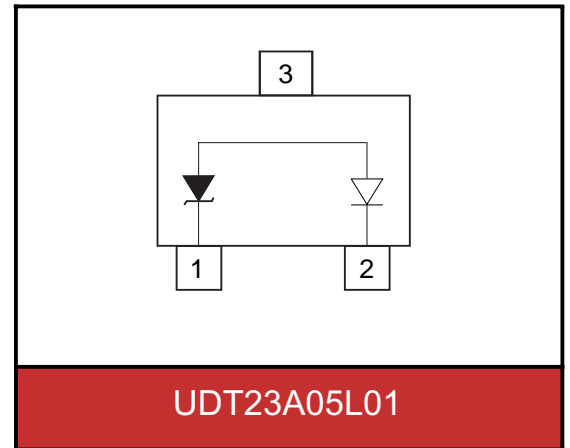


HBM : ±8kV
Air Mode : ±15kV



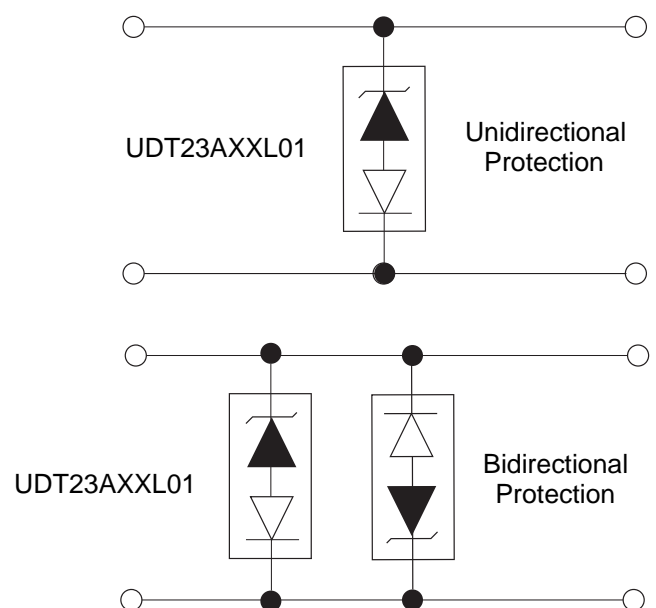
SPECIFICATION FEATURES

- IEC61000-4-2 ESD 15KV Air,8KV contact compliance
- Small SOT-23 surface mount package
- Protects one high speed data line
- Peak power dissipation of 400W under 8/20µs waveform
- Working voltage : 5V
- Low leakage current
- Ultra low capacitance and clamping voltages
- Solid-state silicon avalanche technology
- Lead Free/RoHS compliant
- Solder reflow temperature:Pure Tin-Sn,260-270°C
- Flammability rating UL 94V-0



APPLICATIONS

- HDMI interface protection
- Mobile display digital interface
- RF/Antenna circuits
- USB 2.0 & Firewire ports
- GaAs photodetector protection
- HBT power Amp protection
- Infiniband transceiver protection



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak pulse power (tp=8/20μs waveform)	Ppp	400	W
ESD voltage (HBM contact)	V _{ESD}	±8	KV
ESD voltage (AIR contact)		±15	
Storage & operating temperature range	T _{STG} ,T _J	-55~+150	°C

ELECTRICAL CHARACTERISTICS (T_J=25°C)

UDT23A05L01 (Marking:B SK)

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			5	μA
Clamping voltage (tp=8/20μs)	V _C	I _{PP} =1A			9.5	V
Clamping voltage (tp=8/20μs)	V _C	I _{PP} =5A			12	V
Off state junction capacitance	C _J	0Vdc,f=1MHZ between I/O pins and GND			1.2	pF

TYPICAL CHARACTERISTICS CURVES

Figure 1. Power Derating Curve

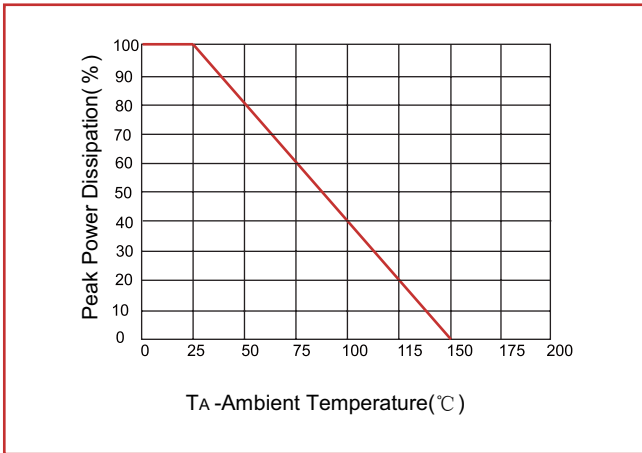


Figure 2. Pulse Waveforms

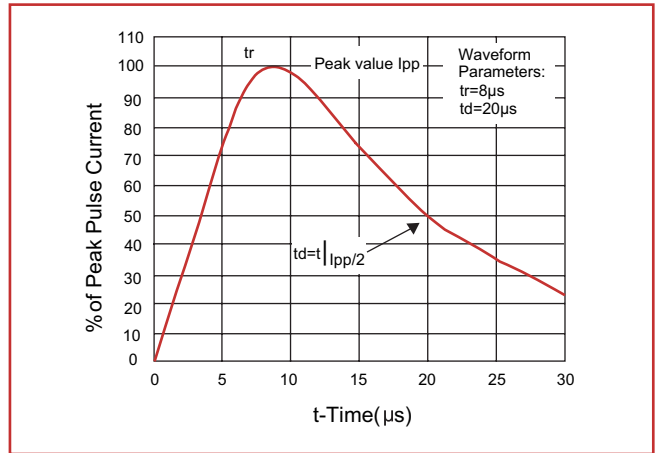


Figure 3. Non-Repetitive Peak Pulse vs Pulse Time

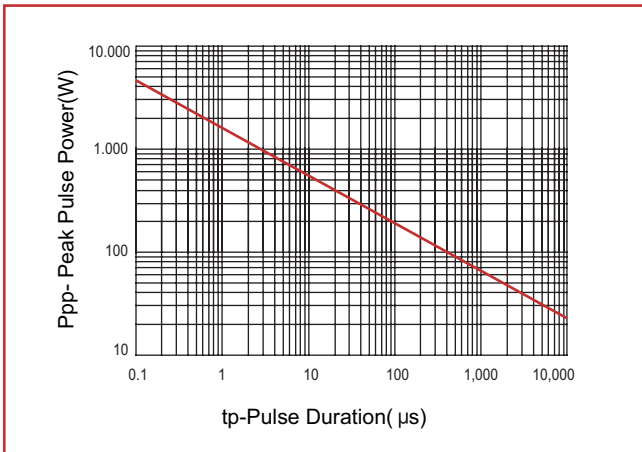


Figure 4. Capacitance vs. Reverse Voltage

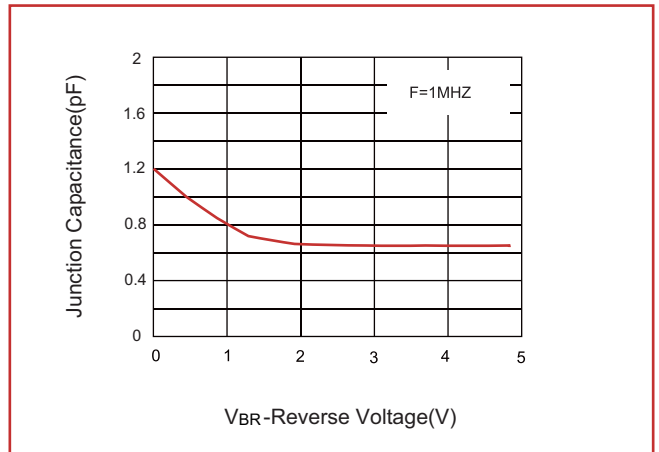
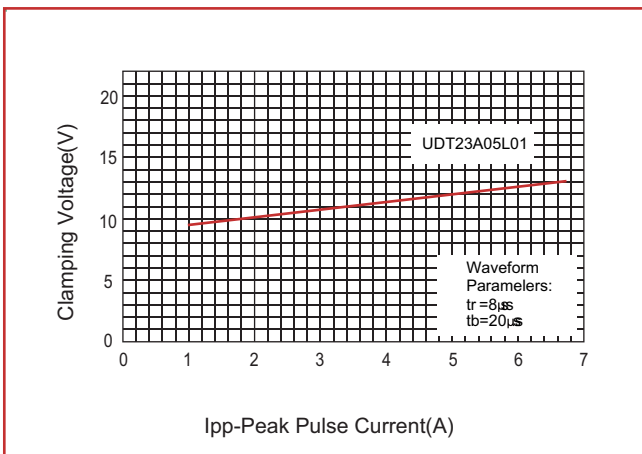
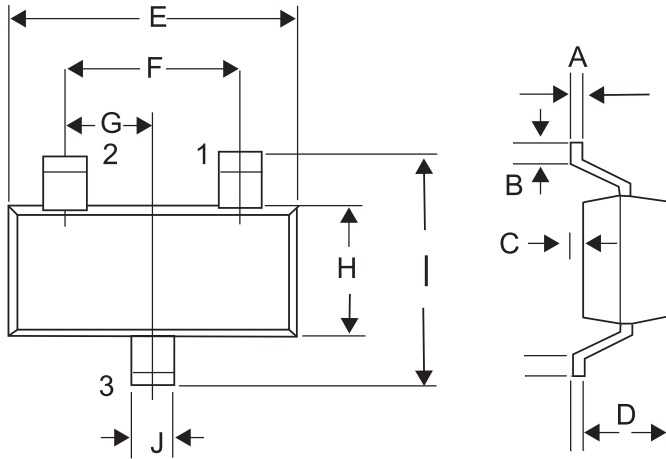


Figure 5. Clamping Voltage vs. Peak Pulse Current



PACKAGE AND SUGGESTED PAD LAYOUT DIMENSION

SOT-23(unit:mm)



DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.003	0.007	0.08	0.18
B	0.006	-	0.15	-
C	-	0.005	-	0.13
D	0.035	0.043	0.89	1.09
E	0.110	0.120	2.80	3.05
F	0.075		1.90	
G	0.037		0.95	
H	0.047	0.055	1.19	1.40
I	0.083	0.098	2.10	2.49
J	0.014	0.020	0.35	0.50

