

## DESCRIPTION

Brightking's UDT23A2.8L01 of transient voltage suppressors are designed to protect low voltage state-of-the-art CMOS semiconductors from transients caused by electrostatic(ESD) , cable discharge events(CDE) lightning and other induced voltage surges.

The device provides low stand off voltages with significant reductions in leakage currents and capacitance over silicon avalanche diode processes.

The UDT23A2.8L01 features integrated low capacitance compensation diodes that reduce the typical capacitance 2.5pF per line.

This combined with low leakage current , means signal integrity preserved in high-speed applications such as 10/100 Ethernet.

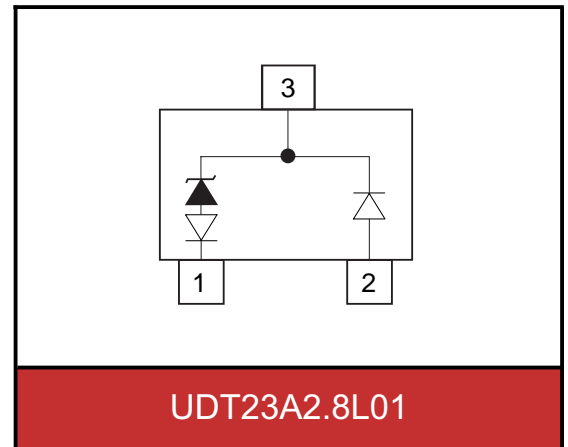


**HBM : ±8kV**  
**Air Mode : ±15kV**



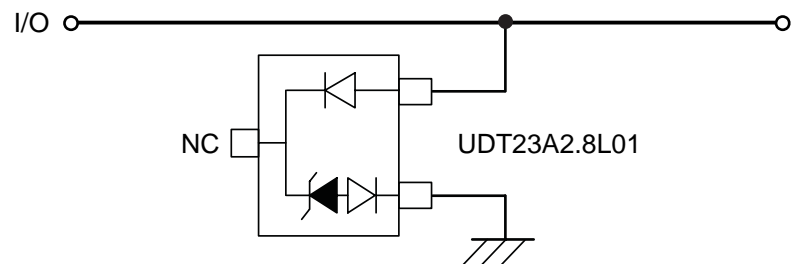
## SPECIFICATION FEATURES

- IEC61000-4-2 ESD 15KV Air,8KV contact compliance
- Small SOT-23 surface mount package
- Protects one line
- Low capacitance
- Low leakage current
- Low operating 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

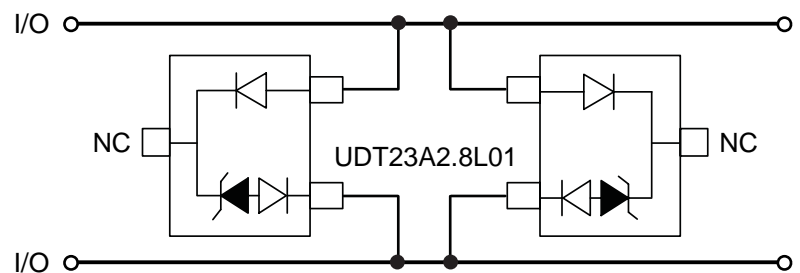


## APPLICATIONS

- 10/100 Ethernet
- WAN/LAN Equipment
- High current switching systems
- Desktops,servers,and notebook
- Instrumentation
- Analog inputs
- Base stations
- High-speed data line protection



Unidirectional Protection



Bidirectional Protection

**MAXIMUM RATINGS**

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

**ELECTRICAL CHARACTERISTICS (T<sub>J</sub>=25°C)**

UDT23A2.8L01 (Marking:B SZ4)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V <sub>RWM</sub>				2.8	V
Reverse breakdown voltage	V <sub>BR</sub>	I <sub>BR</sub> =1mA	3			V
Reverse leakage current	I <sub>R</sub>	V <sub>R</sub> =2.8V			5	μA
Clamping voltage (tp=8/20μs)	V <sub>C</sub>	I <sub>PP</sub> =2A			5.5	V
Clamping voltage (tp=8/20μs)	V <sub>C</sub>	I <sub>PP</sub> =5A			8.5	V
Off state junction capacitance	C <sub>J</sub>	0Vdc,f=1MHZ between I/O pins and GND		2.5	5	pF

**TYPICAL CHARACTERISTICS CURVES**

Figure 1. Power Derating Curve

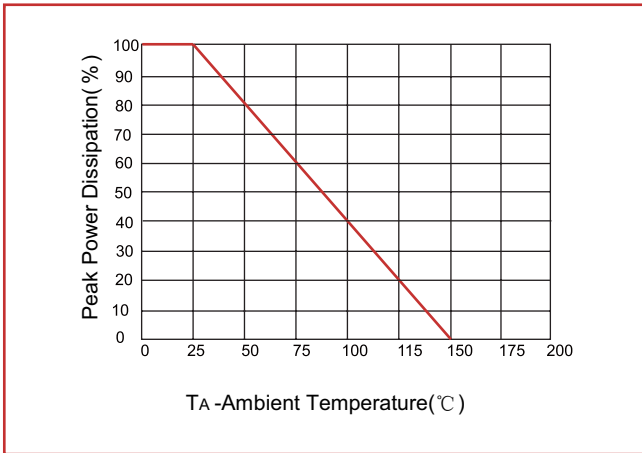


Figure 2. Pulse Waveforms

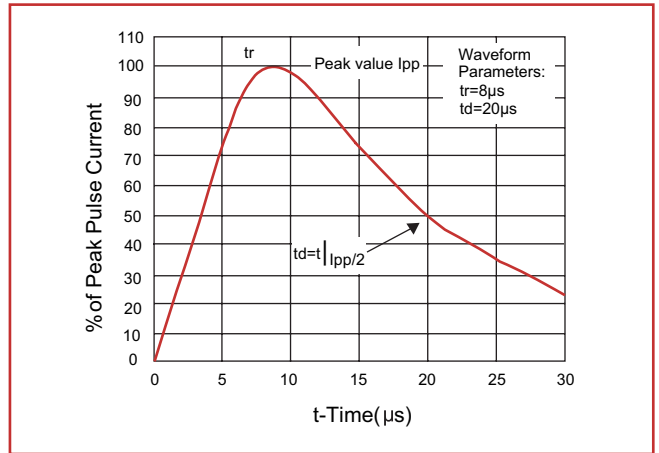


Figure 3. Non-Repetitive Peak Pulse vs Pulse Time

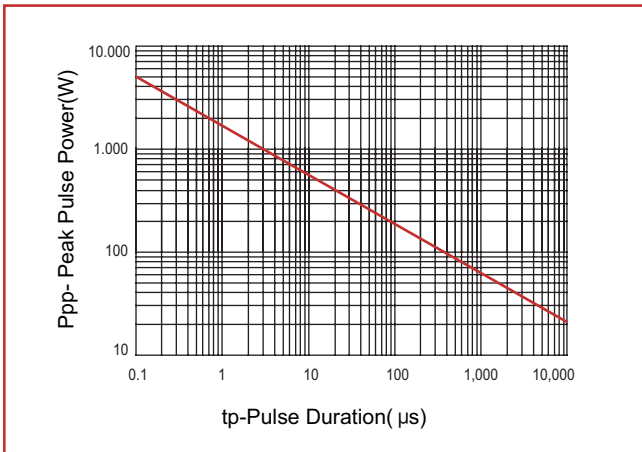


Figure 4. Capacitance vs. Reverse Voltage

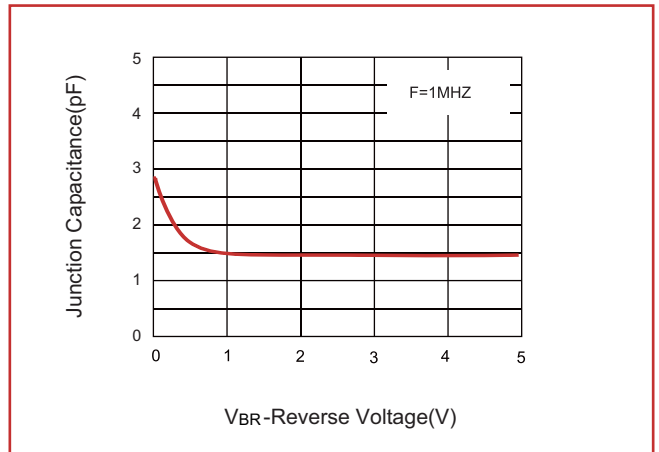
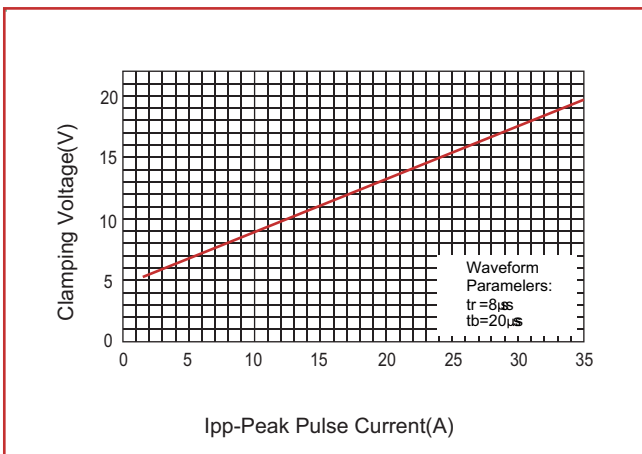
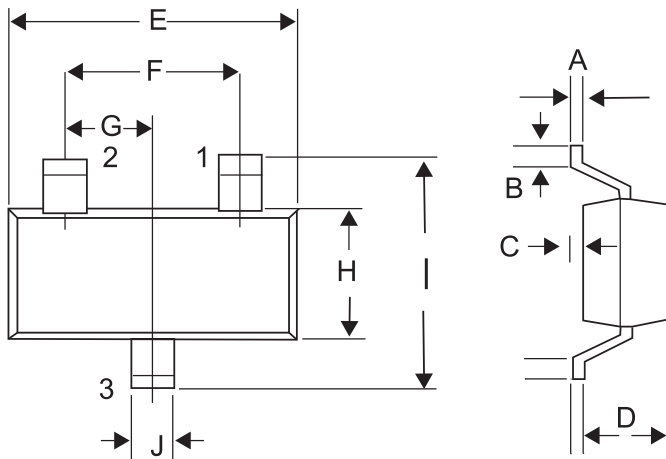


Figure 5. Clamping Voltage vs. Peak Pulse Current



**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

