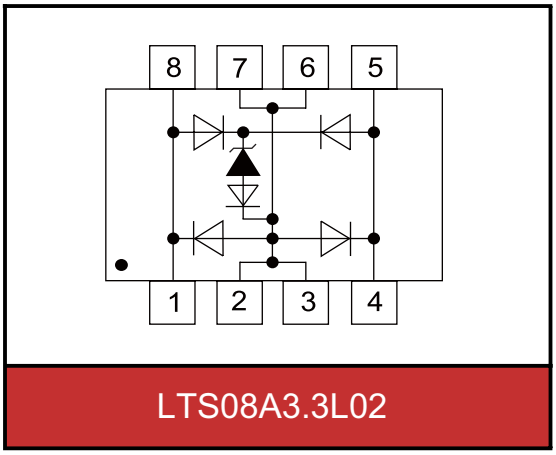
DESCRIPTION

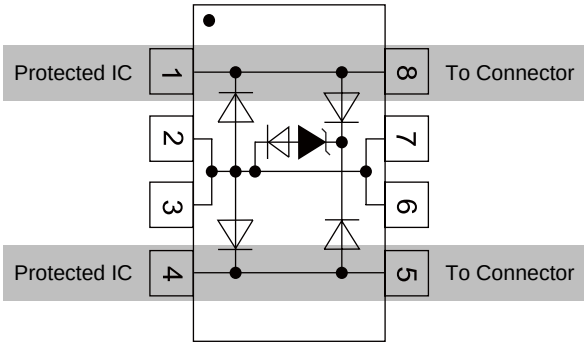
Brightking's LTS08A3.3L02 transient voltage suppressor is designed to protect components which are connected to high speed data and telecommunication lines from voltage surges caused by electrostatic discharge (ESD) , electrical fast transients (EFT) , and lightning.
TVS diodes are ideal for ues as board level protection of sensitive semiconductor components. The LTS08A3.3L02 combines a TVS diode with a rectifier bridge to provide transient protection in both common and differential mode with a single device.
The capacitance of the device is minimized (15pF) to ensure correct signal transmission on high speed lines. Brightking's LTS08A3.3L02 meets the short-haul (intra-building) transient immunity requirements of Bellcore 1089 for telecommunications applications. Such as:
Bellcore 1089 (intra-Building) 100A (2/20μs)
ITU K.20 I_{PP} =40A (5/310μs)
IEC 61000-4-2 (ESD) ±15KV (air), ±8KV (contact)
IEC 61000-4-2 (EFT) 40A (5/50ns)
IEC 61000-4-2 (Lightning) 100A (8/20μs)

HBM : ±8kV
Air Mode : ±15kV

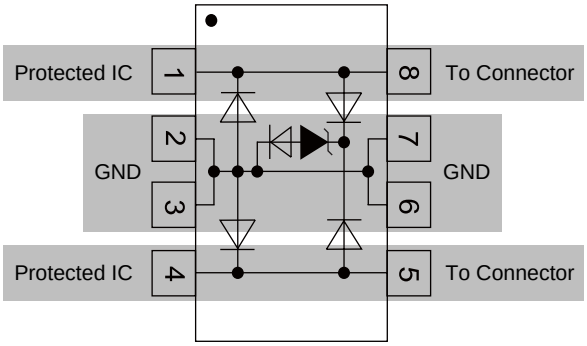
SPECIFICATION FEATURES

- IEC61000-4-2 ESD 15KV Air, 8KV contact compliance
- SOIC-08 surface mount package
- Protects two high-speed data lines
- Array of surge rated, low capacitance diodes
- Low clamping voltage
- Low leakage current
- Solid-state silicon avalanche technology
- Lead Free/RoHS compliant





Protection --- Line to Line (Differential Mode)



Protection --- Line to GND (Common Mode)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Forward current (tp=8/20μs waveform)	P_{PK}	2000	W
Peak Pulse current (tp=8/20μs waveform)	I_{PP}	100	A
ESD voltage (HBM contact)	V_{ESD}	±8	KV
ESD voltage (AIR contact)		±15	
Lead soldering temperature	T_L	260 (10 sec.)	℃
Storage & operating temperature range	T_{STG} ,T_J	-55~+150	℃

ELECTRICAL CHARACTERISTICS (T_J=25℃)

LTS08A3.3L02 (Marking : B LC33 or LC03-3.3)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				3.3	V
Punch-Through voltage	V_{PT}	I_{PT} =1mA	3.5			V
Snap-Back voltage	V_{SB}	I_{SB} =50mA	2.8			V
Reverse leakage current	I_R	V_R =3.3V			15	μA
Clamping voltage (tp=8/20μs)	V_C	I_{PP} =50A Line to Ground			11.5	V
Clamping voltage (tp=8/20μs)	V_C	I_{PP} =50A Line to Line			13.5	V
Clamping voltage (tp=8/20μs)	V_C	I_{PP} =100A Line to Ground			15	V
Clamping voltage (tp=8/20μs)	V_C	I_{PP} =100A Line to Line			18	V
Off state junction capacitance (V_R=0V,f=1MHz)	C_J	between I/O pins and GND		15	30	pF
		between I/O pins		12	30	pF

TYPICAL CHARACTERISTICS CURVES

Figure 1. Power Derating Curve

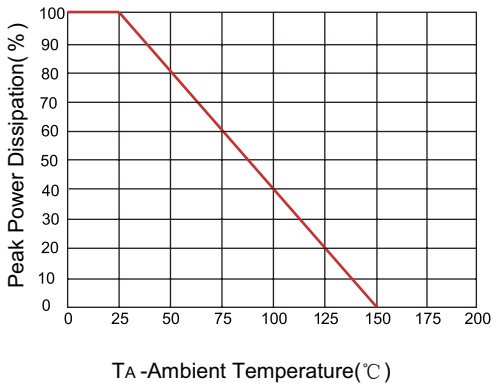


Figure 2. Pulse Waveforms

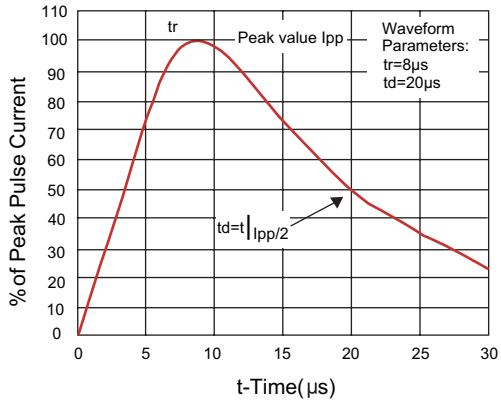


Figure 3. Non-Repetitive Peak Pulse vs Pulse Time

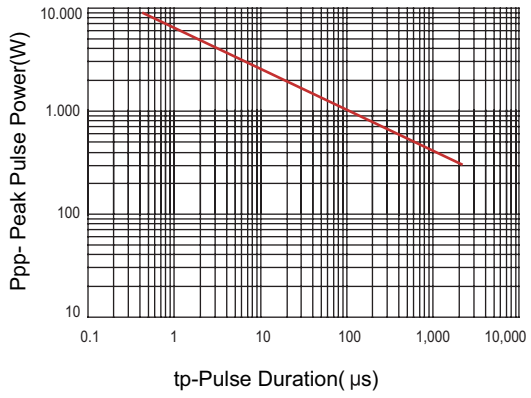


Figure 4. Capacitance vs. Reverse Voltage

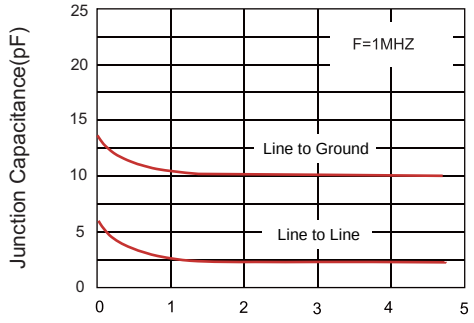
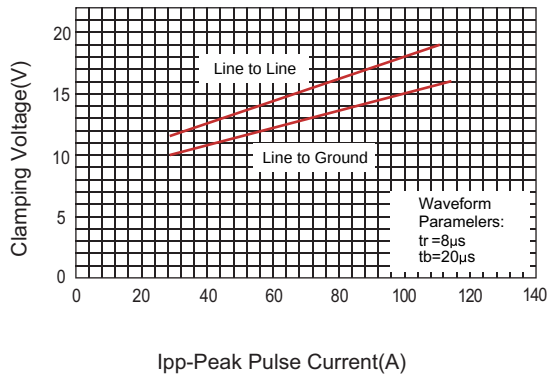
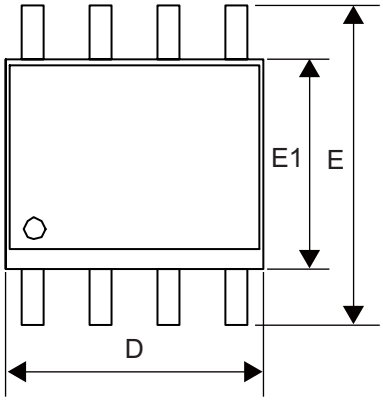


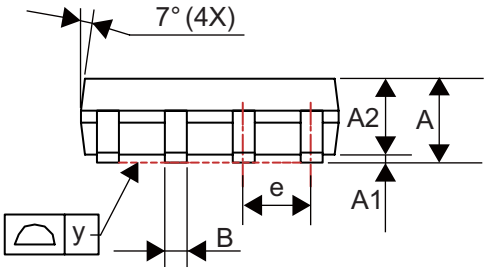
Figure 5. Clamping Voltage vs. Peak Pulse Current

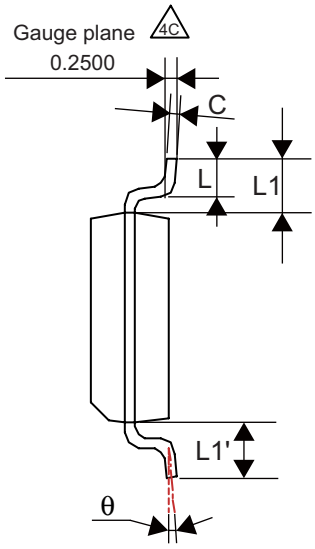


PACKAGE AND SUGGESTED PAD LAYOUT DIMENSION

SOIC-08 (unit:mm)







DIMENSIONS						
SYMBOL	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.053	0.063	0.069	1.35	1.60	1.75
A1	0.004	-	0.010	0.10	-	0.25
A2	-	0.057	-	-	1.45	-
B	0.013	-	0.020	0.33	-	0.51
C	0.007	-	0.010	0.19	-	0.25
D	0.189	-	0.197	4.80	-	5.00
E1	0.150	0.153	0.157	3.80	3.90	4.00
e	-	0.050	-	-	1.27	-
E	0.228	0.236	0.244	5.80	6.00	6.20
L	0.016	-	0.050	0.40	-	1.27
y	-	-	0.004	-	-	0.10
θ	0°	-	8°	0°	-	8°
|L1-L1'|	-	-	0.005	-	-	0.12
L1	0.041REF			1.04REF