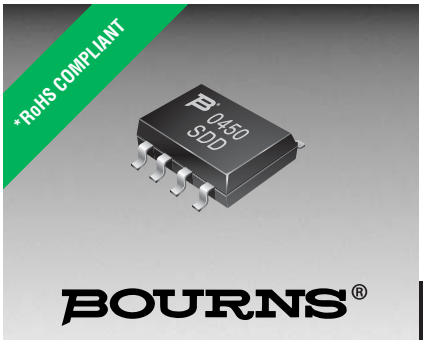


BOURNS®

Features

- Protects up to 4 I/O ports
- Surge protection
- ESD protection
- Low capacitance 6 pF

Applications

- Ethernet – 10/100/1000 Base T
- Personal digital assistant
- LAN devices
- Instrumentation

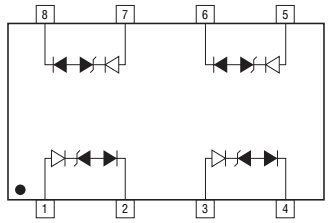
CDNBS08-SLVU2.8-4 – Low Capacitance TVS Array

General Information

The markets of portable communications, computing and video equipment are challenging the semiconductor industry to develop increasingly smaller electronic components.

Bourns offers Transient Voltage Suppressor Array combination diodes for surge and ESD protection applications in an 8 Lead Narrow Body SOIC package size format. Bourns Chip Diodes conform to JEDEC standards, are easy to handle on standard pick and place equipment and their flat configuration minimizes roll away.

The Bourns device® will meet IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge) requirements.



Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter		Symbol	Min.	Nom.	Max.	Unit
Peak Pulse Current (t_p = 8/20 µs)		I_{PP}			30	A
Peak Pulse Power (t_p = 8/20 µs)[1]		P_{PP}			600	W
Working Voltage		V_{WM}			2.8	V
Breakdown Voltage @ 1 mA		V_{BR}	3.0			V
Leakage Current @ V_{WM}		I_D		0.1	1.0	µA
Capacitance @ 0 V, 1 MHz		C		6		pF
Snapback Voltage @ 50 mA			2.8			V
ESD Protection per IEC 61000-4-2 Contact Discharge Air Discharge		 ESD ESD	 ±8 ±15		 ±30 ±30	 kV kV
EFT Protection per IEC61000-4-4 @ 5/50 nS		EFT			60	A
Surge Protection per IEC 61000-4-5 Clamping Voltage @ 8/20 µS	@ I_P = 5 A[2]	V_C			10	V
	@ I_P = 24 A[2]	V_C		13	15	V
	@ I_{PP} = 30 A[2]	V_C		15	21	V

Notes:
1. See Peak Pulse Power vs. Pulse Time.
2. Each differential line pair.

Thermal Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

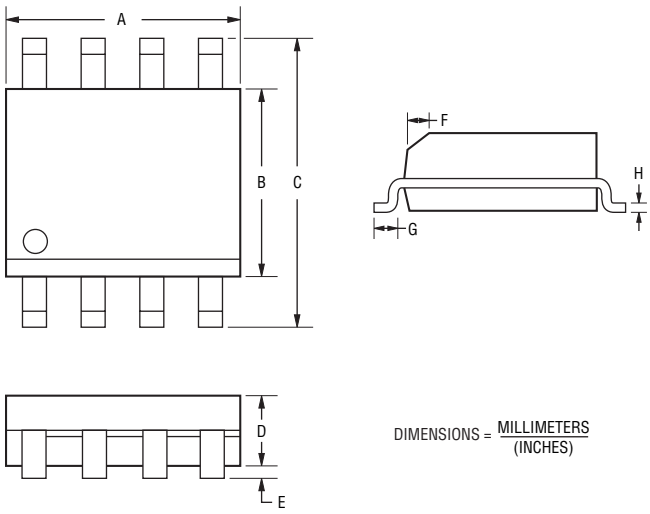
Parameter	Symbol	Min.	Nom.	Max.	Unit
Operating Temperature	T_J	-55	+25	+125	°C
Storage Temperature	T_{STG}	-55	+25	+150	°C

*RoHS Directive 2002/95/EC Jan 27 2003 including Annex.
Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

Mechanical Characteristics

This is a molded JEDEC Narrow Body SO-8 package with lead free 100 % Sn plating on the lead frame. It weighs approximately 15 mg and has a flammability rating of UL 94V-0.

Product Dimensions



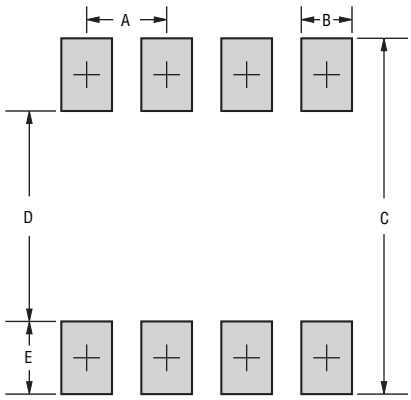
DIMENSIONS = MILLIMETERS / (INCHES)

Dimensions	
A	4.80 - 5.00 (0.189 - 0.196)
B	3.80 - 4.00 (0.150 - 0.157)
C	5.80 - 6.20 (0.229 - 0.244)
D	1.35 - 1.75 (0.054 - 0.068)
E	0.10 - 0.25 (0.004 - 0.008)
F	0.25 - 0.50 (0.010 - 0.019)
G	0.40 - 1.250 (0.016 - 0.049)
H	0.18 - 0.25 (0.007 - 0.009)

Typical Part Marking

CDNBS08-SLVU2.8-4 ..... **SL4**

Recommended Footprint



Dimensions	
A	1.143 - 1.397 (0.045 - 0.055)
B	0.635 - 0.889 (0.025 - 0.035)
C	6.223 (0.245) Min.
D	3.937 - 4.191 (0.155 - 0.165)
E	1.016 - 1.27 (0.040 - 0.050)

How To Order

CD NBS08 - SLVU 2.8 - 4

Common Code
CD = Chip Diode

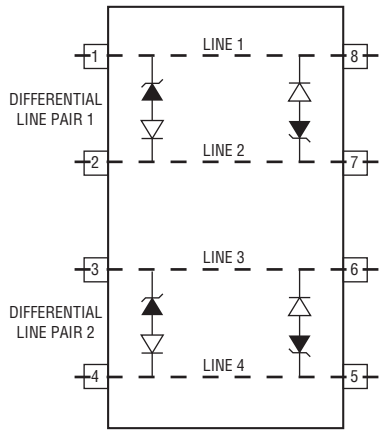
Package
NBS08 = Narrow Body SOIC8 Package

Model
SLVU = Low Capacitance TVS Array

Working Peak Reverse Voltage
2.8 = 2.8 V_{RWM} (Volts)

Number of Diodes

Application Diagram

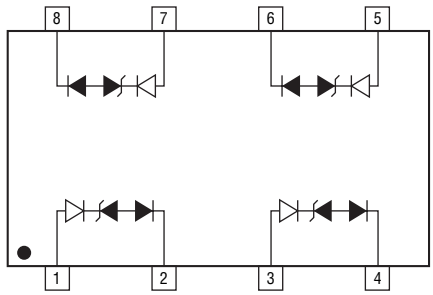


CONFIGURATION FOR PROTECTING TWO DIFFERENTIAL LINE PAIRS

Device Pinout

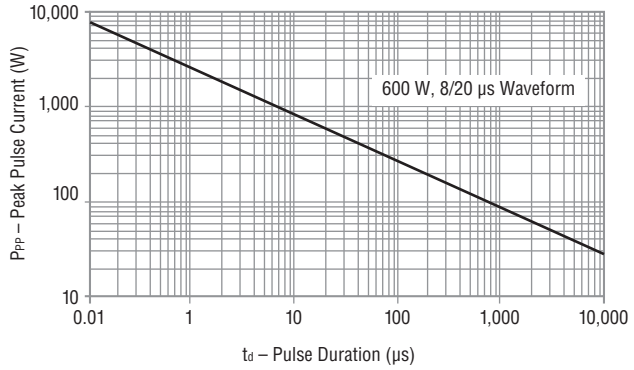
Pin	Unidirectional Common Mode	Bidirectional Common Mode	Bidirectional Differential Mode
1	Line 1	Line 1	Line Pair 1
2	GND	GND	Line Pair 1
3	Line 3	GND	Line Pair 2
4	GND	Line 2	Line Pair 2
5	Line 4	Line 2	Line Pair 2
6	GND	GND	Line Pair 2
7	Line 2	GND	Line Pair 1
8	GND	Line 1	Line Pair 1

Block Diagram

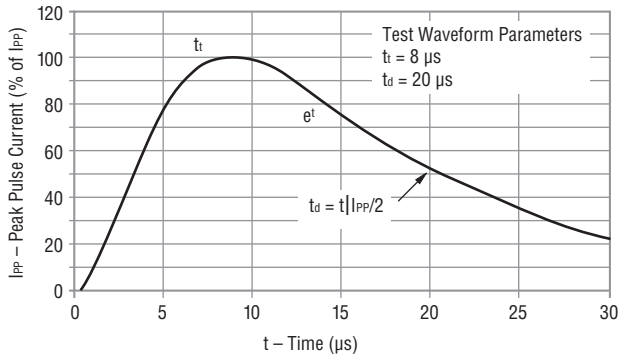


Performance Graphs

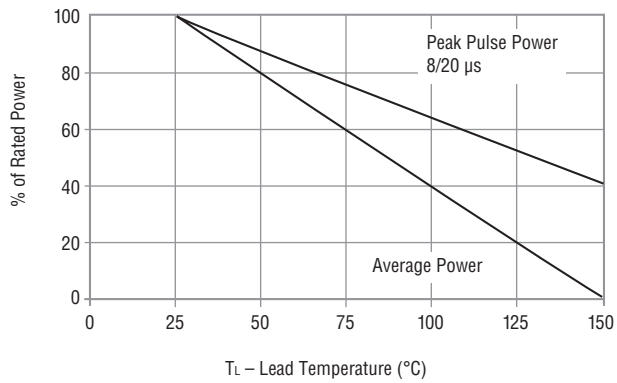
Peak Pulse Power vs Pulse Time



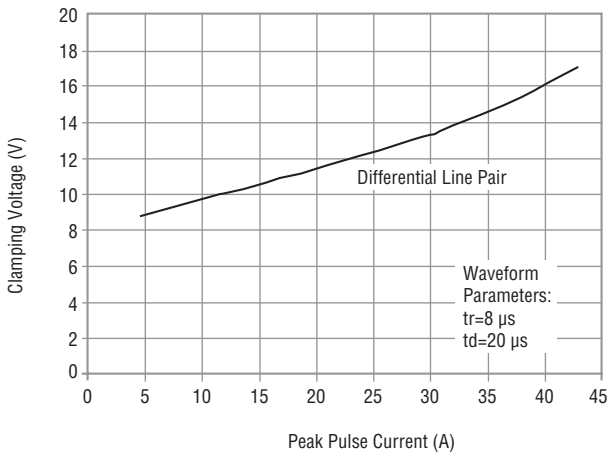
Pulse Wave Form



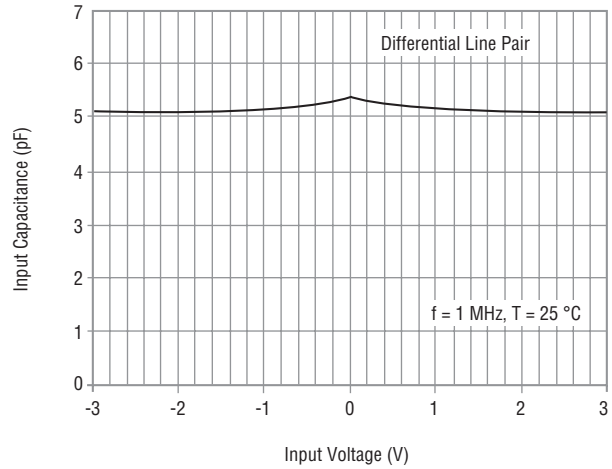
Power Derating Curve



Clamping Voltage vs Peak Pulse Current

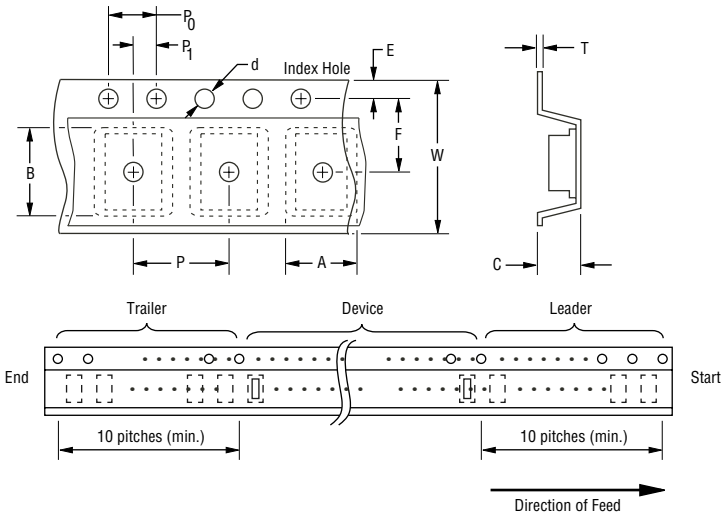


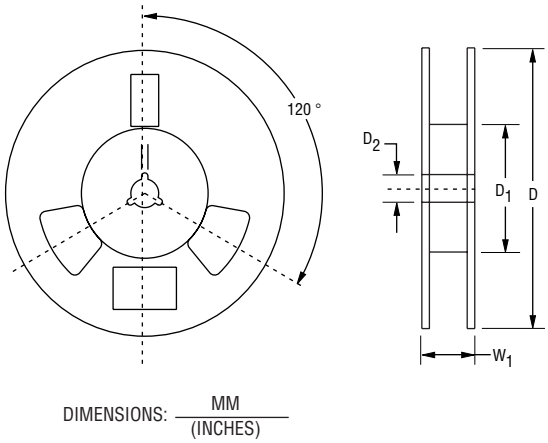
Variation of C_{in} vs V_{in}



Packaging Specifications

The product will be dispensed in Tape and Reel format (see diagram below).





Devices are packed in accordance with EIA standard RS-481-A.

Item	Symbol	NSOIC 8L
Carrier Width	A	6.7 ± 0.10 (0.264 ± 0.004)
Carrier Length	B	5.5 ± 0.10 0.217 ± 0.004
Carrier Depth	C	2.10 ± 0.10 0.083 ± 0.004
Sprocket Hole	d	1.55 ± 0.05 (0.061 ± 0.002)
Reel Outside Diameter	D	330 (12.992)
Reel Inner Diameter	D_1	80.0 (3.1500) MIN.
Feed Hole Diameter	D_2	13.0 ± 0.20 (0.512 ± 0.008)
Sprocket Hole Position	E	1.75 ± 0.10 (0.069 ± 0.004)
Punch Hole Position	F	3.50 ± 0.05 (0.138 ± 0.002)
Punch Hole Pitch	P	8.00 ± 0.10 (0.315 ± 0.004)
Sprocket Hole Pitch	P_0	4.00 ± 0.10 (0.157 ± 0.004)
Embossment Center	P_1	2.00 ± 0.05 (0.079 ± 0.002)
Overall Tape Thickness	T	0.20 ± 0.10 (0.008 ± 0.004)
Tape Width	W	12.00 ± 0.20 (0.472 ± 0.008)
Reel Width	W_1	18.4 (0.724) MAX.
Quantity per Reel	-	2500

REV. 09/09

Specifications are subject to change without notice.
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