



## Features

- RoHS compliant\*
- ESD protection >40k V
- Protects 6 lines
- Low capacitance - 3 pF

## Applications

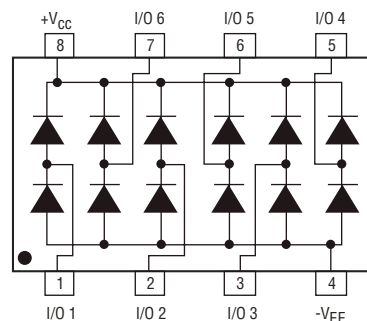
- Ethernet ports
- Portable electronics
- Wireless LANs
- xDSL equipment

# CDNBS08-SR721 – Steering Diode Arrays

## General Information

The CDNBS08-SR721 device provides ESD, EFT and Surge protection for external ports meeting IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge) requirements.

The Steering Diode array provides up to 6 lines of protection using the “rail to rail” clamping technique with low leakage current and low capacitance per line. The device is available in a JEDEC SO-8 package and is intended to be mounted directly onto an FR4 printed circuit board.



## Absolute Maximum Ratings (@ T<sub>A</sub> = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Value	Unit
Power Dissipation - Continuous	P <sub>PD</sub>	145	mW
Storage Temperature	T <sub>STG</sub>	-55 to +150	°C
Operating Temperature	T <sub>OPR</sub>	-55 to +150	°C

## Electrical Characteristics (@ T<sub>A</sub> = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Value	Unit
Typical Forward Voltage @ 8/20 μs 1 A	V <sub>F</sub>	2	V
Repetitive Peak Reverse Voltage <sup>(Note 1)</sup>	V <sub>RRM</sub>	50	V
Maximum Peak Pulse Current @ 8/20 μs	I <sub>FM</sub>	12	A
Maximum Leakage Current @ 20 V	I <sub>R</sub>	20	nA
Maximum Quiescent Supply Current @ 20 V	I <sub>Q</sub>	200	nA
Typical Junction Capacitance @ 0 V 1 MHz <sup>(Note 2)</sup>	C <sub>J</sub>	3	pF
ESD Protection: Per IEC 61000-4-2 Standard			
Minimum Contact Discharge		±8	kV
Minimum Air Discharge		±15	kV
EFT Protection: Per IEC61000-4-4 @ 5/50 ns		40	A
Surge Protection per IEC 61000-4-5 @ 8/20 μs			
Level 1 (Line-Gnd)		12	A
Level 2 (Line-Line)		12	A

Notes:

1. V<sub>RRM</sub> is +V<sub>CC</sub> for Pin 8 and -V<sub>EE</sub> for Pin 4.
2. Measure capacitance C<sub>J</sub> between any I/O pins to ground and divide by 2.

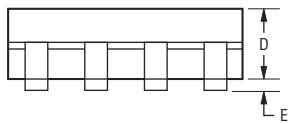
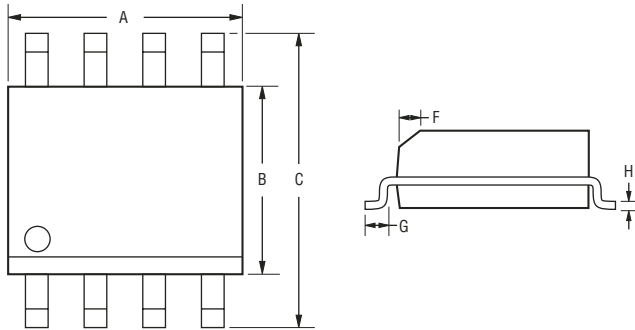
\*RoHS Directive 2002/95/EC Jan 27 2003 including Annex  
 Specifications are subject to change without notice.  
 Customers should verify actual device performance in their specific applications.

# CDNBS08-SR721 – Steering Diode Arrays



## Product Dimensions

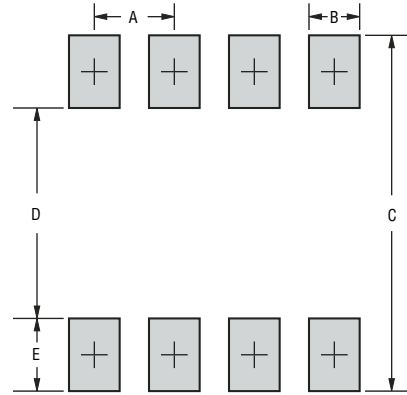
This is a molded JEDEC SO-8 package with lead free 100 % Sn plating on the terminations. It weighs approximately 70 mg and has a flammability rating of UL 94V-0.



DIMENSIONS =  $\frac{\text{MILLIMETERS}}{\text{(INCHES)}}$

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

## Recommended Footprint



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

## How To Order

**CD NBS08 - SR 721**

Common Code \_\_\_\_\_  
 CD = Chip Diode  
 Package \_\_\_\_\_  
 • NBS08 = Narrow Body SOIC8 Package  
 Model \_\_\_\_\_  
 SR = Steering Diode  
 Code \_\_\_\_\_  
 721 = Special Code

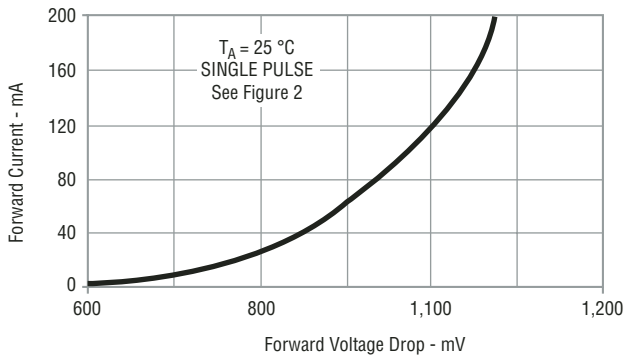
## Typical Part Marking

CDNBS08-SR721.....721

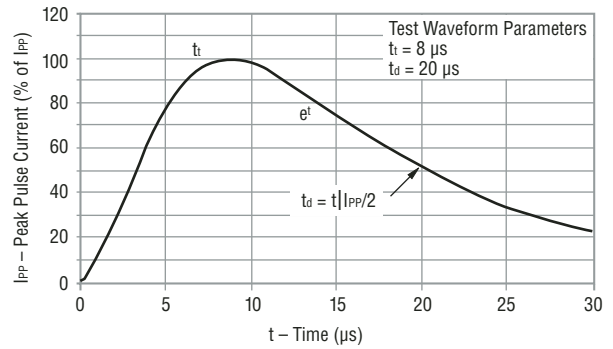
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Performance Graphs

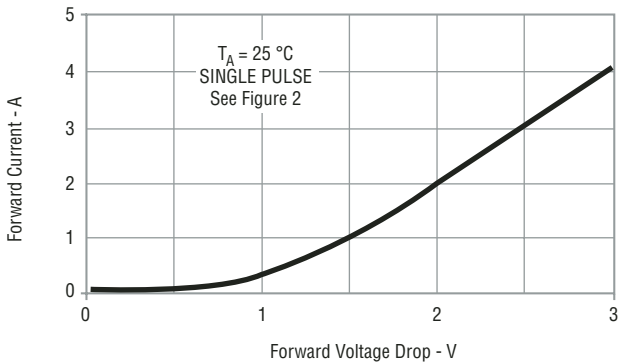
Peak Pulse Power vs Pulse Time



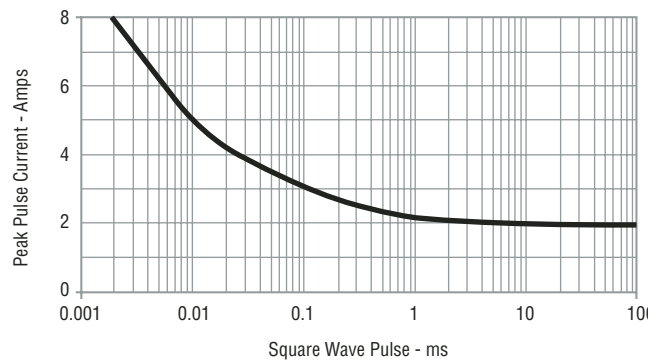
Pulse Waveform



CDNBS08-T05L ESD Pulse Response



Power Derating Curve



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