

Features

- Lead free device (RoHS compliant*)
- ESD protection >40 kV
- Protects 6 lines
- Low capacitance ~5 pF

Applications

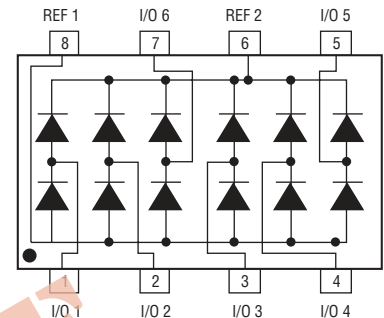
- Ethernet ports
- Portable electronics
- Wireless LANs
- USB interface

CDNBS08-SR112 - Steering Diode Array

General Information

The CDNBS08-SR112 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_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Value	Unit
Power Dissipation - Continuous	P _{PD}	145	mW
Storage Temperature	T _{STG}	-55 to 150	°C
Operating Temperature	T _{OPR}	-55 to 150	°C

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

Parameter	Symbol	Value	Unit	
Typical Forward Voltage @ 50 mA	V _F	1.3	V	
Repetitive Peak Reverse Voltage (NOTE 1)	V _{RRM}	20	V	
Maximum Peak Pulse Current @ 8/20 μS	I _{FM}	12	A	
Maximum Leakage Current @ 18 V	I _R	20	nA	
Maximum Quiescent Supply Current @ 20 V	V _M	200	nA	
Typical Junction Capacitance @ 0 V 1 MHz (NOTE 2)	I _Q	5	pF	
ESD Protection per IEC 61000-4-2	C _J	±8	kV	
		±15	kV	
EFT Protection per IEC 61000-4-4 @ 5/50 ns		40	A	
Surge Protection per IEC 61000-4-5 @ 8/20 μs		L1 (Line – Ground)	12	A
		L2 (Line – Line)	12	A

Notes:

1. V_{RRM} is +V_{CC} for Pin 8 and -V_{EE} for Pin 4.
2. Measure capacitance C_J between any I/O pins to ground and divide by 2.



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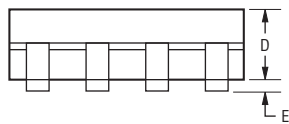
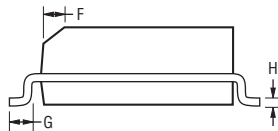
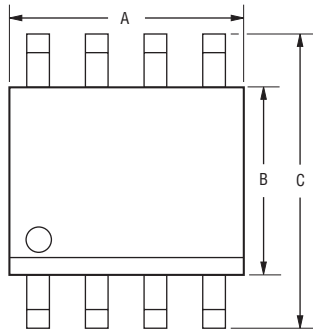
*RoHS Directive 2002/95/EC Jan 27 2003 including Annex.
 Specifications are subject to change without notice.
 Customers should verify actual device performance in their specific applications

CDNBS08-SR112 - Steering Diode Array



Product Dimensions

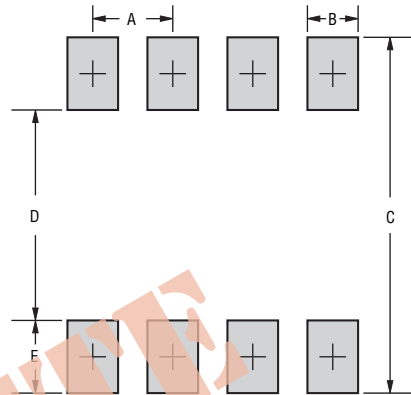
This is a molded JEDEC SO-8 package with lead free 100 % Sn plating on the terminations. It weighs approximately 70 mg and has a flammability rating of UL 94V-0.



DIMENSIONS = $\frac{\text{MILLIMETERS}}{25.4}$ (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 112

Common Code _____

Chip Diode _____

Package _____

- NBS08 = SO-8 Package

Model _____

SR = Steering Diode

Code _____

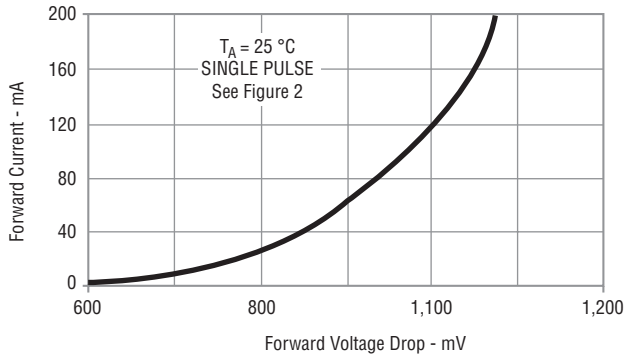
112 = Special Code

Typical Part Marking

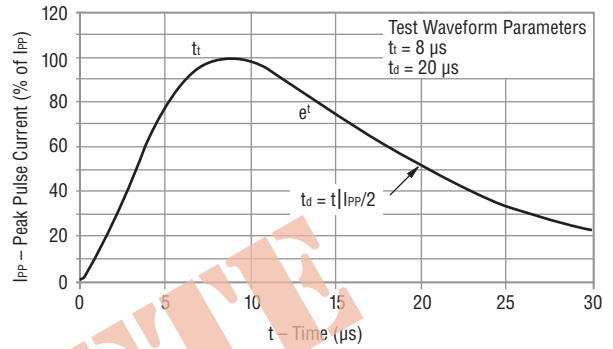
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Performance Graphs

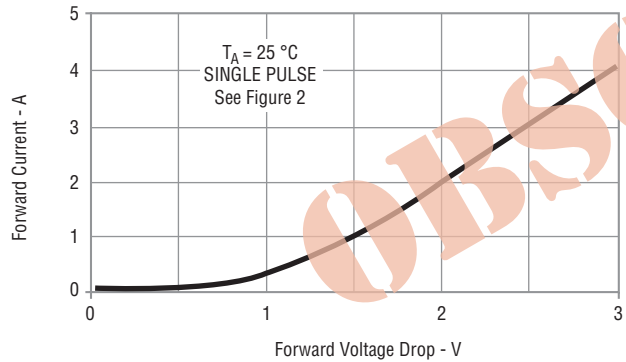
Typical Low Current Forward Voltage Drop



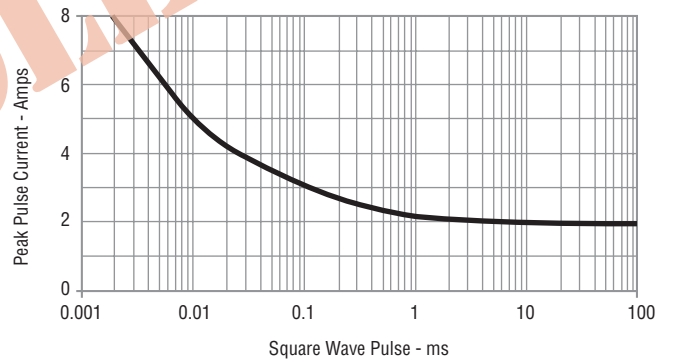
Pulse Waveform



Typical High Current Forward Voltage Drop



Non-Repetitive Peak Pulse Current

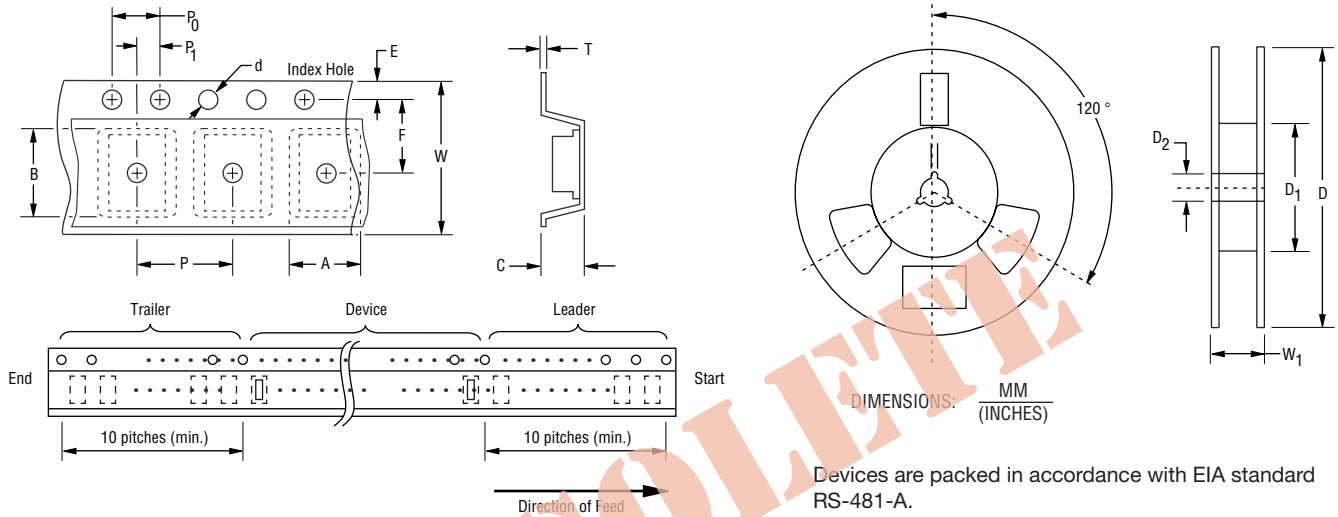


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Packaging Specifications

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



Item	Symbol	NSIC 8L
Carrier Width	A	$\frac{6.7 \pm 0.10}{(0.264 \pm 0.004)}$
Carrier Length	B	$\frac{5.5 \pm 0.10}{(0.217 \pm 0.004)}$
Carrier Depth	C	$\frac{2.10 \pm 0.10}{(0.083 \pm 0.004)}$
Sprocket Hole	d	$\frac{1.55 \pm 0.05}{(0.061 \pm 0.002)}$
Reel Outside Diameter	D	$\frac{330}{(12.992)}$
Reel Inner Diameter	D ₁	$\frac{80.0}{(3.1500)}$ MIN.
Feed Hole Diameter	D ₂	$\frac{13.0 \pm 0.20}{(0.512 \pm 0.008)}$
Sprocket Hole Position	E	$\frac{1.75 \pm 0.10}{(0.069 \pm 0.004)}$
Punch Hole Position	F	$\frac{3.50 \pm 0.05}{(0.138 \pm 0.002)}$
Punch Hole Pitch	P	$\frac{8.00 \pm 0.10}{(0.315 \pm 0.004)}$
Sprocket Hole Pitch	P ₀	$\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$
Embossment Center	P ₁	$\frac{2.00 \pm 0.05}{(0.079 \pm 0.002)}$
Overall Tape Thickness	T	$\frac{0.20 \pm 0.10}{(0.008 \pm 0.004)}$
Tape Width	W	$\frac{12.00 \pm 0.20}{(0.472 \pm 0.008)}$
Reel Width	W ₁	$\frac{18.4}{(0.724)}$ MAX.
Quantity per Reel	--	2500

REV. 09/09

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