



## Features

- Lead free as standard
- RoHS compliant\*
- Halogen free\*\*
- ESD protection
- Protects 2 lines
- Low leakage current: <math><1 \mu A</math>
- Low capacitance: 3 pF

## Applications

- Cell phones
- Desktops
- Laptops & notebooks
- Portable electronics

# CD143A-SR70 – Steering Diode Array Series

### General Information

The CD143A-SR70 device provides ESD protection for the external ports of portable electronic devices such as cell phones, handheld electronics and personal computers. The device also provides EFT and surge protection.

The ESD protection provided by the component enables a data port to withstand a minimum  $\pm 8$  KV Contact /  $\pm 15$  KV Air Discharge per the ESD test method specified in IEC 61000-4-2. The device measures 2.80 mm x 1.20 mm and is available in a SOT-143 package intended to be mounted directly onto an FR4 printed circuit board.

### Additional Information

Click these links for more information:



### Electrical Characteristics (@ $T_A = 25^\circ C$ Unless Otherwise Noted)

Parameter	Symbol	Min.	Nom.	Max.	Unit
Capacitance @ 0 V 1 MHz*	$C_j$			10	pF
Repetitive Peak Reverse Voltage				70	V
Reverse Breakdown Voltage I @ 50 $\mu A$	$V_{BR}$	85			V
Forward Clamping Voltage 8/20 $\mu s$ $I_{PP}$ @ 1 A	$V_{FC}$			1.5	V
Forward Clamping Voltage 8/20 $\mu s$ $I_{PP}$ @ 24 A	$V_{FC}$			7	V
Reverse Leakage Current @ $V_{RRM}$	$I_R$			1	$\mu A$
ESD Protection: IEC 61000-4-2 Contact Discharge Air Discharge		$\pm 8$ $\pm 15$			kV kV
EFT Protection: IEC 61000-4-4 @ 5/50 ns		40			A
Surge Protection: IEC 61000-4-5 @ 8/20 $\mu s$ Level 2 (Line-Gnd) & Level 3 (Line-Line)		24			A

\*Measured between I/O pins and ground. 3 pF typical between I/O pins.

### Thermal Characteristics (@ $T_A = 25^\circ C$ Unless Otherwise Noted)

Parameter	Symbol	Min.	Nom.	Max.	Unit
Forward Peak Pulse Current ( $t_p = 8/20 \mu s$ )	$I_{PP}$		24		A
Operating Temperature Range	$T_J$	-55	25	+150	$^\circ C$
Storage Temperature Range	$T_{STG}$	-55	25	+150	$^\circ C$

### How to Order

#### CD 143A - SR 70

Common Code \_\_\_\_\_  
 Chip Diode \_\_\_\_\_  
 Package \_\_\_\_\_  
 143A = SOT-143 \_\_\_\_\_  
 Model \_\_\_\_\_  
 SR = Steering Diode Array \_\_\_\_\_  
 Working Peak Voltage \_\_\_\_\_  
 70 = 70  $V_{WM}$  (Volts) \_\_\_\_\_



**WARNING Cancer and Reproductive Harm**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

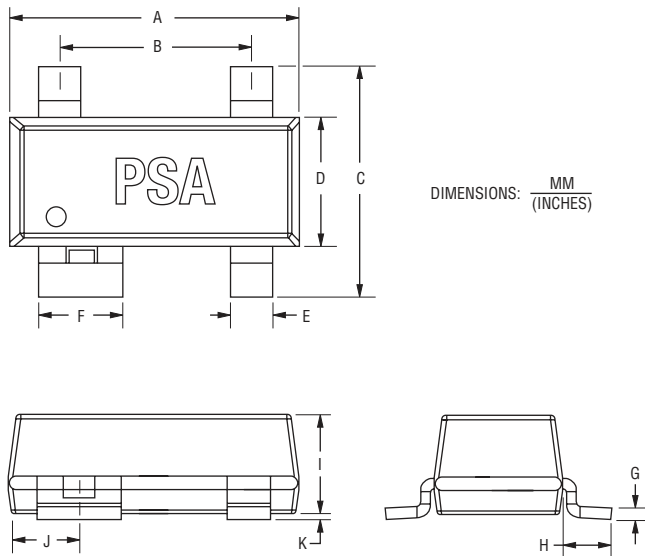
\* RoHS Directive 2015/863, Mar 31, 2015 and Annex.  
 \*\* Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.  
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 Users should verify actual device performance in their specific applications.  
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# CD143A-SR70 – Steering Diode Array Series



## Product Dimensions

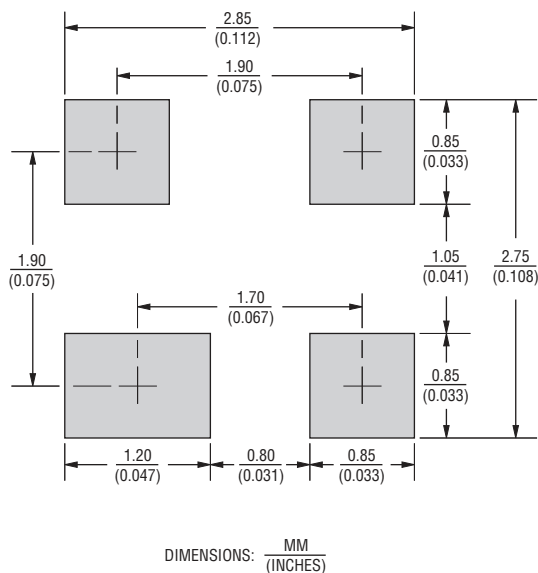
This is a molded JEDEC SOT-143 device. It weighs approximately 39.96 mg and has a flammability rating of UL 94V-0. The dimensions for the packaged device are shown below.



Dimensions	
A	$\frac{2.80 - 3.04}{(0.110 - 0.12)}$
B	$\frac{1.78 - 2.03}{(0.070 - 0.080)}$
C	$\frac{2.11 - 2.48}{(0.083 - 0.098)}$
D	$\frac{1.20 - 1.39}{(0.047 - 0.055)}$
E	$\frac{0.39 - 0.50}{(0.015 - 0.020)}$
F	$\frac{0.79 - 0.93}{(0.031 - 0.037)}$
G	$\frac{0.08 - 0.15}{(0.003 - 0.006)}$
H	$\frac{0.46 - 0.60}{(0.018 - 0.024)}$
I	$\frac{0.84 - 1.14}{(0.033 - 0.045)}$
J	$\frac{0.72 - 0.83}{(0.028 - 0.033)}$
K	$\frac{0.013 - 0.10}{(0.0005 - 0.004)}$

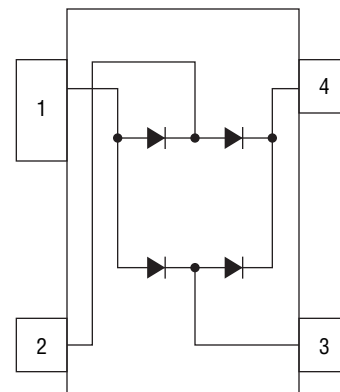
## Recommended Pad Layout

This is the footprint recommended for this SOT-143 device.



## Block Diagram

The device block diagram below includes the pin names and basic electrical connections associated with each channel.



## Device Pinout

Pin	Function	Pin	Function
1	V <sub>N</sub>	3	I/O 2
2	I/O 1	4	V <sub>P</sub>

## Typical Part Marking

CD143A-SR70.....PSA

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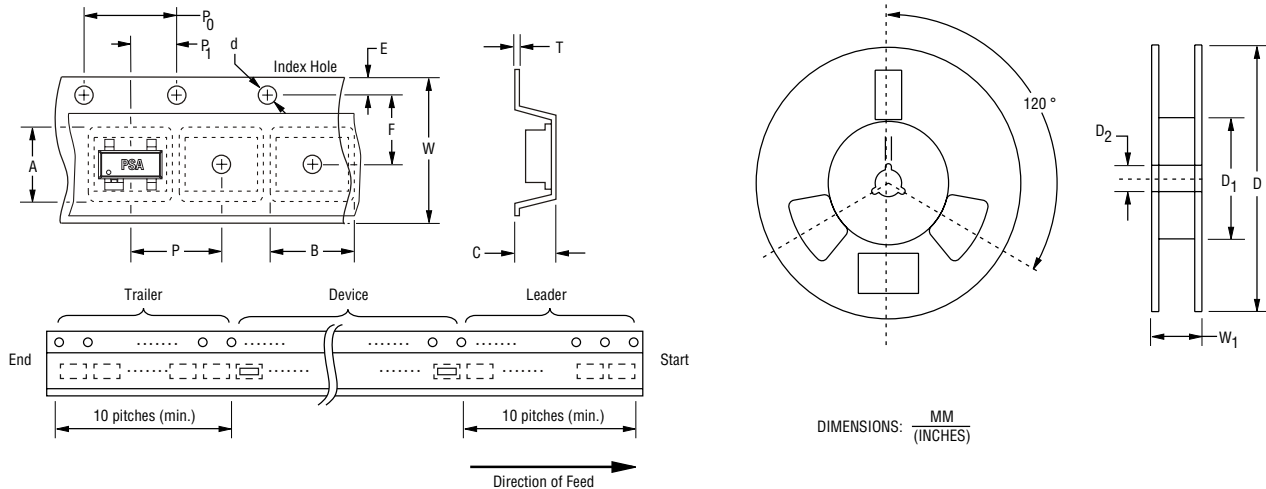
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## Packaging Information

The surface mount product is packaged in an 8 mm x 4 mm tape and reel format per EIA-481 standard.



Item	Symbol	SOT-143
Carrier Width	A	$\frac{2.75 \pm 0.10}{(0.108 \pm 0.004)}$
Carrier Length	B	$\frac{3.30 \pm 0.10}{(0.130 \pm 0.004)}$
Carrier Depth	C	$\frac{1.25 \pm 0.10}{(0.049 \pm 0.004)}$
Sprocket Hole	d	$\frac{1.55 \pm 0.05}{(0.061 \pm 0.002)}$
Reel Outside Diameter	D	$\frac{178}{(7.008)}$
Reel Inner Diameter	D <sub>1</sub>	$\frac{50.0}{(1.969)}$ Min.
Feed Hole Diameter	D <sub>2</sub>	$\frac{13.0 \pm 0.20}{(0.512 \pm 0.008)}$
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	$\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$
Sprocket Hole Pitch	P <sub>0</sub>	$\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$
Embossment Center	P <sub>1</sub>	$\frac{2.00 \pm 0.05}{(0.079 \pm 0.002)}$
Overall Tape Thickness	T	$\frac{0.20 \pm 0.10}{(0.008 \pm 0.004)}$
Tape Width	W	$\frac{8.00 \pm 0.20}{(0.315 \pm 0.008)}$
Reel Width	W <sub>1</sub>	$\frac{14.4}{(0.567)}$ Max.
Quantity per Reel	--	3,000

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