

## Features

- Lead free device (RoHS compliant\*)
- Low profile
- Low power loss, high efficiency
- UL 94V-0 classification

## Applications

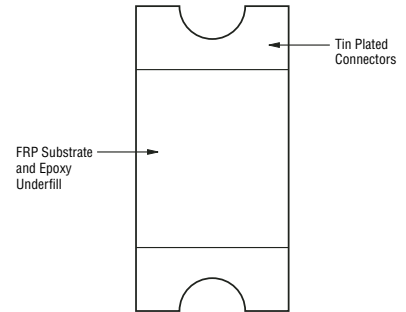
- High frequency switching power supplies
- Inverters
- Free wheeling
- Polarity protection

# CD1408-R1200~R11000 – Surface Mount Rectifier Diode

## General Information

The markets of portable communications, computing and video equipment are challenging the semiconductor industry to develop increasingly smaller electronic components. Bourns offers Rectifier Diodes for rectification applications, in compact chip package 1408 size format (compatible with SOD87, SOD123 formats), which offers PCB real estate savings and are considerably smaller than most competitive parts. The Glass Passivated Rectifier Diodes offer a forward current of 1 A with a choice of repetitive peak reverse voltage of 200 V up to 1000 V.

Bourns® Chip Diodes conform to JEDEC standards, are easy to handle on standard pick and place equipment and their flat configuration minimizes roll away.



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

Parameter	Symbol	CD1408-					Unit
		R1200	R1400	R1600	R1800	R11000	
Maximum Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	200	400	600	800	1000	V
Maximum RMS Voltage	V <sub>RMS</sub>	140	280	420	560	700	V
Maximum DC Blocking Voltage	V <sub>DC</sub>	200	400	600	800	1000	V
Max. Average Forward Rectified Current <sup>1</sup>	I(AV)	1.0					A
DC Reverse Current @ Rated DC Blocking Voltage (@T <sub>a</sub> = 25 °C)	I <sub>R</sub>	1.0					μA
DC Reverse Current @ Rated DC Blocking Voltage (@T <sub>a</sub> = 125 °C)	I <sub>R</sub>	30.0					μA
DC Reverse Current @ Rated DC Blocking Voltage (@T <sub>a</sub> = 150 °C)	I <sub>R</sub>	50.0					μA
Typical Junction Capacitance <sup>2</sup>	C <sub>J</sub>	12					pF
Instantaneous Forward Voltage @ I <sub>F</sub> = 1 A	V <sub>F</sub>	1.0					V
Maximum Reverse Recovery Time <sup>3</sup>	T <sub>rr</sub>	3000					ns
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	30.0					A
Typical Thermal Resistance	R <sub>j-a</sub>	80					°C/Watt
Typical Thermal Resistance	R <sub>j-l</sub>	40					°C/Watt

Notes:

- 1 See Forward Derating Curve.
- 2 Measured @ 1.0 MHz and applied reverse voltage of 4.0 VDC.
- 3 Reverse recovery test condition: I<sub>F</sub> = 0.5 A, I<sub>R</sub> = 1.0 A, I<sub>rr</sub> = 0.25 A

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

Parameter	Symbol	CD1408-R1200~R11000	Unit
Operating Temperature Range	T <sub>J</sub>	-65 to +175	°C
Storage Temperature Range	T <sub>STG</sub>	-65 to +175	°C



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

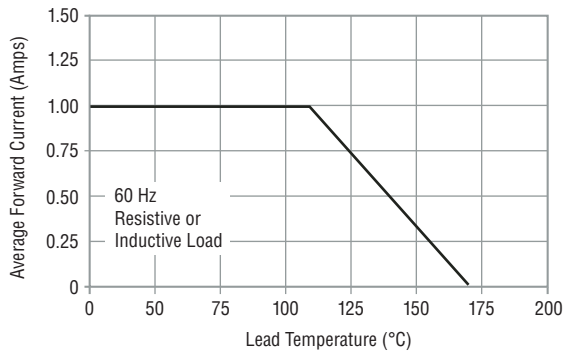
\*RoHS Directive 2015/863, Mar 31, 2015 and Annex.  
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# CD1408-R1200~R11000 – Surface Mount Rectifier Diode

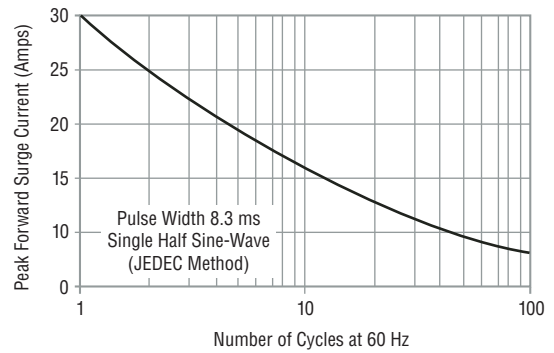


## Performance Graphs

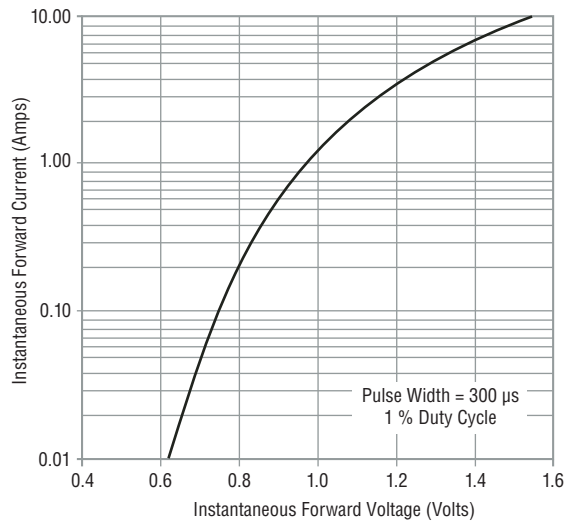
### Forward Current Derating Curve



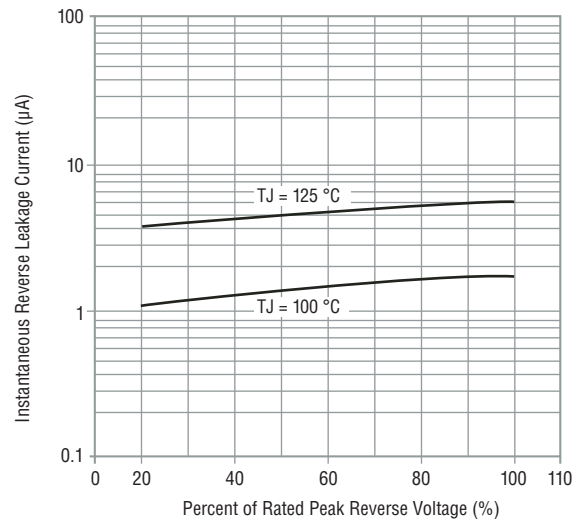
### Maximum Non-Repetitive Surge Current



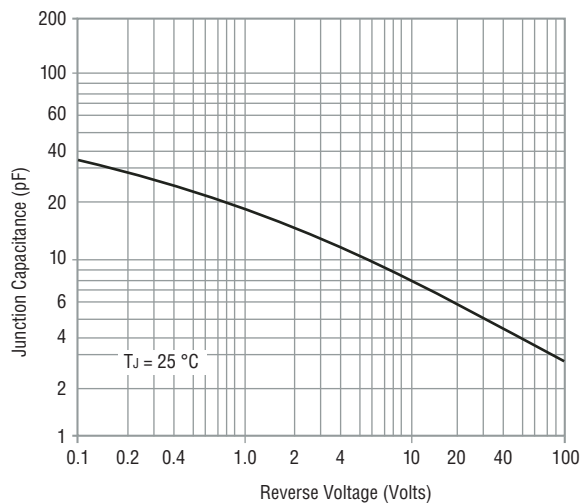
### Typical Forward Characteristics



### Typical Reverse Characteristics



### Typical Junction Capacitance



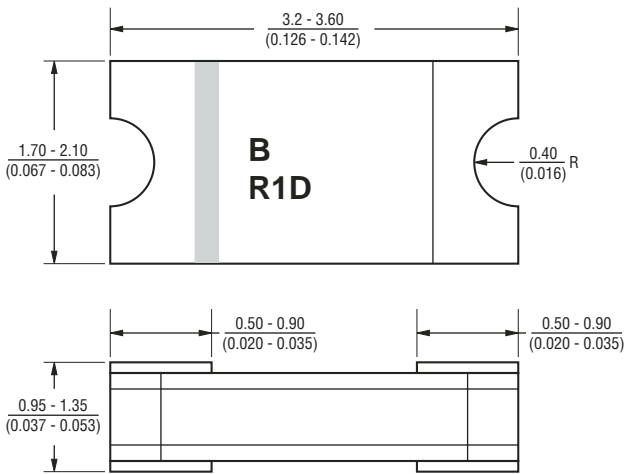
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# CD1408-R1200~R11000 – Surface Mount Rectifier Diode



## Product Dimensions

This is a lead free product, packaged with FRP substrate and is epoxy underfilled. The terminals are pure tin plated and are solderable per MIL-STD-750, Method 2026. The package weighs approximately 0.02 g. The package and dimensions are shown below.



DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

## Recommended Footprint

The device will mount onto existing JEDEC SOD-87 footprint.

## How To Order

Common Code **CD 1408 - R 1 400**  
 CD = Chip Diode  
 Package 1408 = ~0.14 x 0.08  
 Function R = Rectifier  
 Forward Current  $I_{(AV)}$  1 = 1 A  
 Reverse Voltage 200 = 200 V  
 400 = 400 V  
 600 = 600 V  
 800 = 800 V  
 1000 = 1000 V

## Typical Part Marking

CD1408-R1200 ..... R1D  
 CD1408-R1400 ..... R1G  
 CD1408-R1600 ..... R1J  
 CD1408-R1800 ..... R1K  
 CD1408-R11000 ..... R1M

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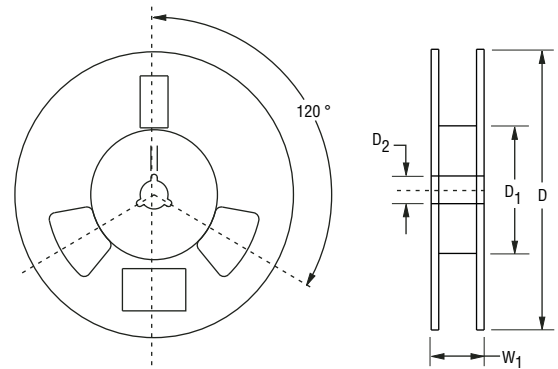
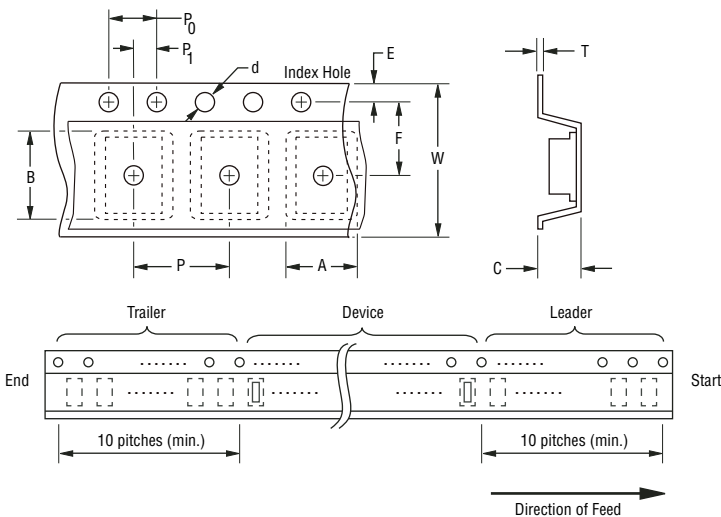
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# CD1408-R1200~R11000 – Surface Mount Rectifier Diode



## Packaging Information

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



DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

Devices are packed in accordance with EIA standard RS-481-A and specifications shown here.

Item	Symbol	1408
Carrier Width	A	$\frac{1.85 \pm 0.1}{(0.073 \pm 0.004)}$
Carrier Length	B	$\frac{3.65 \pm 0.1}{(0.144 \pm 0.004)}$
Carrier Depth	C	$\frac{1.25 \pm 0.1}{(0.05 \pm 0.004)}$
Sprocket Hole	d	$\frac{1.50 \pm 0.1}{(0.059 \pm 0.004)}$
Reel Outside Diameter	D	$\frac{178 \pm 2.0}{(7.008 \pm 0.079)}$
Reel Inner Diameter	D <sub>1</sub>	$\frac{50}{(1.969)}$ Min.
Feed Hole Diameter	D <sub>2</sub>	$\frac{13.0 \pm 0.5}{(0.512 \pm 0.020)}$
Sprocket Hole Position	E	$\frac{1.75 \pm 0.1}{(0.069 \pm 0.004)}$
Punch Hole Position	F	$\frac{5.50 \pm 0.05}{(0.217 \pm 0.002)}$
Punch Hole Pitch	P	$\frac{4.00 \pm 0.1}{(0.157 \pm 0.004)}$
Sprocket Hole Pitch	P <sub>0</sub>	$\frac{4.00 \pm 0.1}{(0.157 \pm 0.004)}$
Embossment Center	P <sub>1</sub>	$\frac{2.0 \pm 0.1}{(0.079 \pm 0.002)}$
Overall Tape Thickness	T	$\frac{0.40}{(0.016)}$ Max.
Tape Width	W	$\frac{12.00 \pm 0.30}{(0.472 \pm 0.012)}$
Reel Width	W <sub>1</sub>	$\frac{18.7}{(0.736)}$ Max.
Quantity per Reel	—	3,000



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