

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



Parameter	Symbol	CD1408-					
		R1200	R1400	R1600	R1800	R11000	Unit
Maximum Repetitive Peak Reverse Voltage	VRRM	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)	IR	1.0			μΑ		
DC Reverse Current @ Rated DC Blocking Voltage (@T <sub>a</sub> = 125 °C)	IR	30.0			μΑ		
DC Reverse Current @ Rated DC Blocking Voltage (@T <sub>a</sub> = 150 °C)	IR	50.0			μΑ		
Typical Junction Capacitance <sup>2</sup>	Сј	12			pF		
Instantaneous Forward Voltage @ I <sub>F</sub> = 1 A	VF			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)	IFSM	30.0			A		
Typical Thermal Resistance	Rj-a	80			°C/Watt		
Typical Thermal Resistance	Rj-I			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: IF = 0.5 A, IR = 1.0 A, Irr = 0.25 A

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

Parameter	Symbol	CD1408-R1200~R11000	Unit
Operating Temperature Range	TJ	-65 to +175	°C
Storage Temperature Range	Тѕтс	-65 to +175	°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.



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### **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:  $\frac{MM}{(INCHES)}$ 

### **Recommended Footprint**

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

### How To Order

	CD	1408 - R 1	400
Common Code			
Package			
Function R = Rectifier			
Forward Current I <sub>(AV)</sub>			
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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### **Packaging Information**

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





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

Item	Symbol	1408
Carrier Width	А	<u>1.90 ±0.10</u>
		(0.075 - 0.004)
Carrier Length	В	4.30 ±0.10
		(0.169 - 0.004)
Carrier Depth	С	$\frac{1.80 \pm 0.10}{(0.071 - 0.004)}$
		(0.071 - 0.004) 1.55 ±0.05
Sprocket Hole	d	(0.061 - 0.002)
		178
Reel Outside Diameter	D	(7.008)
	_	80.0
Reel Inner Diameter	D <sub>1</sub>	(3.150) Min.
Faad Hala Diamatan	D	13.0 ±0.20
Feed Hole Diameter	D <sub>2</sub>	(0.512 - 0.008)
Sprocket Hole Position	E	1.75 ±0.10
Sprocket Hole Fosition		(0.069 - 0.004)
Punch Hole Position	F	3.50 ±0.05
		(0.138 - 0.002)
Punch Hole Pitch	Р	4.00 ±0.10
		(0.157 - 0.004)
Sprocket Hole Pitch	Po	4.00 ±0.10
	. 0	(0.157 - 0.004)
Embossment Center	P <sub>1</sub>	$2.00 \pm 0.05$
	1	(0.079 - 0.002) 0.20 ±0.10
Overall Tape Thickness	Т	$(0.20 \pm 0.10)$
	W	(0.008 - 0.004) 8.00 ±0.20
Tape Width		(0.315 - 0.008)
		13.5
Reel Width	W <sub>1</sub>	$\frac{10.0}{(0.531)}$ Max.
Quantity per Reel		2,500

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### **Performance Graphs**

#### Forward Current Derating Curve



### **Typical Forward Characteristics**



#### **Typical Junction Capacitance**



Maximum Non-Repetitive Surge Current









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Asia-Pacific: Tel: +886-2 2562-4117 • Fax: +886-2 2562-4116 Europe: Tel: +41-41 768 5555 • Fax: +41-41 768 5510 The Americas: Tel: +1-951 781-5500 • Fax: +1-951 781-5700 www.bourns.com

#### REV. 03/07

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