

### Features

- RoHS compliant\*
- Low power loss and high efficiency
- High current capability
- Low profile package

## Applications

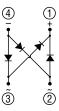
- AC operated products
- Computer monitors
- Set-top boxes
- Cable modems

# CD-DF4xxS(L) Series Surface Mount Bridge 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 Bridge Rectifier Diodes for rectification applications in compact chip package 0.41 " x 0.32 " size format, which offers PCB real estate savings and are considerably smaller than standard parts. The Bridge Rectifier Diodes offer a forward current of 4 A with a choice of repetitive peak reverse voltages between 600 V and 1000 V.



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

Parameter	Symbol	CD-						Unit
	Symbol	DF406S	DF408S	DF410S	DF406SL	DF408SL	DF410SL	Unit
Maximum Repetitive Peak Reverse Voltage	VRRM	600	800	1000	600	800	1000	V
Maximum Average Forward Rectified Current ( $T_A = 55 \ ^{\circ}C$ )	IF(AV)	4.0				А		
Peak Forward Surge Current 8.3 ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method)	IFSM	150.0					A	
Operating Temperature Range	ТJ	-55 to +175				°C		
Storage Temperature Range	TSTG	-55 to +175				°C		

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

Parameter	Symbol	CD-DF4xxS(L)						
		Test Conditions		Min.	Тур.	Max.	Unit	
Instantaneous Forward Voltage	VF	I <sub>F</sub> = 2 A	CD-DF4xxS		0.92	0.95	v	
			CD-DF4xxSL		0.86	0.90		
Repetitive Peak Reverse Current	IRRM	V <sub>R</sub> = V <sub>RRM</sub>	T <sub>A</sub> = +25 °C		0.08	5.0	μA	
Junction Capacitance	Сј	V <sub>R</sub> = 4 V, f = 1.0 MHz	CD-DF4xxS		45		pF	
			CD-DF4xxSL		45			
Thermal Resistance, Junction to Air <sup>(1)</sup>	R <sub>ØJA</sub>	CD-DF4xxS			35		°C/W	
		CD-DF4xxSL			35			
Thermal Resistance, Junction to Lead (1)	R <sub>ØJL</sub>	CD-DF4xxS			15		°C/W	
			CD-DF4xxSL		15			

NOTE 1: Thermal resistance, junction to ambient, measured on PC board with 50 mm<sup>2</sup> (0.03 mm thick) land areas.

WARNING Cancer and Reproductive Harm - <u>www.P65Warnings.ca.gov</u>

\*RoHS Directive 2015/863, Mar 31, 2015 and Annex. Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

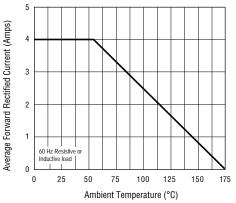
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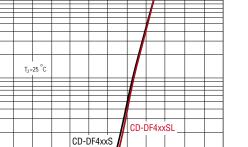
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### **Rating and Characteristic Curves**

### Forward Current Derating Curve



**Forward Characteristics** 10 1



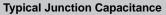
0.6

Instantaneous Forward Voltage (Volts)

0.8

1.0

1.2



0.2

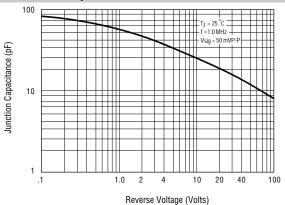
0.4

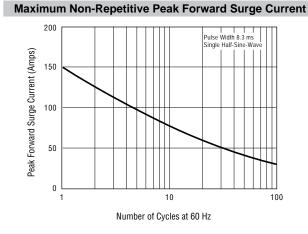
Instantaneous Forward Current (Amps)

0.1

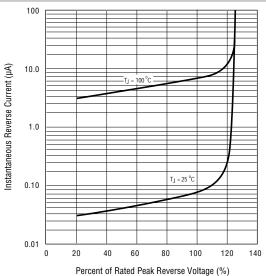
0.01

0





### **Reverse Characteristics**



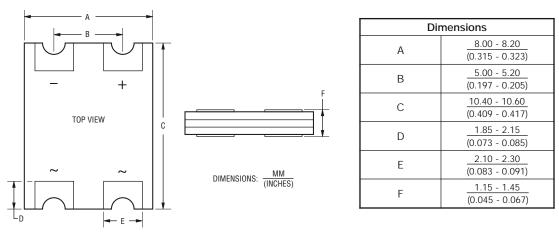
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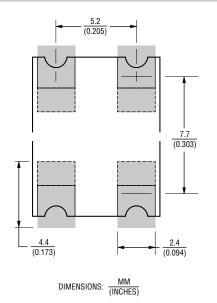
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#### **Product Dimensions**

This is an ROHS2 compliant product, packaged with FRP substrate and is epoxy underfilled. The terminals are pure tin plated (lead free) and are solderable per MIL-STD-750, Method 2026. The package and dimensions are shown below.



### **Recommended Footprint**



### How to Order CD - DF 4 06 SL Common Code Chip Diode Model DF = DF Bridge Series Average Forward Current 4 = 4 A Reverse Voltage 06 = 600 V08 = 800 V10 = 1000 V Forward Voltage Suffix -S = Standard Forward Voltage SL = Low Forward Voltage **Typical Part Marking** MANUFACTURER'S TRADEMARK LOW +FORWARD VOLTAGE **B**40L

800 <sup>L</sup>

0501

FORWARD

x 100 mA

VRMS = 800 V

DATE CODE

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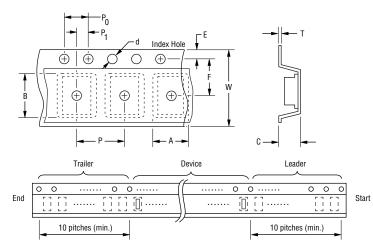
## Bourns

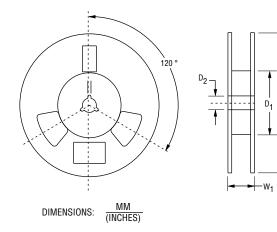
D

### **Packaging Information**

The surface mount product is packaged in a 16 mm x 12 mm tape and reel format per EIA-481 standard.

Direction of Feed





Item	Symbol	CD-DF4xxS(L)
Carrier Width	A	$\frac{8.63 \pm 0.38}{(0.34 \pm 0.01)}$
Carrier Length	В	$\frac{11.03 \pm 0.38}{(0.43 \pm 0.01)}$
Carrier Depth	с	$\frac{1.93 \pm 0.38}{(0.08 \pm 0.004)}$
Sprocket Hole	d	$\frac{1.55 \pm 0.05}{(0.061 \pm 0.002)}$
Reel Outside Diameter	D	( <u>330</u> ( <u>12.992</u> )
Reel Inner Diameter	D <sub>1</sub>	<u>50.0</u> (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	$\frac{7.50 \pm 0.10}{(0.295 \pm 0.004)}$
Punch Hole Pitch	Р	$\frac{12.00 \pm 0.10}{(0.472 \pm 0.004)}$
Sprocket Hole Pitch	P <sub>0</sub>	$\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$
Embossment Center	P <sub>1</sub>	$\frac{2.00 \pm 0.10}{(0.079 \pm 0.004)}$
Overall Tape Thickness	т	<u>0.40</u> (0.016) MAX.
Tape Width	w	$\frac{16.00 \pm 0.30}{(0.630 \pm 0.012)}$
Reel Width	W <sub>1</sub>	<u>22.7</u> (0.893) MAX.
Quantity per Reel		3,000

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