



Features

- RoHS compliant*
- Glass passivated chip
- Low reverse leakage current
- Low forward voltage drop
- High current capability

! This series is currently available but not recommended for new designs. The [Model CD214B-FS2x Series](#) is the recommended replacement.

CD214B-F250~F2600 Surface Mount Fast Response Rectifiers

General Information

The markets of portable communications, computing and video equipment are challenging the semiconductor industry to develop increasingly smaller electronic components. Bourns offers Surface Mount Fast Response Rectifiers for rectification applications, in compact chip DO-214AA (SMB) size format, which offer PCB real estate savings and are considerably smaller than most competitive parts. The Fast Response Rectifier Diodes offer a forward current of 2.0 A with a choice of repetitive peak reverse voltages of 50 V up to 600 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 (@ $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

| Parameter | Symbol | CD214B- | | | | | | Unit |
|--|-----------------|---------|-------|-------|-------|-------|-------|--------------------|
| | | F250 | F2100 | F2150 | F2200 | F2400 | F2600 | |
| Maximum Repetitive Peak Reverse Voltage | V_{RRM} | 50 | 100 | 150 | 200 | 400 | 600 | V |
| Maximum RMS Voltage | V_{RMS} | 35 | 70 | 105 | 140 | 280 | 420 | V |
| Maximum DC Blocking Voltage | V_{DC} | 50 | 100 | 150 | 200 | 400 | 600 | V |
| Max. Average Forward Rectified Current ¹ | $I_{(AV)}$ | 2.0 | | | | | | A |
| DC Reverse Current @ Rated DC Blocking Voltage (@ $T_J = 25^\circ\text{C}$) | I_R | 5.0 | | | | | | μA |
| DC Reverse Current @ Rated DC Blocking Voltage (@ $T_J = 125^\circ\text{C}$) | I_R | 350 | | | | | | μA |
| Typical Junction Capacitance ² | C_J | 200 | | | | | | pF |
| Maximum Instantaneous Forward Voltage @ 1 A | V_F | 0.92 | | | 1.25 | 1.30 | V | |
| Typical Thermal Resistance ³ | $R_{\theta JL}$ | 15 | | | | | | $^\circ\text{C/W}$ |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method) | I_{FSM} | 50 | | | | | | A |

Notes:

1 See Figure 1.

2 Measured @ 1.0 MHz and applied reverse voltage of 4.0 VDC.

3 Thermal resistance from junction to ambient and from junction to lead P.C.B. mounted on 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas.

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

| Parameter | Symbol | CD214B-F250~F2600 | Unit |
|-----------------------------|-----------|-------------------|------------------|
| Operating Temperature Range | T_J | -55 to +125 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | -55 to +150 | $^\circ\text{C}$ |

*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

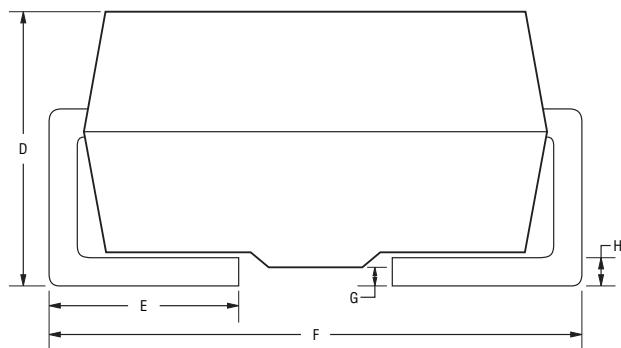
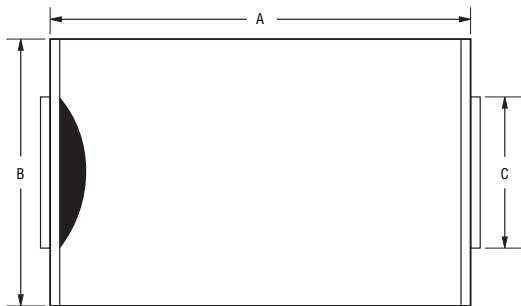
Users should verify actual device performance in their specific applications.

CD214B-F250~F2600 Surface Mount Fast Response Rectifiers

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Product Dimensions

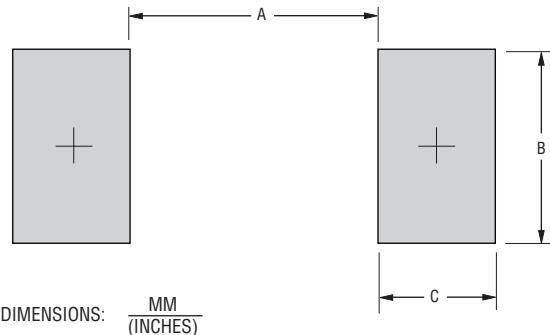
This is an RoHS compliant product. It is a molded plastic package. A cathode band indicates the polarity. The package weighs approximately 0.064 g. The package and dimensions are shown below.



| Dimensions | |
|------------|---|
| A | <u>4.06 - 4.57</u> (0.167 - 0.187) |
| B | <u>3.30 - 3.94</u> (0.130 - 0.150) |
| C | <u>1.96 - 2.21</u> (0.075 - 0.087) |
| D | <u>2.01 - 2.62</u> (0.079 - 0.096) |
| E | <u>0.76 - 1.52</u> (0.039 - 0.055) |
| F | <u>5.21 - 5.59</u> (0.197 - 0.236) |
| G | <u>0.05 - 0.20</u> (0.00196 - 0.00787) |
| H | <u>0.15 - 0.31</u> (0.006 - 0.016) |

DIMENSIONS: MM
(INCHES)

Recommended Pad Layout



| Dimension | SMA (DO-214AC) |
|-----------|------------------------|
| A | <u>2.90</u> (0.114) |
| B | <u>3.00</u> (0.118) |
| C | <u>2.30</u> (0.091) |

How To Order

CD 214B - F 2 50

Common Code _____
Chip Diode _____

Package _____
• 214B = SMB/DO-214AA

Model _____
F = Fast Response Rectifiers

Forward Current I_{AV} _____
2 = 2 A

Reverse Voltage _____

50 = 50 V
100 = 100 V
150 = 150 V
200 = 200 V
400 = 400 V
600 = 600 V

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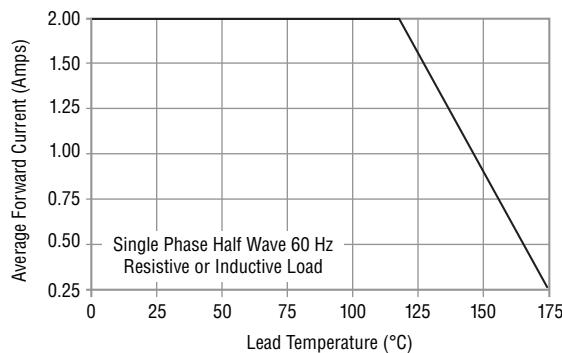
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CD214B-F250~F2600 Surface Mount Fast Response Rectifiers

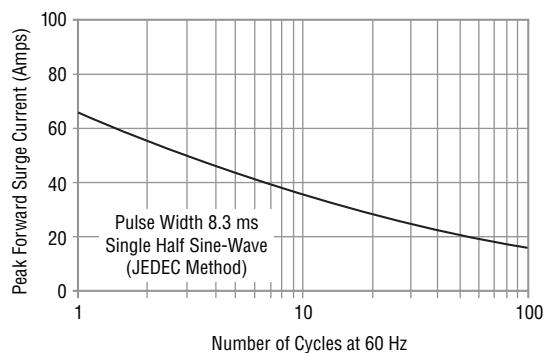
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Rating and Characteristic Curves

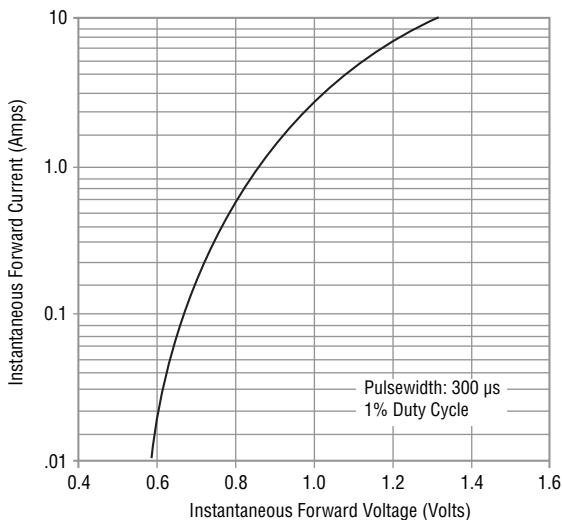
Forward Current Derating Curve



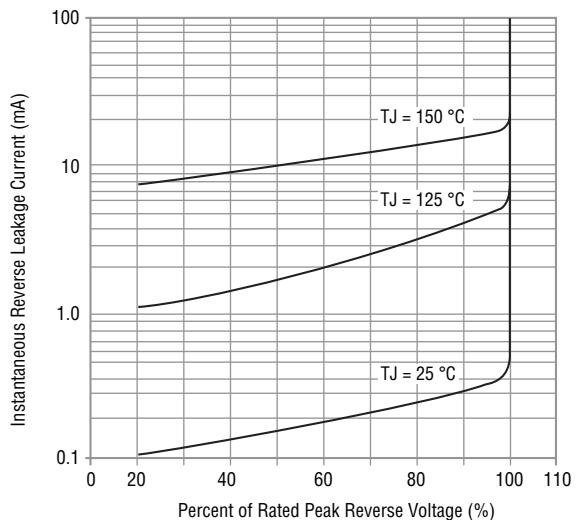
Non-Repetitive Surge Current



Forward Characteristics



Reverse Characteristics



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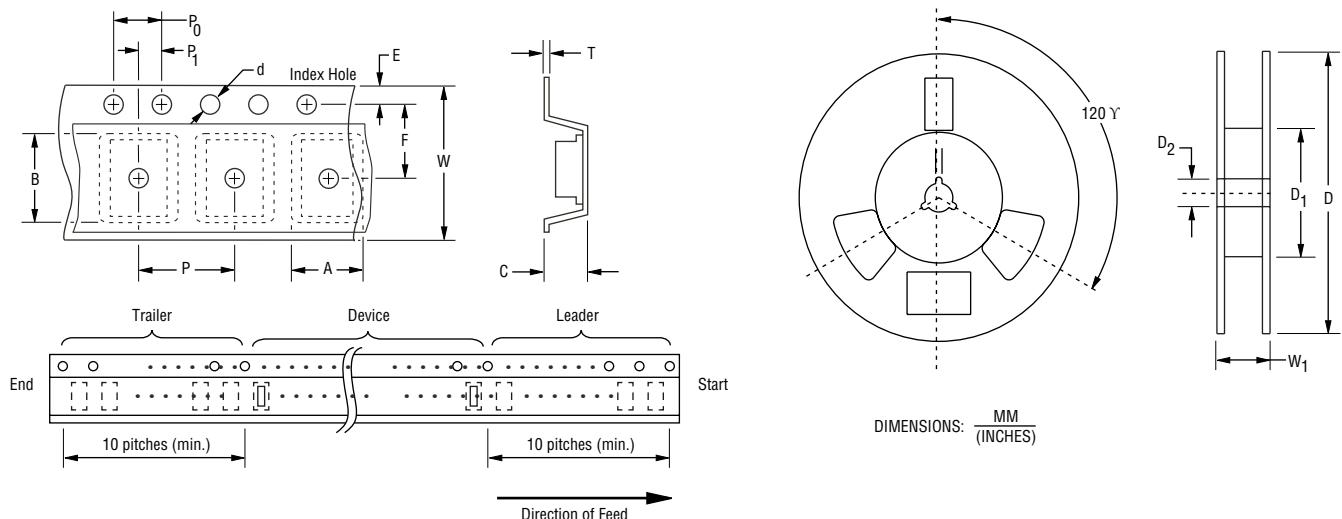
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CD214B-F250~F2600 Surface Mount Fast Response Rectifiers

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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 | DO-214AA (SMB) |
|------------------------|--------|--|
| Carrier Width | A | 1.90 ± 0.10 (0.075 ± 0.004) |
| Carrier Length | B | 4.30 ± 0.10 (0.169 ± 0.004) |
| Carrier Depth | C | 1.80 ± 0.10 (0.071 ± 0.004) |
| Sprocket Hole | d | 1.55 ± 0.05 (0.061 ± 0.002) |
| Reel Outside Diameter | D | 178 (7.008) |
| Reel Inner Diameter | D1 | 80.0 MIN. (3.150) |
| Feed Hole Diameter | D2 | 13.0 ± 0.20 (0.512 ± 0.008) |
| Sprocket Hole Position | E | 1.75 ± 0.10 (0.069 ± 0.004) |
| Punch Hole Position | F | 3.50 ± 0.05 (0.138 ± 0.002) |
| Punch Hole Pitch | P | 4.00 ± 0.10 (0.157 ± 0.004) |
| Sprocket Hole Pitch | P0 | 4.00 ± 0.10 (0.157 ± 0.004) |
| Embossment Center | P1 | 2.00 ± 0.05 (0.079 ± 0.002) |
| Overall Tape Thickness | T | 0.20 ± 0.10 (0.008 ± 0.004) |
| Tape Width | W | 8.00 ± 0.20 (0.315 ± 0.008) |
| Reel Width | W1 | 13.5 MIN. (0.531) |
| Quantity per Reel | — | 3,000 |

REV. 01/18

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