
## Features

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

# CD214A-F150~F1600 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 Glass Passivated Rectifiers for rectification applications, in compact chip DO-214AC (SMA) size format, which offer PCB real estate savings and are considerably smaller than most competitive parts. The Glass Passivated Rectifier Diodes offer a forward current of 1.0 A with a choice of repetitive peak reverse voltage 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 °C Unless Otherwise Noted)

| Parameter | Symbol | CD214A- | | | | | | Unit |
|---|---|---|---|---|---|---|---|---|
| | | F150 | F1100 | F1150 | F1200 | F1400 | F1600 | |
| 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 |
| Maximum Average Forward Rectified Current[1] | $I_{(AV)}$ | 1.0 | | | | | | A |
| DC Reverse Current @ Rated DC Blocking Voltage (@$T_A$ = 25 °C) | $I_R$ | 5.0 | | | | | | µA |
| DC Reverse Current @ Rated DC Blocking Voltage (@$T_A$ = 125 °C) | $I_R$ | 50.0 | | | | | | µA |
| Typical Junction Capacitance [2] | $C_J$ | 10 | | | | | | pF |
| Maximum Instantaneous Forward Voltage @ 1 A | $V_F$ | 0.95 | | | | 1.25 | 1.7 | V |
| Typical Thermal Resistance [3] | $R_{\theta JA}$ | 34 | | | | | | °C/W |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$ | 30 | | | | | 25 | A |
| Maximum Reverse Recovery Time [4] | $T_{rr}$ | 25 | | | | | 35 | ns |
| Typical Reverse Recovery Time [4] | $T_{rr}$ | 20 | | | | | 30 | ns |

Notes:
1 See Forward Derating Curve.
2 Measured at 1 MHz and an applied reverse voltage of 4.0 V.
3 Thermal resistance from junction to ambient and from junction to lead P.C.B. mounted on 0.2 x 0.2 ″ (5.0 x 5.0 mm) copper pad areas.
4 Reverse recovery test condition: IF 0.5 A, IR = 1.0 A, Irr = 0.25 A.

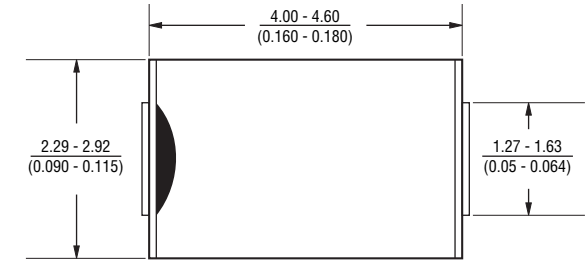
## Thermal Characteristics (@ $T_A$ = 25 °C Unless Otherwise Noted)

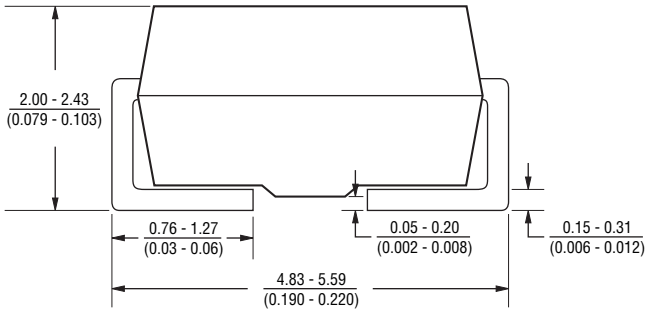
| Parameter | Symbol | CD214A-F150~F1600 | Unit |
|---|---|---|---|
| Operating Temperature Range | $T_J$ | -55 to +150 | °C |
| Storage Temperature Range | $T_{STG}$ | -55 to +150 | °C |

*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.
Customers should verify actual device performance in their specific applications.

## Product Dimensions

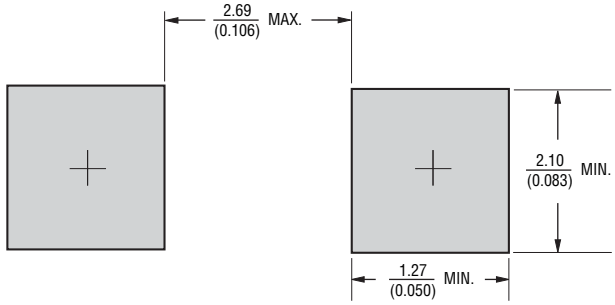
This is an RoHS compliant product using 100 % Sn termination. It is a molded plastic package. A cathode band indicates the polarity. The package weighs approximately 0.064 g. The package and dimensions are shown below.




DIMENSIONS: MM / (INCHES)

## Recommended Pad Layout




DIMENSIONS: MM / (INCHES)

## How To Order

**CD 214A - F 1 400**

Common Code
CD = Chip Diode

Package
214A = DO214AC

Model Series
F = Fast Response

Forward Current
1 = 1 A

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

## Typical Part Marking

| | |
|---|---|
| CD214A-F150 | **F1A** |
| CD214A-F1100 | **F1B** |
| CD214A-F1150 | **F1C** |
| CD214A-F1200 | **F1D** |
| CD214A-F1400 | **F1G** |
| CD214A-F1600 | **F1J** |

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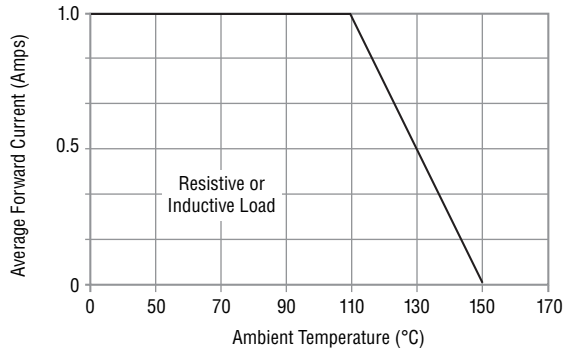
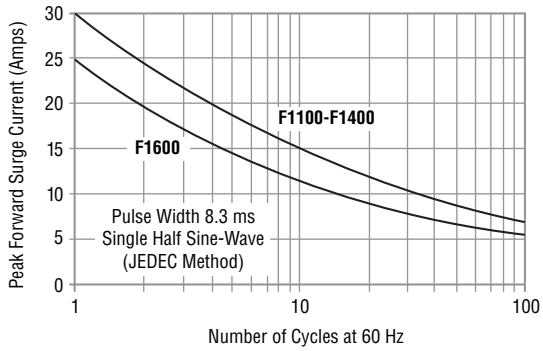
## Performance Graphs

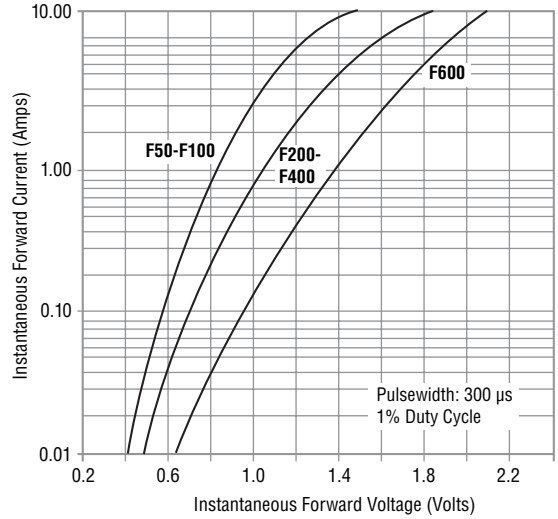
### Forward Current Derating Curve



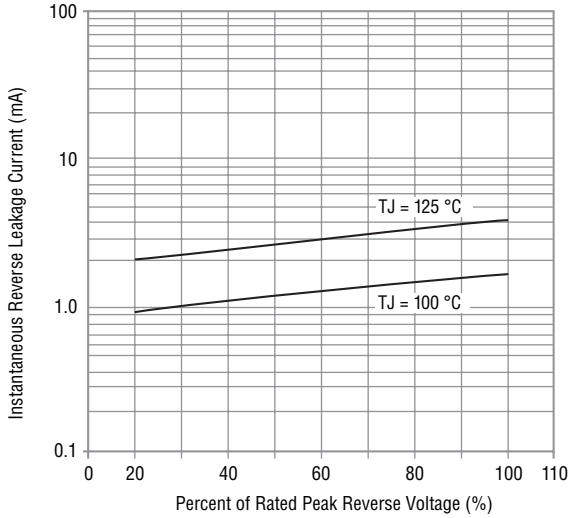

### Maximum Non-Repetitive Surge Current



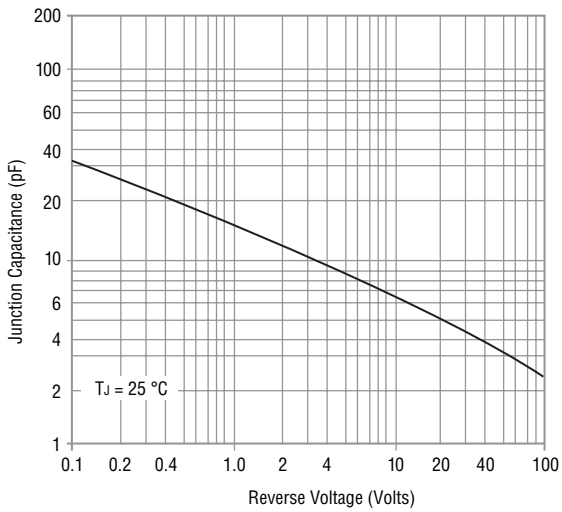

### Typical Forward Characteristics




### Typical Reverse Characteristics




### Typical Junction Capacitance

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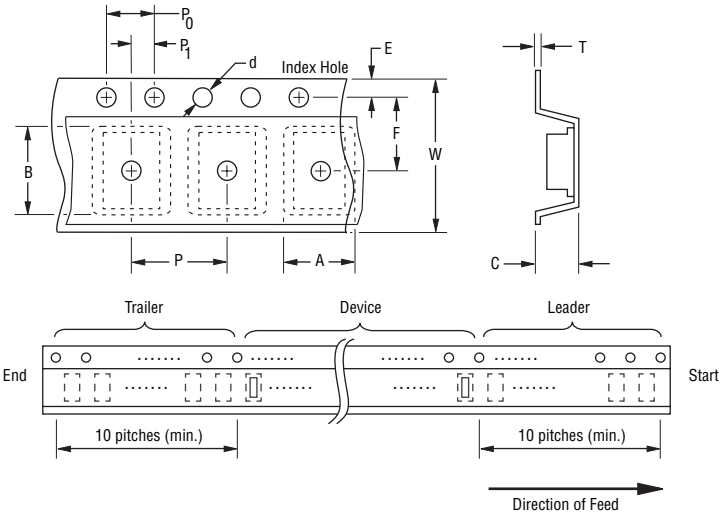
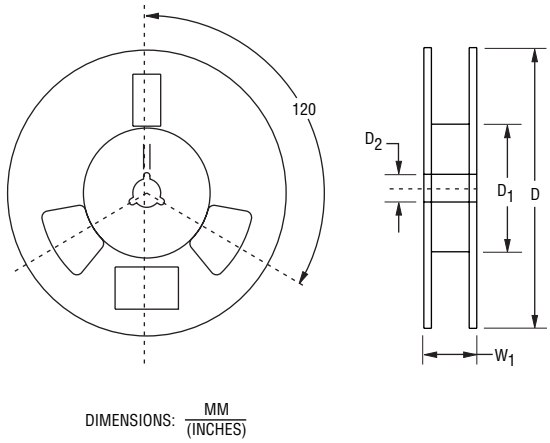
## Packaging Information

The surface mount product is packaged in a 12 mm x 4 mm tape and reel format per EIA-481 standard.




DIMENSIONS: MM / (INCHES)

| Item | Symbol | DO-214AC (SMA) |
|---|---|---|
| Carrier Width | A | 3.42 ± 0.10 (0.134 ± 0.004) |
| Carrier Length | B | 5.07 ± 0.10 (0.199 ± 0.004) |
| Carrier Depth | C | 3.10 ± 0.10 (0.122 ± 0.004) |
| Sprocket Hole | d | 1.55 ± 0.05 (0.061 ± 0.002) |
| Reel Outside Diameter | D | 330 (12.992) |
| Reel Inner Diameter | $D_1$ | 50.0 (1.969) Min. |
| Feed Hole Diameter | $D_2$ | 13.0 ± 0.50 (0.512 ± 0.020) |
| Sprocket Hole Position | E | 1.75 ± 0.10 (0.069 ± 0.004) |
| Punch Hole Position | F | 5.50 ± 0.50 (0.217 ± 0.020) |
| Punch Hole Pitch | P | 4.00 ± 0.10 (0.157 ± 0.004) |
| Sprocket Hole Pitch | $P_0$ | 4.00 ± 0.10 (0.157 ± 0.004) |
| Embossment Center | $P_1$ | 2.00 ± 0.05 (0.079 ± 0.002) |
| Overall Tape Thickness | T | 0.30 ± 0.10 (0.012 ± 0.004) |
| Tape Width | W | 12.00 ± 0.20 (0.420 ± 0.008) |
| Reel Width | $W_1$ | 18.7 (0.736) Max. |
| Quantity per Reel | — | 7,500 |

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