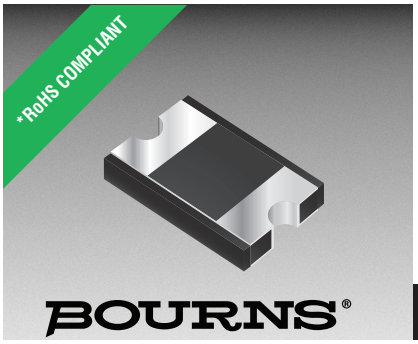



## Features

- RoHS compliant*
- Low profile
- Low power loss, high efficiency
- UL 94V-0 classification

## Applications

- Switch Mode Power Supplies
- Portable equipment batteries
- High frequency rectification
- DC/DC Converters
- Telecommunications

# CD214C-FS3x Series Fast Response Rectifier Chip Diode

## General Information

Portable communications, computing and video equipment manufacturers are challenging the semiconductor industry to develop increasingly smaller electronic components.

Bourns offers Glass Passivated Rectifiers for rectification applications in a compact chip package compatible with DO-214AB (SMC) size format. The Glass Passivated Rectifier Diodes offer a forward current of 3 A with a choice of repetitive peak reverse voltage of 200 V up to 600 V.

## Absolute Maximum Ratings (@ $T_A$ = 25 °C Unless Otherwise Noted)

| Parameter | Symbol | CD214C- | | | Unit |
|---|---|---|---|---|---|
| | | FS3D | FS3G | FS3J | |
| Maximum Repetitive Peak Reverse Voltage | $V_{RRM}$ | 200 | 400 | 600 | V |
| Maximum Average Forward Current | $I_{F(AV)}$ | 3 | | | A |
| Maximum Peak Forward Surge Current (8.3 ms Single Half Sine-Wave) | $I_{FSM}$ | 100 | | | A |
| Operating Junction Temperature Range | $T_{OPR}$ | -65 to +175 | | | °C |
| Storage Temperature Range | $T_{STG}$ | -65 to +175 | | | °C |

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

| Parameter | | Symbol | Condition or Model | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|---|
| Maximum Instantaneous Forward Voltage (NOTE 1) | | $V_F$ | $I_F$ = 3 A | CD214C-FS3D | | 0.93 | 0.95 | V |
| | | | | CD214C-FS3G | | 1.2 | 1.25 | |
| | | | | CD214C-FS3J | | 1.4 | 1.7 | |
| DC Reverse Current | | $I_R$ | $V_R$ = $V_{RRM}$ | | | 0.2 | 5 | μA |
| Reverse Recovery Time | $I_F$= 0.5 A, $I_R$ = 1.0 A, $I_{rr}$ = 0.25 A | $T_{rr}$ | | | | 35 | | nS |
| Typical Junction Capacitance | | $C_J$ | $V_R$ = 4 V, f = 1.0 MHz | | | 19 | | pF |
| Typical Thermal Resistance (NOTE 2) | Junction to Ambient | $R_{\theta JA}$ | | | | 60 | | °C/W |
| | Junction to Lead | $R_{\theta JL}$ | | | | 10 | | |

NOTES:

(1) Pulse width 300 microsecond, 1 % duty cycle.

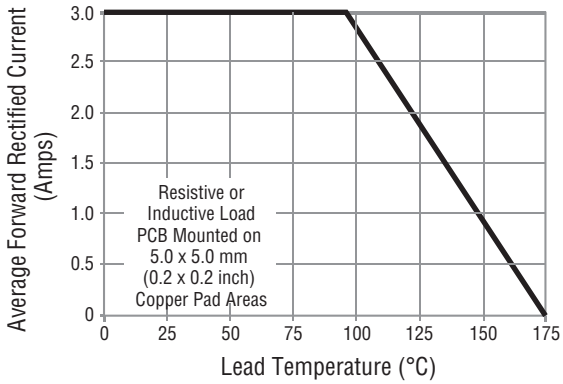
(2) Mounted on PCB with 5.0 x 5.0 mm (0.2 x 0.2 inch) copper pad areas.

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

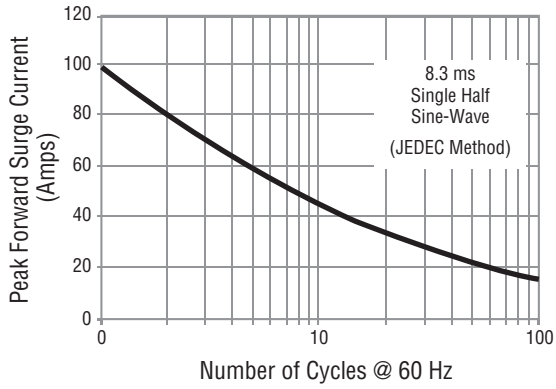
Specifications are subject to change without notice.
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.
Users should verify actual device performance in their specific applications.

## Performance Graphs

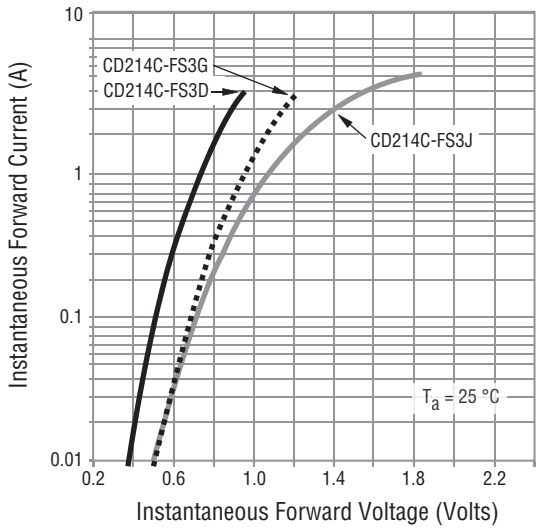
### Forward Current Derating Curve



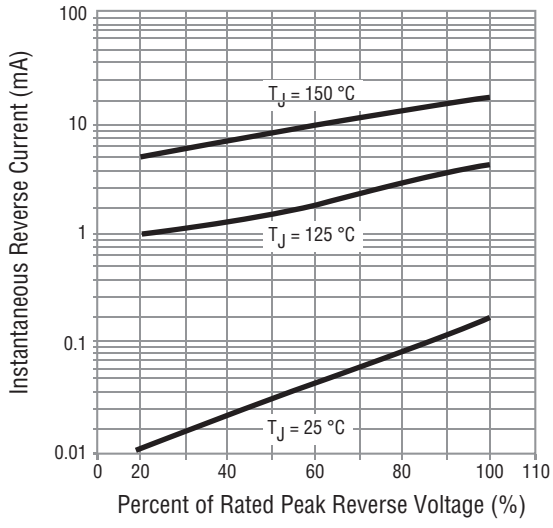

### Maximum Peak Forward Surge Current



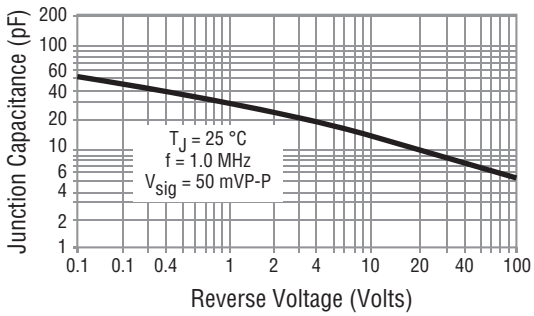

### Typical Instantaneous Forward Characteristics




### Typical Reverse Characteristics




### Typical Junction Capacitance

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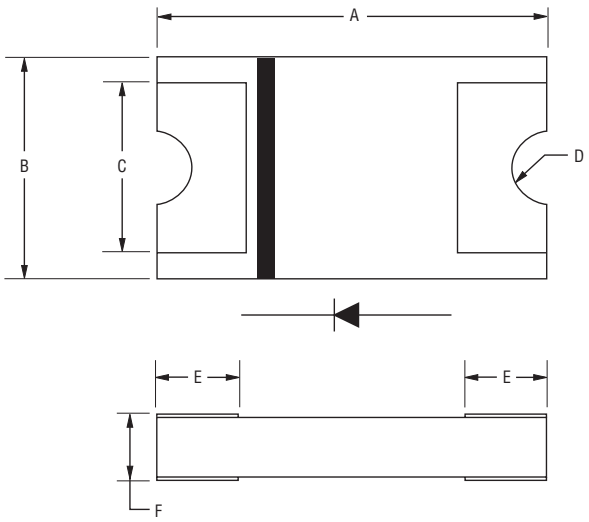
# CD214C-FS3x Series Fast Response Rectifier Chip Diode

BOURNS®

## Product Dimensions




| Dimension | CD214C-FS Series |
|---|---|
| A | 8.0 ± 0.10 (0.315 ± 0.004) |
| B | 5.0 ± 0.10 (0.197 ± 0.004) |
| C | 3.90 (0.154) TYP. |
| D | 0.80 ± 0.02 (0.031 ± 0.001) |
| E | 1.95 ± 0.10 (0.077 ± 0.004) |
| F | 1.10 ± 0.15 (0.043 ± 0.006) |

DIMENSIONS: MM (INCHES)

## How to Order

**CD 214C - FS 3 D**

Common Code
CD = Chip Diode

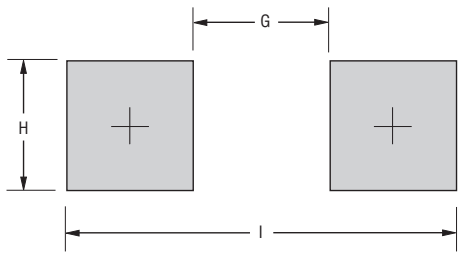
Package
214C = SMC/DO-214AB Compatible

Model
FS = Fast Response Rectifier

Maximum Average Forward Rectified Current
3 = 3 A

Maximum Repetitive Peak Reverse Voltage
D = 200 V
G = 400 V
J = 600 V

## Recommended Pad Layout



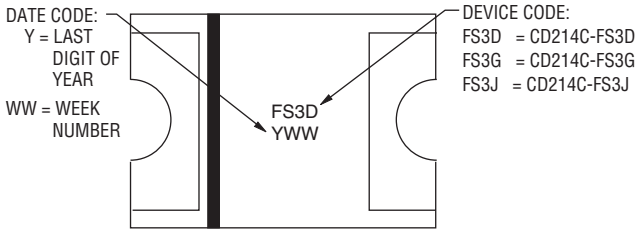

| Dimension | CD214C-FS Series |
|---|---|
| G | 4.10 (0.161) MAX. |
| H | 3.90 (0154) MIN. |
| I | 11.90 (0.469) REF. |

DIMENSIONS: MM (INCHES)

## Environmental Specifications

Moisture Sensitivity Level.....1
ESD Classification (HBM).....3B

## Typical Part Marking

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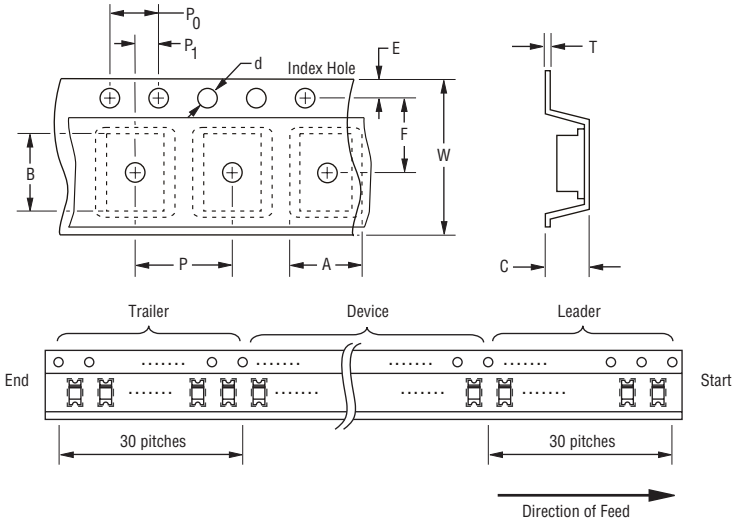
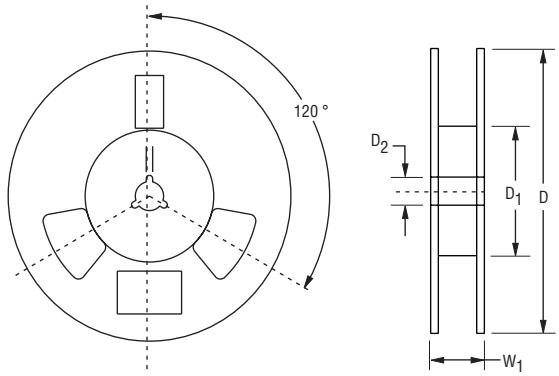
## Packaging Information

The product is dispensed in tape and reel format (see diagram below).




DIMENSIONS: MM / (INCHES)

| Item | Symbol | CD214C-FS3 Series |
|---|---|---|
| Carrier Width | A | 5.56 ± 0.10 (0.219 ± 0.004) |
| Carrier Length | B | 8.18 ± 0.10 (0.322 ± 0.004) |
| Carrier Depth | C | 2.50 (0.098) MAX. |
| Sprocket Hole | d | 1.55 ± 0.05 (0.061 ± 0.002) |
| Reel Outside Diameter | D | 330 ± 2.0 (12.992 ± 0.079) |
| 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 | 7.50 ± 0.10 (0.295 ± 0.004) |
| Punch Hole Pitch | P | 8.00 ± 0.10 (0.315 ± 0.004) |
| Sprocket Hole Pitch | $P_0$ | 4.00 ± 0.10 (0.157 ± 0.004) |
| Embossment Center | $P_1$ | 2.00 ± 0.10 (0.079 ± 0.004) |
| Overall Tape Thickness | T | 0.40 (0.016) MAX. |
| Tape Width | W | 16.00 ± 0.30 (0.630 ± 0.012) |
| Reel Width | $W_1$ | 22.7 (0.893) MAX. |
| Quantity per Reel | -- | 3,000 |

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