

Features

- RoHS compliant*
- Low profile
- Surface mount
- Very low forward voltage drop



This series is obsolete and not recommended for new designs. The [Model CD123D-B Series](#) is the recommended replacement.

CD216A-B120L~B140 MITE Chip 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 Schottky Rectifier Diodes for rectification applications in compact DO-216AA size chip package formats, which offer PCB real estate savings and are considerably smaller than competitive parts. The Schottky Barrier Rectifier Diodes offer a forward current of 1 A with a choice of repetitive peak reverse voltage of 20 V up to 40 V.

Bourns® Chip Diodes conform to JEDEC standards, are easy to handle with standard pick and place equipment and their flat configuration minimizes roll away.

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

| Parameter | Symbol | CD216- | | | | Unit |
|--|----------------|--------|-------|-------|------|------|
| | | B120L | B120R | B130L | B140 | |
| Forward Voltage (Max.) (I _F = 1 A) | V _F | 0.45 | 0.53 | 0.38 | 0.55 | V |
| Typical Junction Capacitance** | C _T | 90 | 75 | 70 | 60 | pF |
| Reverse Current (Max.) (@ Rated V _R) | I _R | 400 | 10 | 410 | 500 | μA |

**Measured at 1.0 MHz and applied reverse voltage of 4.0 V DC.

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

| Parameter | Symbol | CD216- | | | | Unit |
|--|---|----------------------|----------------------------|----------------------|----------------------|------|
| | | B120L | B120R | B130L | B140 | |
| Repetitive Peak Reverse Voltage | V _R RM | 20 | 20 | 30 | 40 | V |
| DC Blocking Voltage | V _{DC} | 20 | 20 | 30 | 40 | V |
| RMS Voltage | V _{RMS} | 14 | 14 | 21 | 28 | V |
| Average Forward Current @ T _L = 130 °C | I _O | 1 | | | | A |
| Peak Forward Surge Current*** | I _{FSM} | 50 | 50 | 50 | 40 | A |
| Max. Instantaneous Forward Voltage**** @ I _F = 0.1 A @ I _F = 1.0 A @ I _F = 2.0 A @ I _F = 3.0 A | V _F | 0.34 0.45 0.65 | 0.455 0.53 0.595 | 0.30 0.38 0.52 | 0.36 0.55 0.85 | V |
| Max. Instantaneous Reverse Current @ V _R = 40 V @ V _R = 30 V @ V _R = 20 V @ V _R = 10 V @ V _R = 5 V | I _R | 0.4 0.1 | 0.0100 0.0010 0.0005 | 0.41 0.13 0.05 | 0.50 0.15 | mA |
| Thermal Resistance Junction to Lead (Anode) Junction to Tab (Cathode) Junction to Ambient | R _θ JL R _θ JTAB R _θ JA | 35 20 250 | | | | °C/W |
| Storage Temperature | T _{STG} | -55 to +150 | | | | °C |
| Junction Temperature | T _J | -55 to +125 | | | | °C |

***Surge Current 8.3 ms single phase, half sine wave, 60 Hz (JEDEC Method).

****Pulse Test; Pulse Width = 300 μS, Duty Cycle = 2 %.



WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

*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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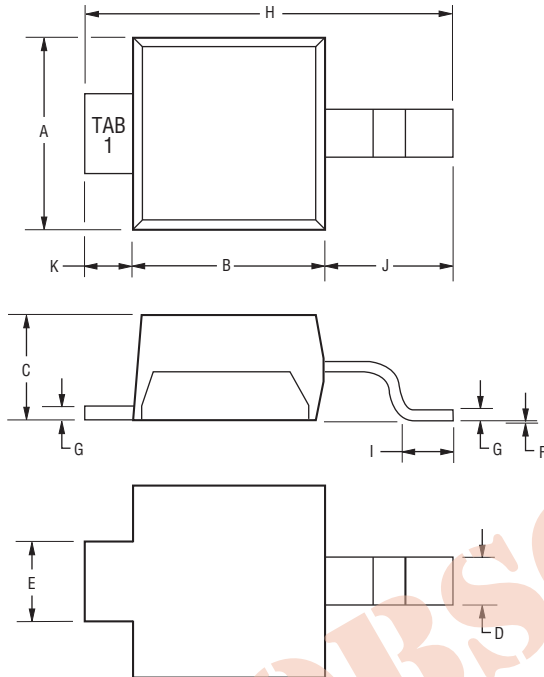
Applications

- Cellular phones
- PDAs
- Desktop PCs and notebooks
- Digital cameras
- MP3 players

CD216A-B120L~B140 MITE Chip Diode

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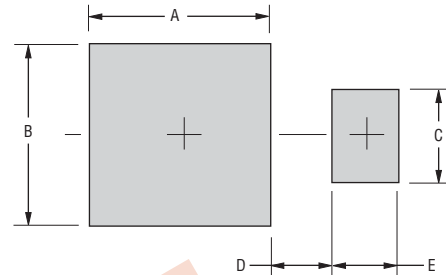
Product Dimensions



| Dimension | DO-216AA |
|-----------|---------------------------------------|
| A | $\frac{1.75 - 2.05}{(0.069 - 0.081)}$ |
| B | $\frac{1.80 - 2.20}{(0.071 - 0.087)}$ |
| C | $\frac{0.95 - 1.15}{(0.037 - 0.045)}$ |
| D | $\frac{0.42 - 0.68}{(0.017 - 0.027)}$ |
| E | $\frac{0.70 - 1.00}{(0.028 - 0.039)}$ |
| F | $\frac{0.05 - 0.10}{(0.002 - 0.004)}$ |
| G | $\frac{0.10 - 0.25}{(0.004 - 0.010)}$ |
| H | $\frac{3.65 - 3.95}{(0.144 - 0.156)}$ |
| I | $\frac{0.40 - 0.70}{(0.016 - 0.028)}$ |
| J | $\frac{1.10 - 1.50}{(0.043 - 0.059)}$ |
| K | $\frac{0.20 - 0.80}{(0.008 - 0.060)}$ |

DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$

Recommended Pad Layout



| Dimension | DO-216AA |
|-----------|-------------------------|
| A | $\frac{2.67}{(0.105)}$ |
| B | $\frac{2.54}{(0.100)}$ |
| C | $\frac{1.27}{(0.050)}$ |
| D | $\frac{0.625}{(0.025)}$ |
| E | $\frac{0.762}{(0.030)}$ |

Physical Specifications

Case JEDEC 20-216AA Molded plastic
 Polarity Cathode designated by TAB 1
 Weight Approximately 0.016 grams
 Mounting Position One way

Typical Part Marking

CD216A-B120L B2L
 CD216A-B120R B2E
 CD216A-B130L B3L
 CD216A-B140 B4S

How to Order

CD 216A - B 1 20 L LF

Common Code _____
 Chip Diode _____
 Package _____
 • 216A = DO-216AA
 Model _____
 B = Schottky Barrier Series
 Average Forward Current (IO) Code _____
 1 = 1 A (Code x 1000 mA = Average Forward Current)
 Reverse Voltage (VR) Code _____
 20 = 20 V
 30 = 30 V
 40 = 40 V
 Forward Voltage Suffix _____
 L = Low Forward Voltage Vf (CD216-B120L, CD216-B130L)
 R = Low Leakage Current IR (CD216-B120R)
 Terminations _____
 LF = 100 % Sn (RoHS Compliant)

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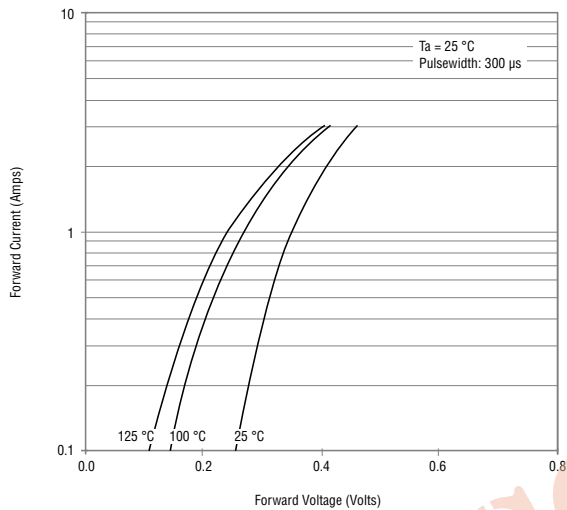
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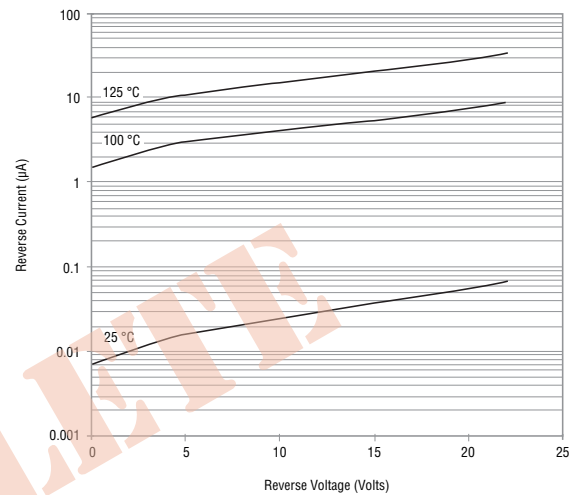
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Rating & Characteristic Curves: CD216A-B120L

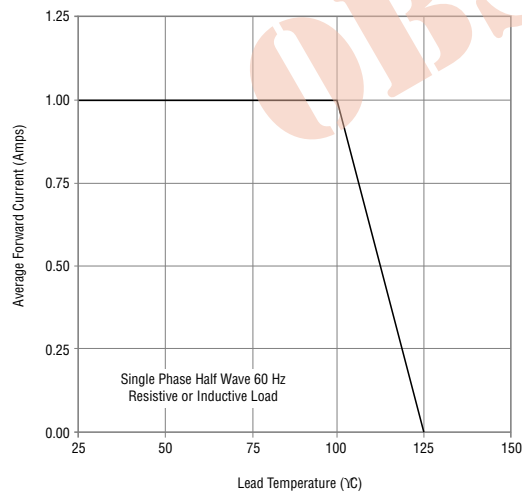
Forward Characteristics



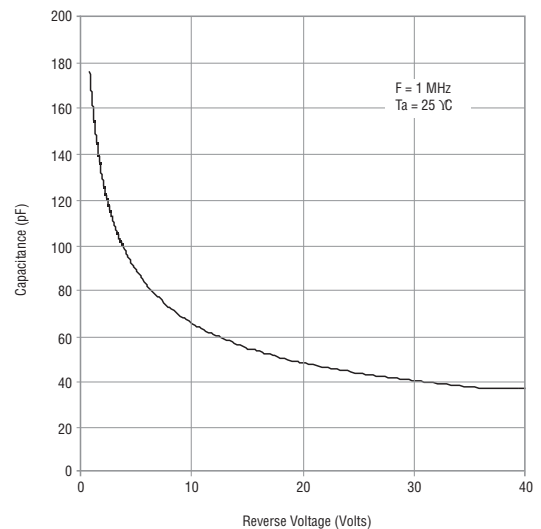
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



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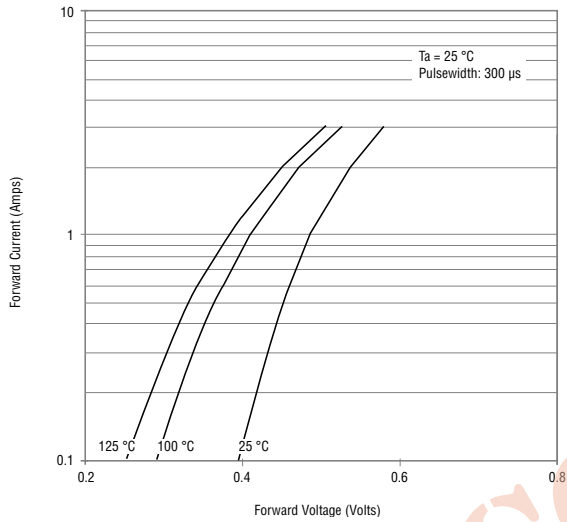
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CD216A-B120L~B140 MITE Chip Diode

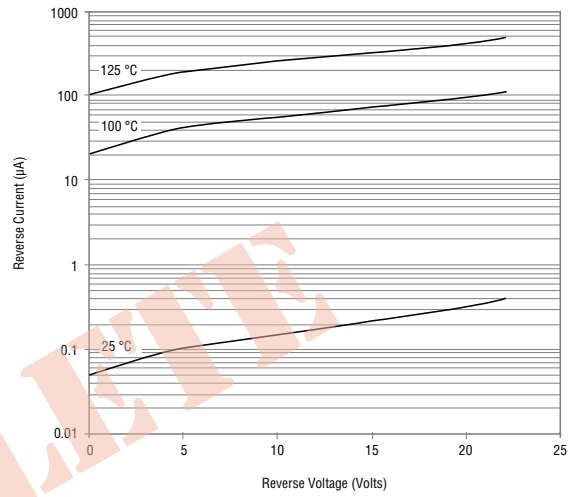
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Rating & Characteristic Curves: CD216A-B120R

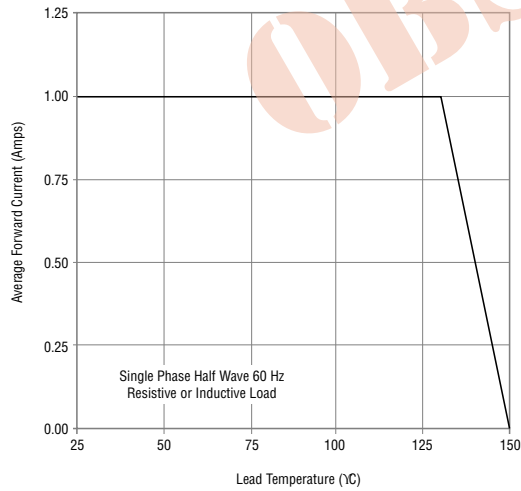
Forward Characteristics



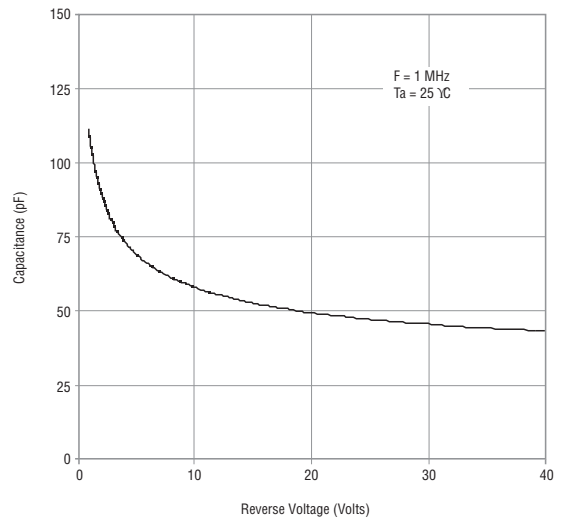
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Derating Curve



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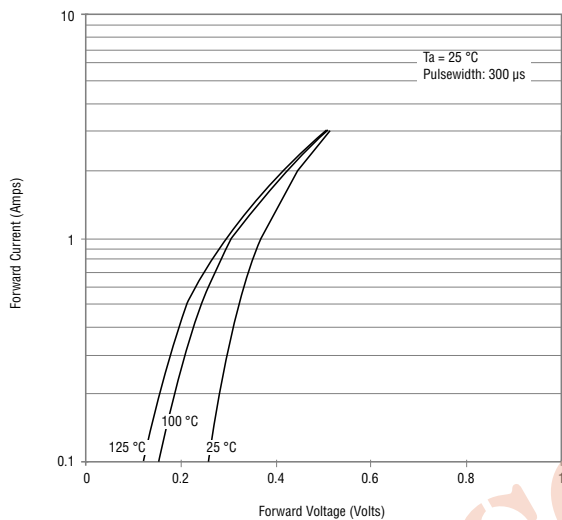
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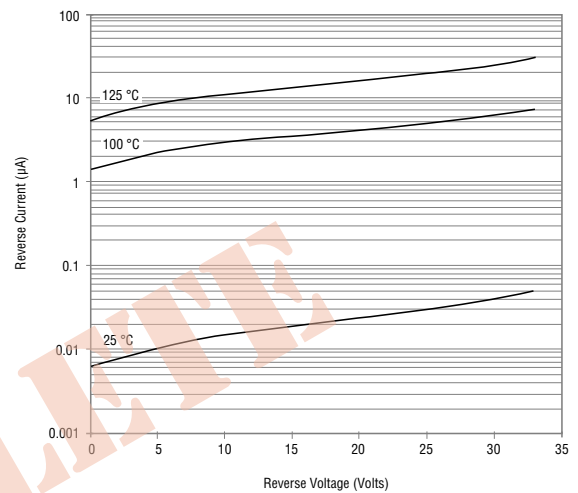
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Rating & Characteristic Curves: CD216A-B130L

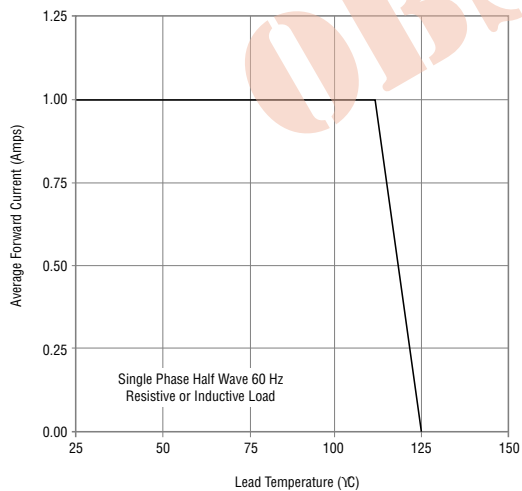
Forward Characteristics



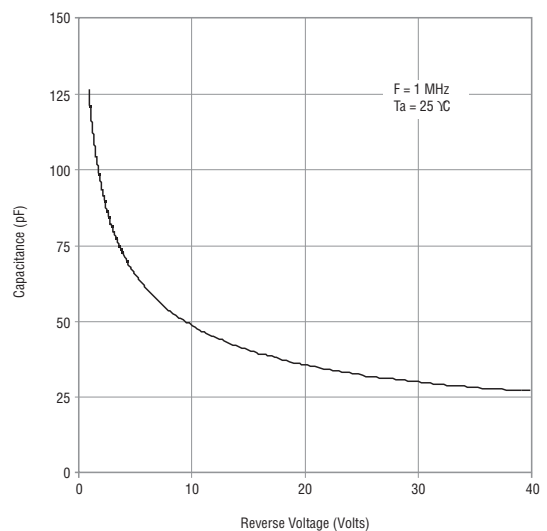
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



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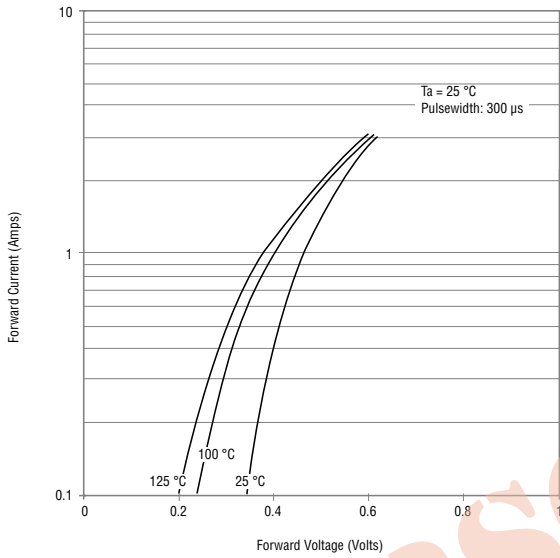
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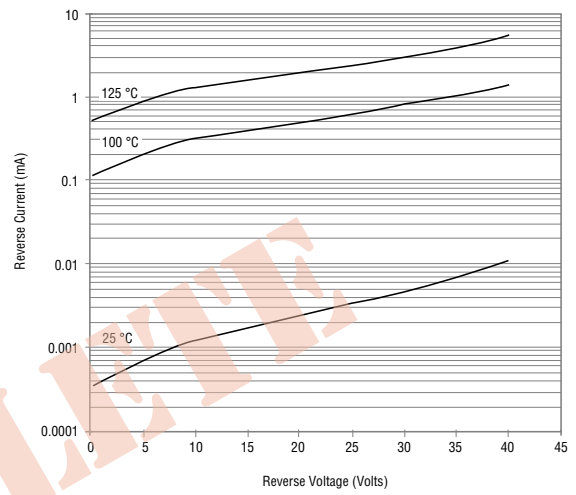
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Rating & Characteristic Curves: CD216A-B140

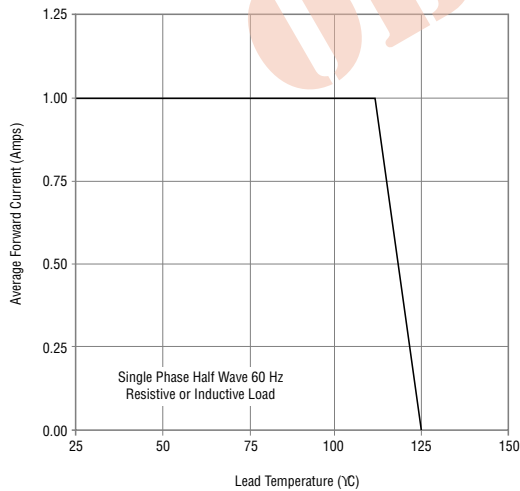
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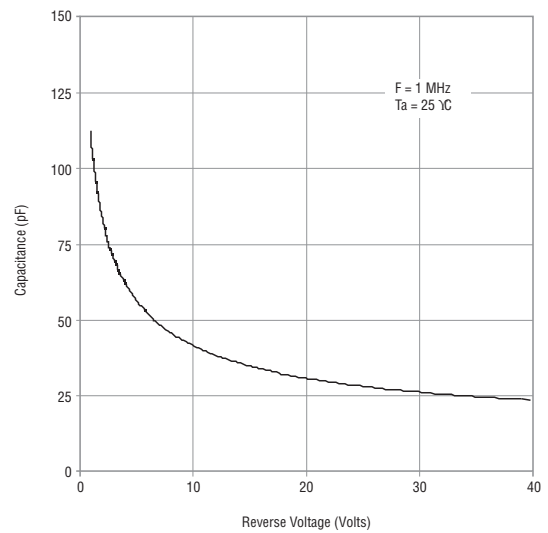
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



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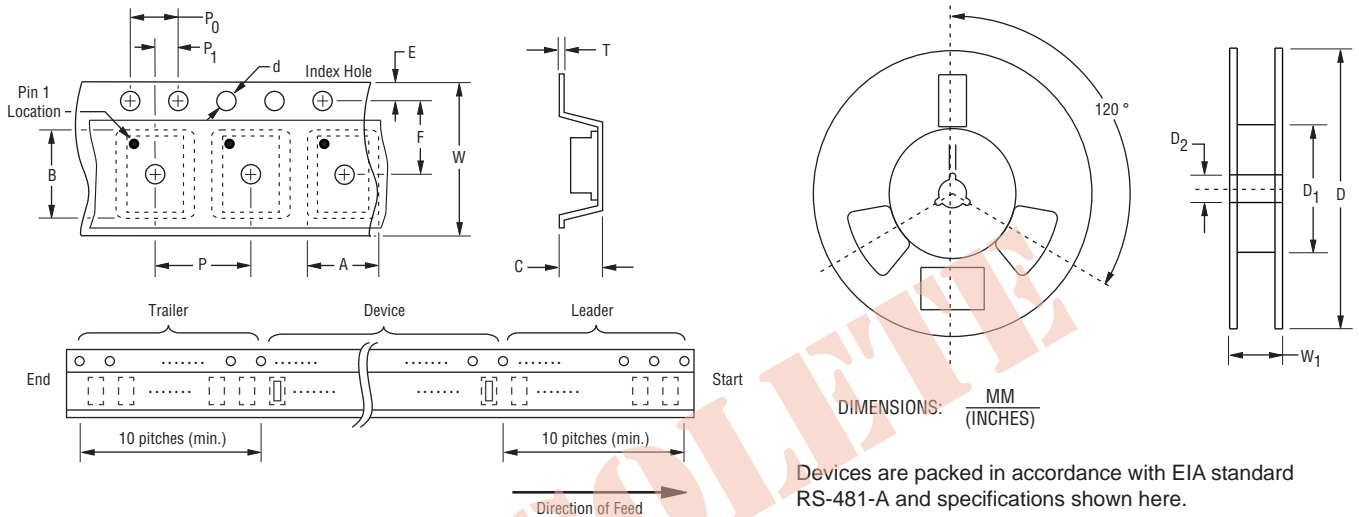
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CD216A-B120L~B140 MITE Chip Diode

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Packaging Information

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



| Item | Symbol | DO-216AA |
|------------------------|----------------|---|
| Carrier Width | A | 2.90 ± 0.10 (0.114 ± 0.004) |
| Carrier Length | B | 5.30 ± 0.10 (0.209 ± 0.004) |
| Carrier Depth | C | 1.37 ± 0.10 (0.054 ± 0.004) |
| Sprocket Hole | d | 1.55 ± 0.05 (0.061 ± 0.002) |
| Reel Outside Diameter | D | 178 (7.008) |
| Reel Inner Diameter | D ₁ | 75.0 (2.953) MIN. |
| Feed Hole Diameter | D ₂ | 13.0 ± 0.20 (0.512 ± 0.008) |
| Sprocket Hole Position | E | 1.75 ± 0.10 (0.069 ± 0.004) |
| Punch Hole Position | F | 5.50 ± 0.05 (0.217 ± 0.002) |
| 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 | 0.40 ± 0.10 (0.016 ± 0.004) |
| Tape Width | W | 12.00 ± 0.20 (0.472 ± 0.008) |
| Reel Width | W ₁ | 18.4 (0.724) MAX. |
| Quantity per Reel | -- | 3,000 |

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