

Features

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

Applications

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

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

Parameter	Symbol	CD216-				Unit
		B120L	B120R	B130L	B140	
Forward Voltage (Max.) ($I_F = 1\text{ A}$)	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 (@ $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	CD216-				Unit
		B120L	B120R	B130L	B140	
Repetitive Peak Reverse Voltage	V_{RRM}	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 @ $T_L = 130^\circ\text{C}$	I_O	1				A
Peak Forward Surge Current***	I_{FSM}	50	50	50	40	A
Max. Instantaneous Forward Voltage**** @ $I_F = 0.1\text{ A}$ @ $I_F = 1.0\text{ A}$ @ $I_F = 2.0\text{ A}$ @ $I_F = 3.0\text{ A}$	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 @ $V_R = 40\text{ V}$ @ $V_R = 30\text{ V}$ @ $V_R = 20\text{ V}$ @ $V_R = 10\text{ V}$ @ $V_R = 5\text{ V}$	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	$R_{\theta JL}$ $R_{\theta JTAB}$ $R_{\theta JA}$	35 20 250				$^\circ\text{C/W}$
Storage Temperature	T_{STG}	-55 to +150				$^\circ\text{C}$
Junction Temperature	T_J	-55 to +125				$^\circ\text{C}$

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

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

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

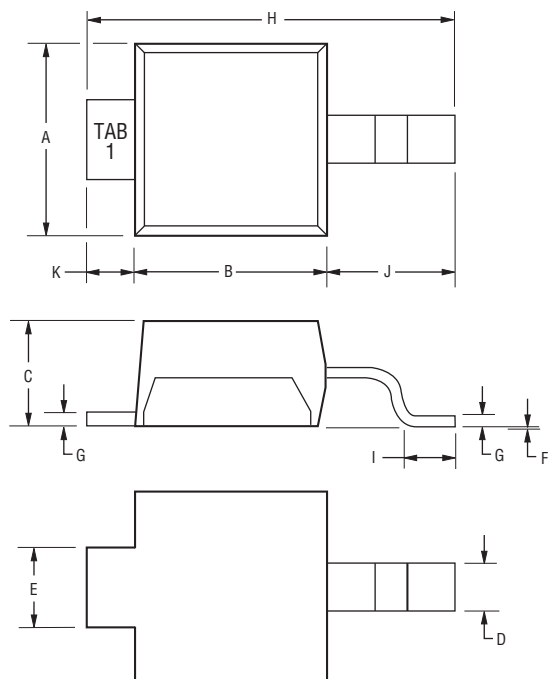
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CD216A-B120L~B140 MITE Chip Diode

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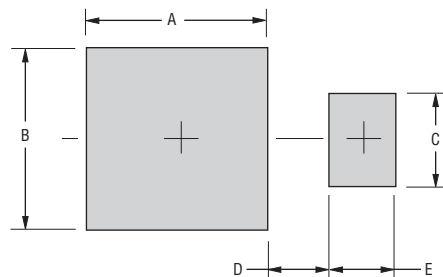
Product Dimensions



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)

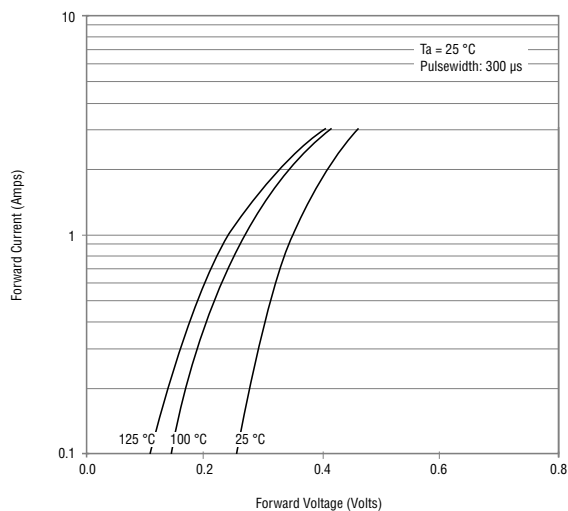
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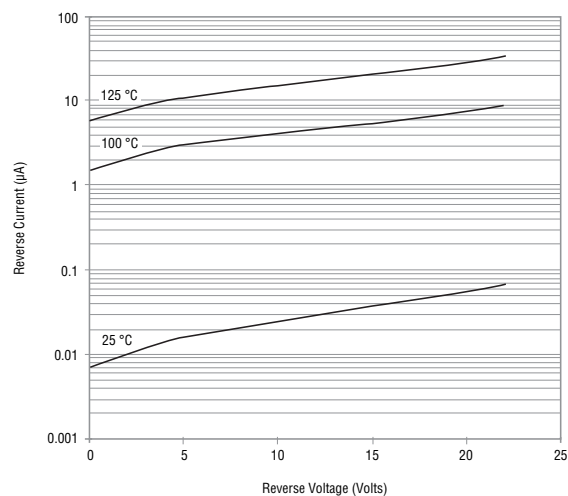
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Rating & Characteristic Curves: CD216A-B120L

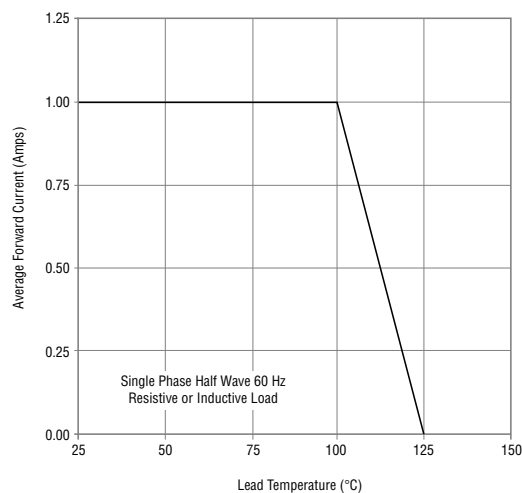
Forward Characteristics



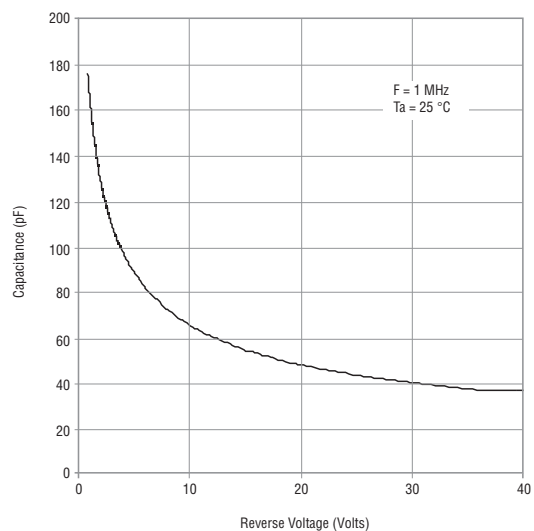
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



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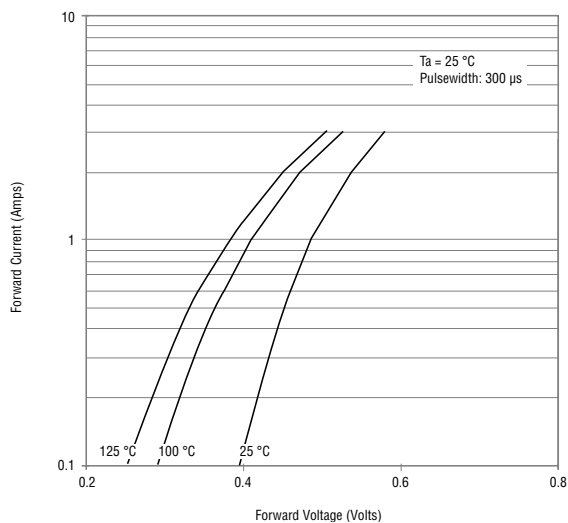
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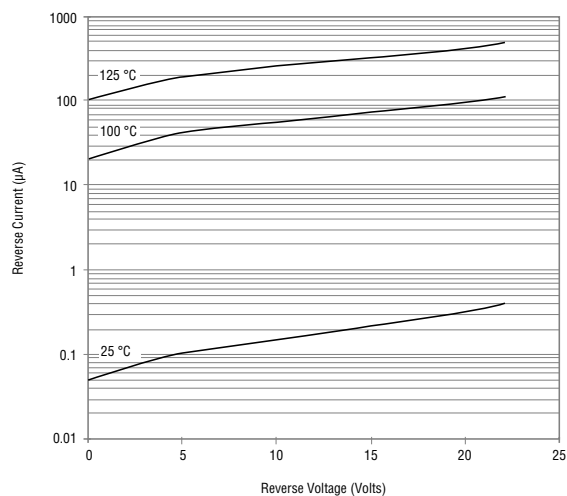
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Rating & Characteristic Curves: CD216A-B120R

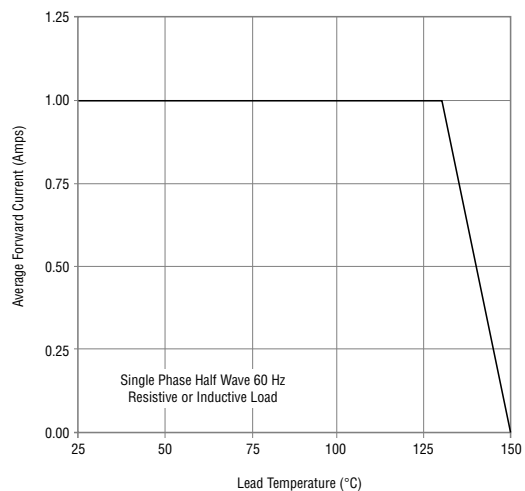
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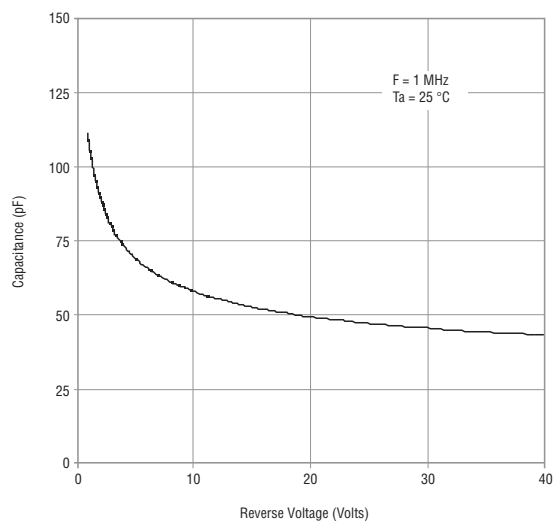
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



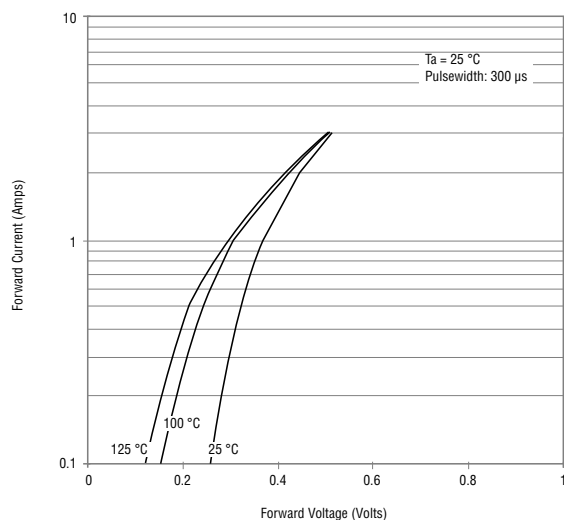
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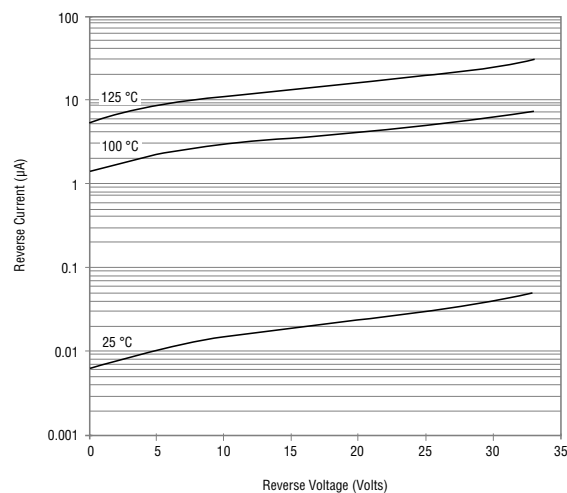
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Rating & Characteristic Curves: CD216A-B130L

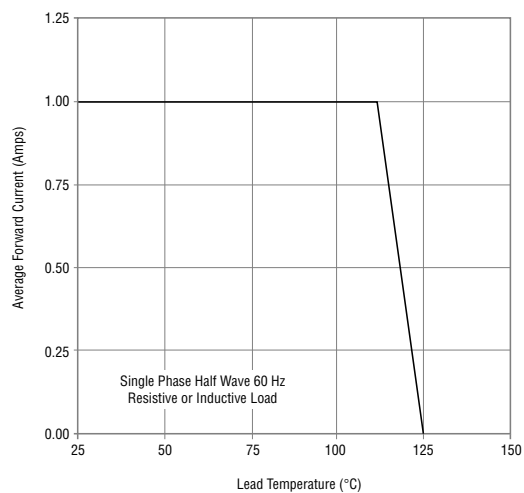
Forward Characteristics



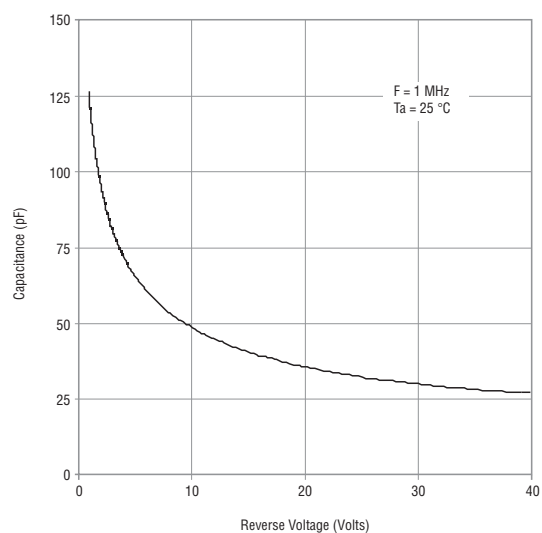
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



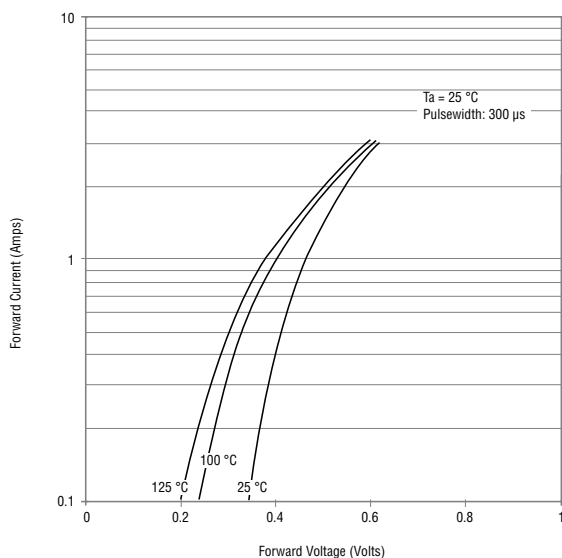
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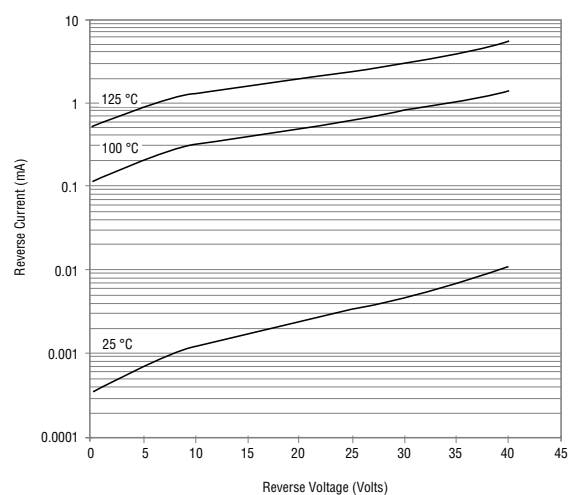
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Rating & Characteristic Curves: CD216A-B140

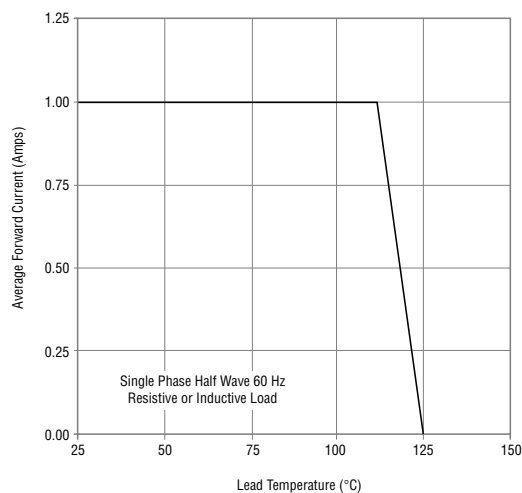
Forward Characteristics



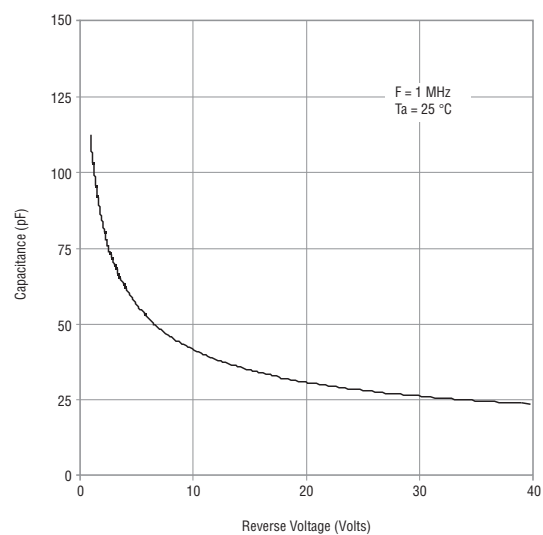
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



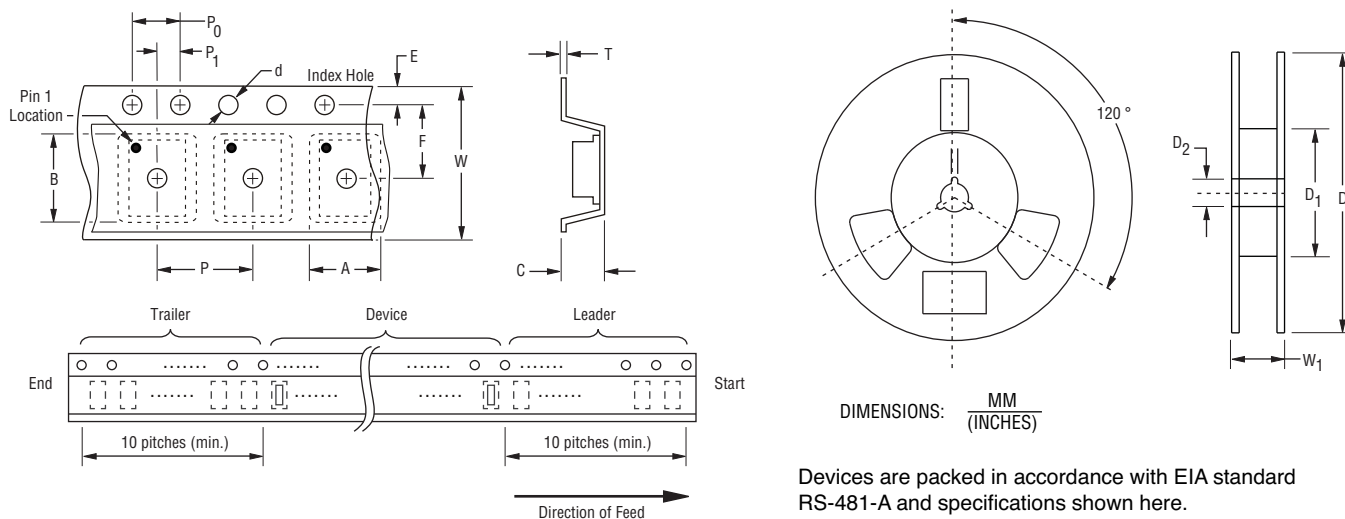
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Packaging Information

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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