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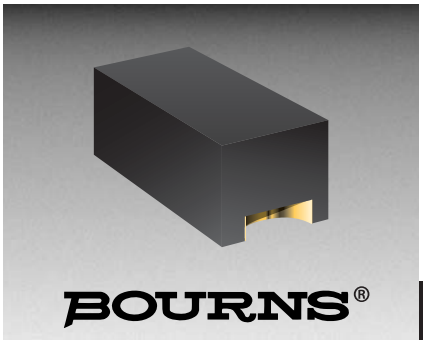
Chip-Dioden

BOURNS INC
Leading by design

02/2005



BOURNS®

Features

- Leadless
- Lead-free
- High speed

Applications

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

Switching Chip Diode Series - 0603 / 1005

General Information

The markets of portable communications, computing and video equipment are challenging the semiconductor industry to develop increasingly smaller electronic components.

Bourns offers small-signal high-speed Switching Diodes for switching digital signal applications, in compact chip package 0603 and 1005 size format, which offer PCB real estate savings and are considerably smaller than competitive parts. The Switching Diodes offer a forward current of 100 mA or 150 mA, a reverse voltage of 80 V or 75 V and also have a low leakage reverse current option. The diodes are lead-free with Cu/Ni/Au plated terminations and are compatible with lead-free manufacturing processes, conforming to many industry and government regulations on lead-free components.

Bourns® Chip Diodes conform to JEDEC standards, easy to handle on standard pick and place equipment and their flat configuration makes roll away much more difficult.

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

Parameter	Symbol	CDxxxx-S0180	CDxxxx-S01575	CDxxxx-S0180R	Unit
Forward Voltage (Max.)	V_F	1.00 (I_f = 100 mA)	1.00 (I_f = 50 mA)	1.00 (I_f = 100 mA)	V
Capacitance Between Terminals (Max.)	C_T	4 (f = 100 MHz, V_r = 1 V DC)			pF
Reverse Recovery Time (Max.)	t_{rr}	4 (V_r = 6V, I_f = 10 mA, R_L = 50 Ω)			nS
Reverse Current (Max.)	I_R	0.1 (V_r = 80 V)	2.5 (V_r = 75 V)	0.05 (V_r = 75 V)	µA

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

Parameter	Symbol	CDxxxx-S0180	CDxxxx-S01575	CDxxxx-S0180R	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	90	100	90	V
Reverse Voltage	V_R	80	75	80	V
Average Forward Current	I_o	100	150	100	mA
Forward Current, Surge Peak	I_{surge}	1*	4**	1*	A
Power Dissipation - CD0603 Power Dissipation - CD1005	PD	150 300	150 300	150 300	mW
Storage Temperature	T_{STG}	-40 to +125			°C
Junction Temperature	T_J	-40 to +125			°C

* Condition: 8.3 ms single half sine-wave superimposed on rate load (JEDEC method).
** Condition: 1.0 µs single half sine-wave superimposed on rate load (JEDEC method).

How To Order

CD 0603 - S 01 80 R

Common Code
Chip Diode

Package
- 0603
- 1005

Model
S = High Speed Switching

Average Forward Current (I_o) Code
01 = 100 mA
015 = 150 mA
(Code x 1000 mA = Average Forward Current)

Reverse Voltage (V_R) Code
80 = 80 V
75 = 75 V

Reverse Current Suffix
R = Low Leakage I_R (CDxxxx-S0180R)

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Switching Chip Diode Series - 0603 / 1005

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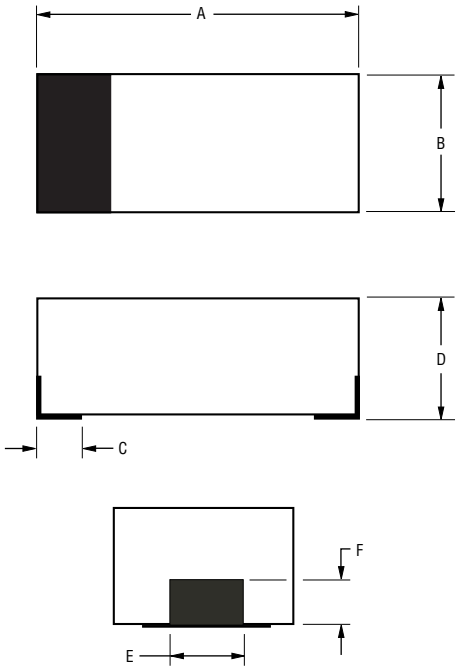
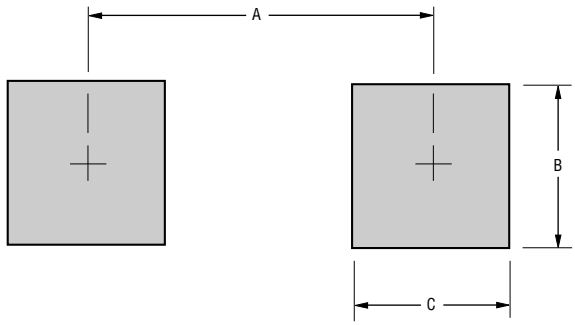
Product Dimensions



Dimension	0603	1005
A	1.60 - 1.80 (0.063 - 0.071)	2.40 - 2.60 (0.095 - 0.102)
B	0.80 - 1.00 (0.031 - 0.039)	1.10 - 1.30 (0.043 - 0.051)
C	0.25 (0.010) Typ.	0.35 (0.014) Typ.
D	0.70 - 0.85 (0.027 - 0.033)	0.70 - 0.90 (0.027 - 0.035)
E	0.35 (0.014) Typ.	0.35 (0.014) Typ.
F	0.30 (0.012) Typ.	0.30 (0.012) Typ.

DIMENSIONS: MM (INCHES)

Recommended Pad Layout



Dimension	0603	1005
A (Max.)	1.70 (0.067)	2.10 (0.082)
B (Min.)	0.80 (0.031)	1.20 (0.047)
C (Min.)	0.60 (0.024)	1.20 (0.047)

DIMENSIONS: MM (INCHES)

Physical Specifications

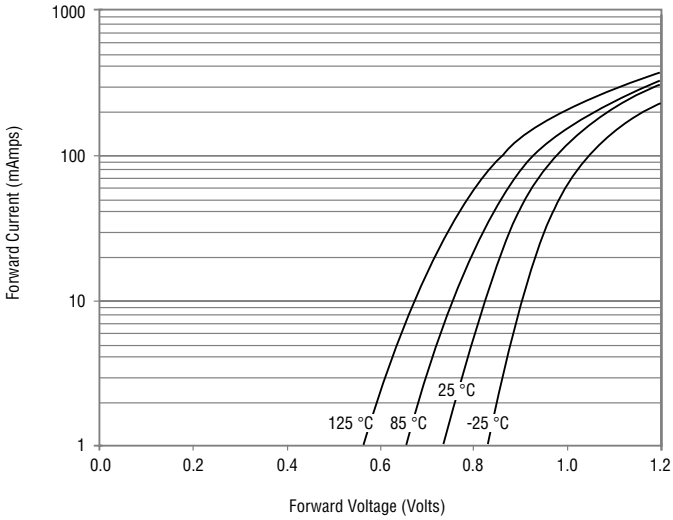
Case .....0603(1608) / 1005(2512) Molded plastic
Terminals .....Solder plated, solderable per MIL-STD-750, Method 2026
Polarity .....Indicated by cathode band
Mounting Position .....Any

Typical Part Marking

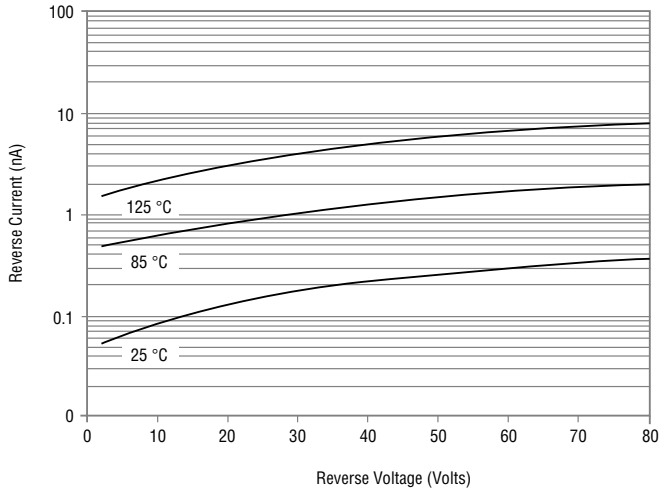
CDxxxx-S0180 .....S1
CDxxxx-S01575 .....S3
CDxxxx-S0180R S2

Rating and Characteristic Curves: CDxxxx-S0180

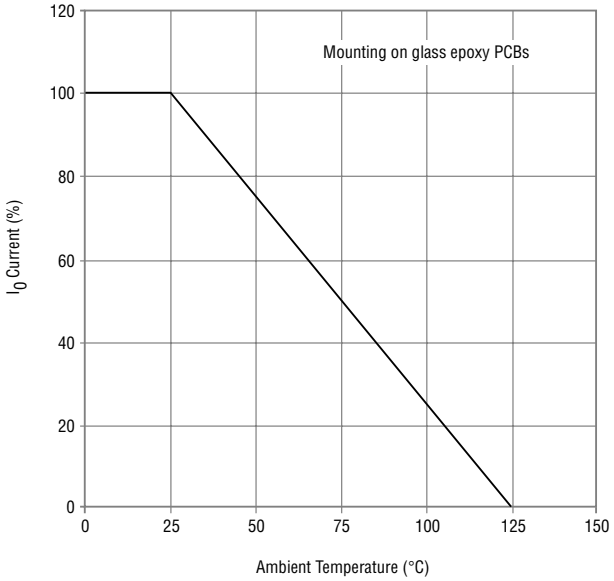
Forward Characteristics



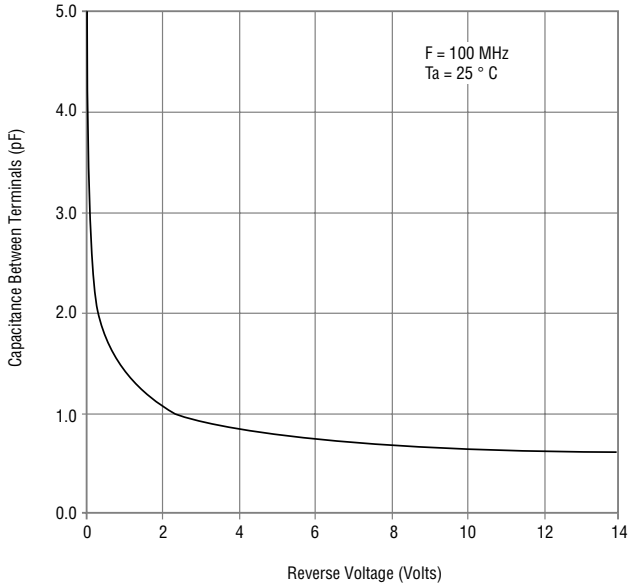
Reverse Characteristics



Derating Curve

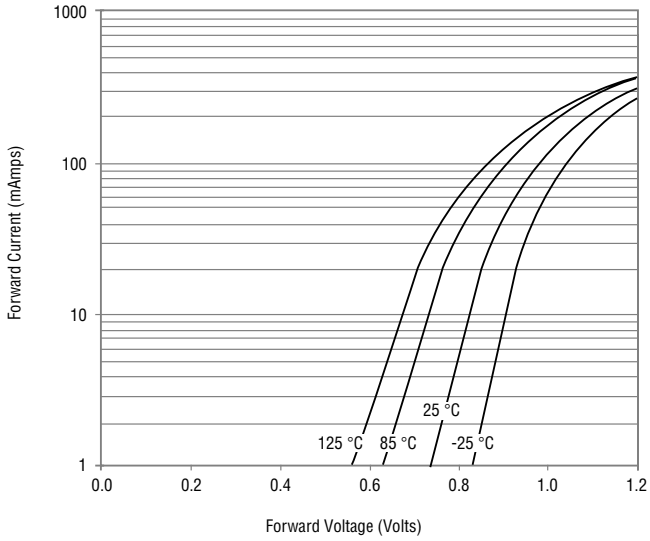


Capacitance Between Terminals

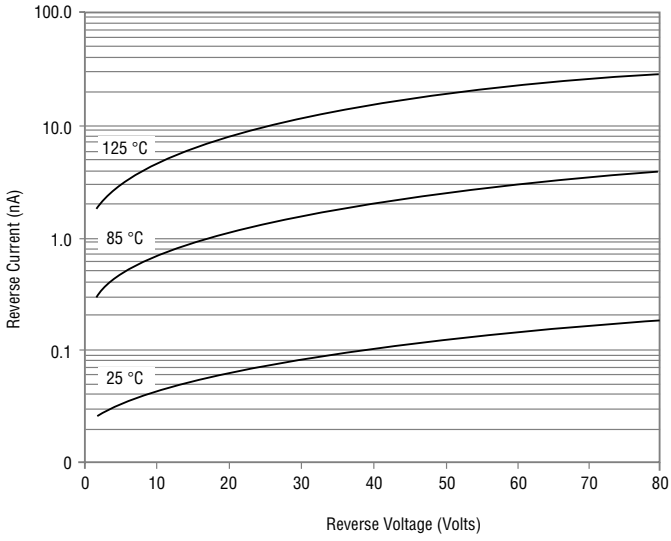


Rating and Characteristic Curves: CDxxxx-S01575

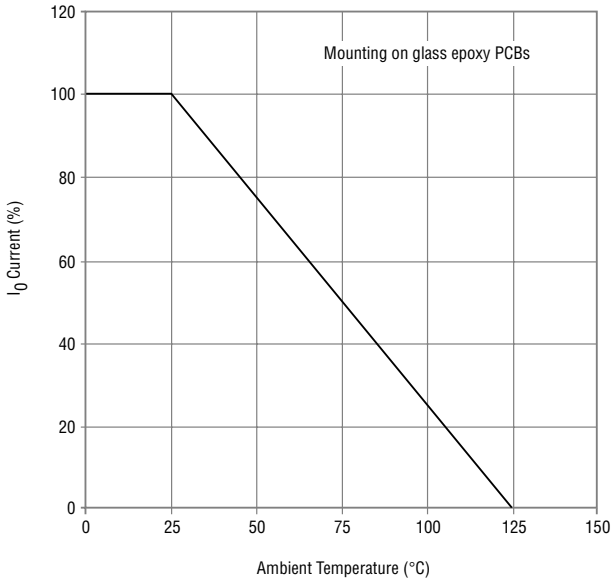
Forward Characteristics



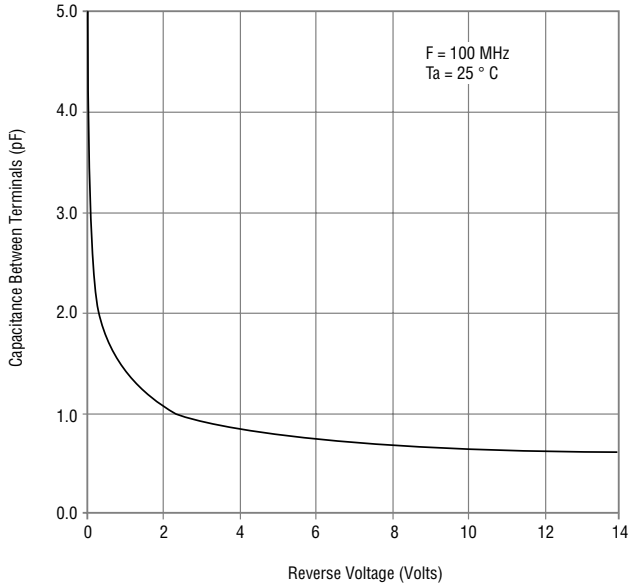
Reverse Characteristics



Derating Curve

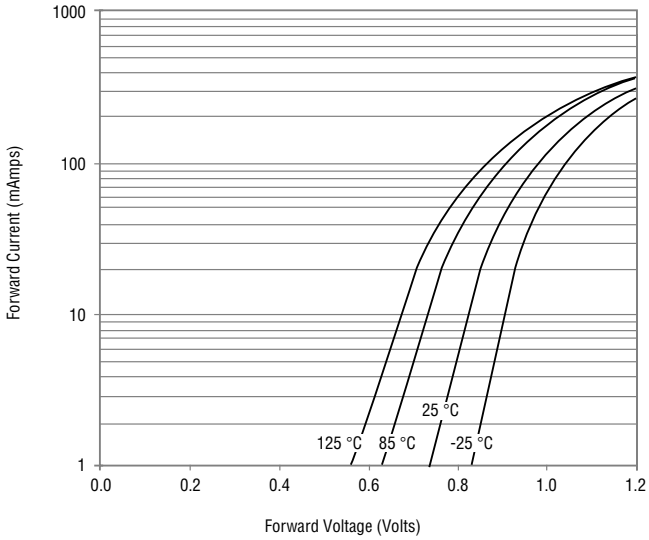


Capacitance Between Terminals

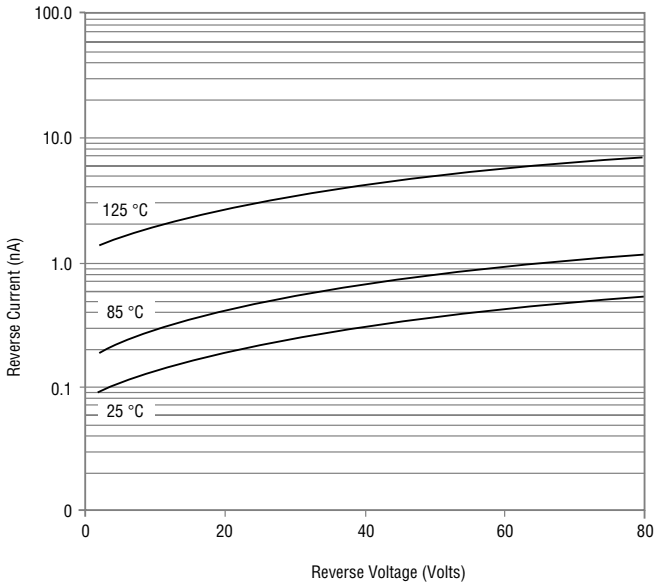


Rating and Characteristic Curves: CDxxxx-S0180R

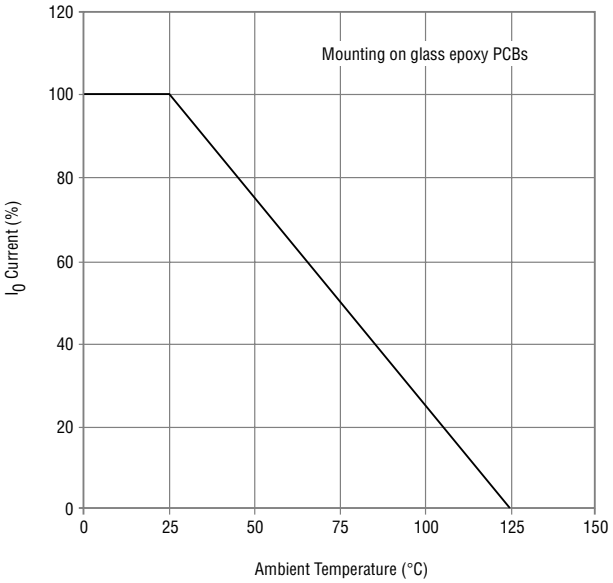
Forward Characteristics



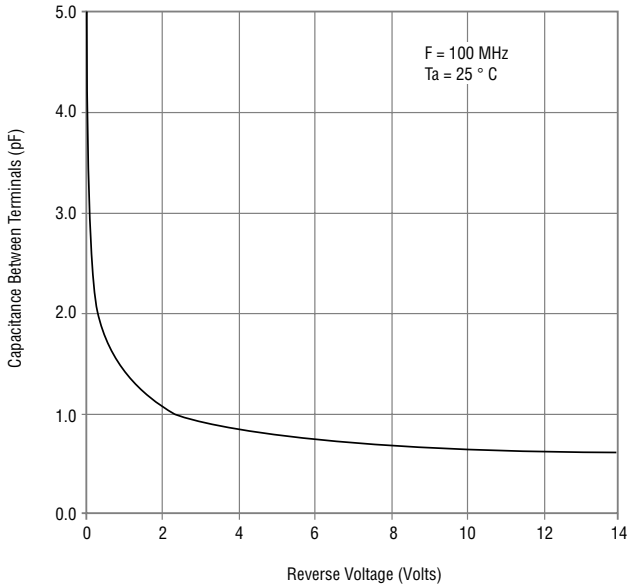
Reverse Characteristics



Derating Curve

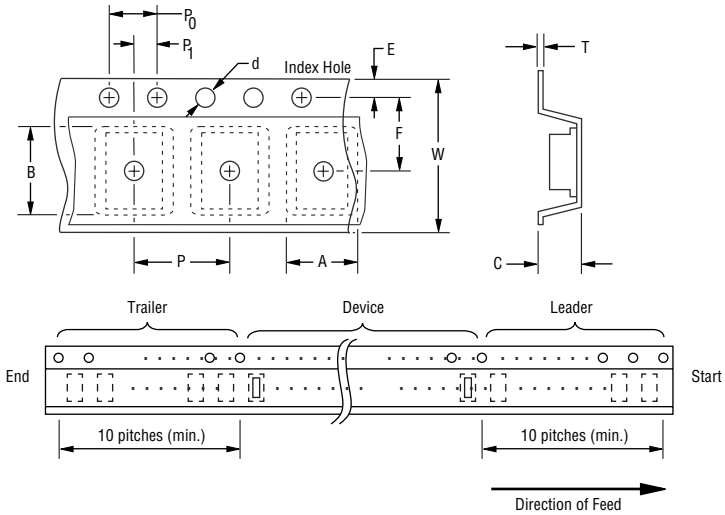


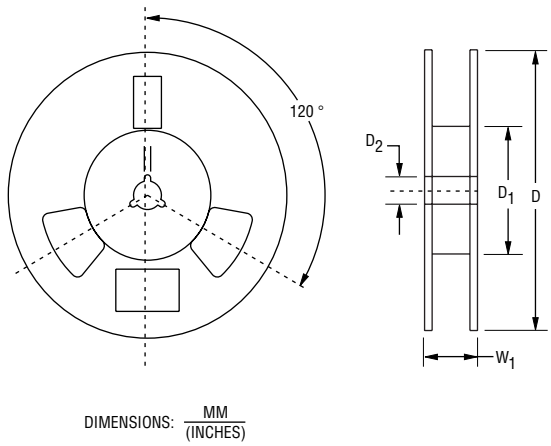
Capacitance Between Terminals



Packaging Information

The product will be dispensed in Tape and Reel format (see diagram below).





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

Devices are packed in accordance with EIA standard RS-481-A and specifications shown here.

Item	Symbol	0603	1005
Carrier Width	A	1.00 ± 0.10 (0.039 - 0.004)	1.55 ± 0.10 (0.061 - 0.004)
Carrier Length	B	1.85 ± 0.10 (0.073 - 0.004)	2.65 ± 0.10 (0.104 - 0.004)
Carrier Depth	C	1.00 ± 0.10 (0.039 - 0.004)	1.05 ± 0.10 (0.041 - 0.004)
Sprocket Hole	d	1.55 ± 0.05 (0.061 - 0.002)	1.55 ± 0.10 (0.061 - 0.004)
Reel Outside Diameter	D	178 (7.008)	178 (7.008)
Reel Inner Diameter	D_1	60.0 (2.362) MIN.	60.0 (2.362) MIN.
Feed Hole Diameter	D_2	13.0 ± 0.20 (0.512 - 0.008)	13.0 ± 0.20 (0.512 - 0.008)
Sprocket Hole Position	E	1.75 ± 0.10 (0.069 - 0.004)	1.75 ± 0.10 (0.069 - 0.004)
Punch Hole Position	F	3.50 ± 0.05 (0.138 - 0.002)	3.50 ± 0.05 (0.138 - 0.002)
Punch Hole Pitch	P	4.00 ± 0.10 (0.157 - 0.004)	4.00 ± 0.10 (0.157 - 0.004)
Sprocket Hole Pitch	P_0	4.00 ± 0.10 (0.157 - 0.004)	4.00 ± 0.10 (0.157 - 0.004)
Embossment Center	P_1	2.00 ± 0.05 (0.079 - 0.002)	2.00 ± 0.05 (0.079 - 0.002)
Overall Tape Thickness	T	0.20 ± 0.05 (0.008 - 0.002)	0.25 ± 0.05 (0.010 - 0.002)
Tape Width	W	8.00 ± 0.20 (0.315 - 0.008)	8.00 ± 0.20 (0.315 - 0.008)
Reel Width	W_1	13.5 (0.531) MAX.	13.5 (0.531) MAX.
Quantity per Reel	--	4,000	4,000

BOURNS®

Features

- Leadless
- Lead-free
- High speed

Applications

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

Switching Chip Diode Series - 0805 / 1206

General Information

The markets of portable communications, computing and video equipment are challenging the semiconductor industry to develop increasingly smaller electronic components.

Bourns offers small-signal high-speed Switching Diodes for switching digital signal applications, in compact chip package 0805 and 1206 size format, which offer PCB real estate savings and are considerably smaller than competitive parts. The Switching Diodes offer a forward current of 100 mA or 150 mA, a reverse voltage of 80 V or 75 V and also have a low leakage reverse current option. The diodes are lead-free with Cu/Ni/Au plated terminations and are compatible with lead-free manufacturing processes, conforming to many industry and government regulations on lead-free components.

Bourns® Chip Diodes conform to JEDEC standards, easy to handle on standard pick and place equipment and their flat configuration makes roll away much more difficult.

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

Parameter	Symbol	CDxxxx-S0180	CDxxxx-S01575	CDxxxx-S0180R	Unit
Forward Voltage (Max.)	V_F	1.00 (I_f = 100 mA)	1.00 (I_f = 50 mA)	1.00 (I_f = 100 mA)	V
Capacitance Between Terminals (Max.)	C_T	3 (f = 100 MHz, V_r = 1 V DC)			pF
Reverse Recovery Time (Max.)	t_{rr}	4 (V_r = 6V, I_f = 10 mA, R_L = 50 Ω)			nS
Reverse Current (Max.)	I_R	0.1 (V_r = 80 V)	2.5 (V_r = 75 V)	0.05 (V_r = 75 V)	µA

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

Parameter	Symbol	CDxxxx-S0180	CDxxxx-S01575	CDxxxx-S0180R	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	90	100	90	V
Reverse Voltage	V_R	80	75	80	V
Average Forward Current	I_o	100	150	100	mA
Forward Current, Surge Peak	I_{surge}	1*	4**	1*	A
Power Dissipation	PD	300	350	300	mW
Storage Temperature	T_{STG}	-55 to +125			°C
Junction Temperature	T_J	-55 to +125			°C

* Condition: 8.3 ms single half sine-wave superimposed on rate load (JEDEC method).
** Condition: 1.0 µs single half sine-wave superimposed on rate load (JEDEC method).

How To Order

CD 0805 - S 01 80 R

Common Code
Chip Diode

Package
- 0805
- 1206

Model
S = High Speed Switching

Average Forward Current (I_o) Code
01 = 100 mA
015 = 150 mA
(Code x 1000 mA = Average Forward Current)

Reverse Voltage (V_R) Code
80 = 80 V
75 = 75 V

Reverse Current Suffix
R = Low Leakage I_R (CDxxxx-S0180R)

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Switching Chip Diode Series - 0805 / 1206

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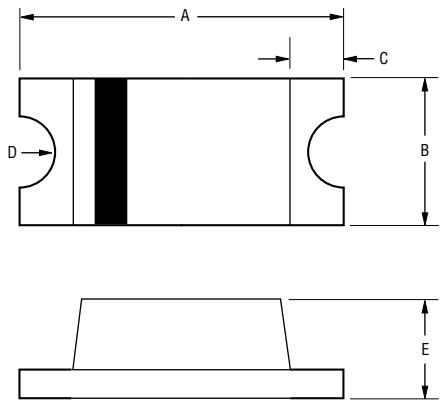
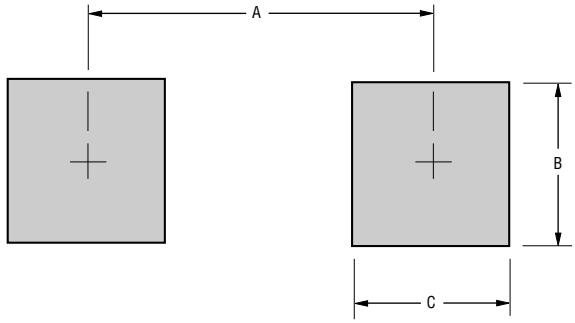
Product Dimensions



Dimension	0805	1206
A	2.00 - 2.20 (0.079 - 0.087)	3.00 - 3.20 (0.118 - 0.126)
B	1.20 - 1.40 (0.047 - 0.055)	1.40 - 1.60 (0.055 - 0.063)
C	0.40 (0.016) Typ.	0.50 (0.020) Typ.
D	0.20 (0.008) R Typ.	0.25 (0.010) R Typ.
E	0.90 - 1.10 (0.035 - 0.043)	0.90 - 1.10 (0.035 - 0.043)

DIMENSIONS: MM (INCHES)

Recommended Pad Layout



Dimension	0805	1206
A (Max.)	2.10 (0.082)	3.00 (0.118)
B (Min.)	1.20 (0.047)	1.60 (0.063)
C (Min.)	1.20 (0.047)	1.40 (0.055)

DIMENSIONS: MM (INCHES)

Physical Specifications

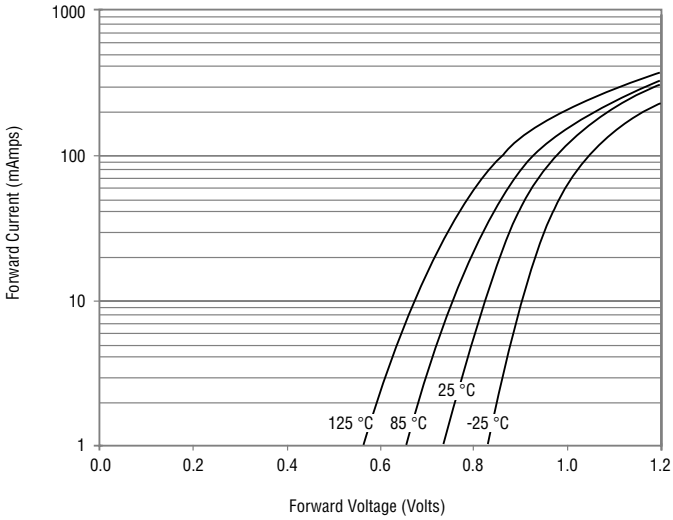
Case .....0805(2012) / 1206(3216) Molded plastic
Terminals .....Solder plated, solderable per MIL-STD-750, Method 2026
Polarity .....Indicated by cathode band
Mounting Position .....Any

Typical Part Marking

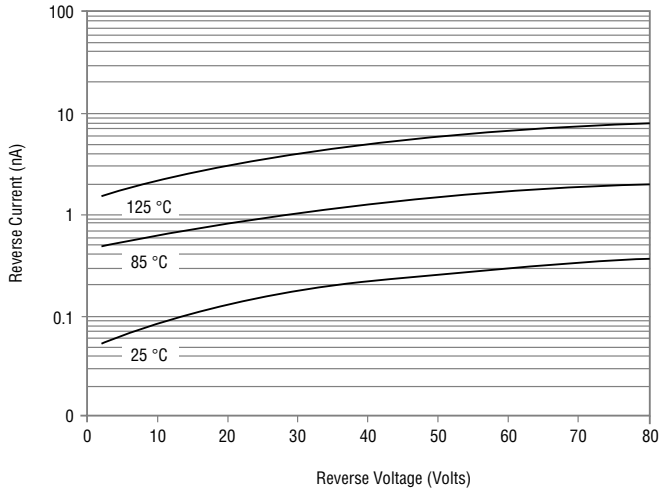
CDxxxx-S0180 .....S1
CDxxxx-S01575 .....S3
CDxxxx-S0180R S2

Rating and Characteristic Curves: CDxxxx-S0180

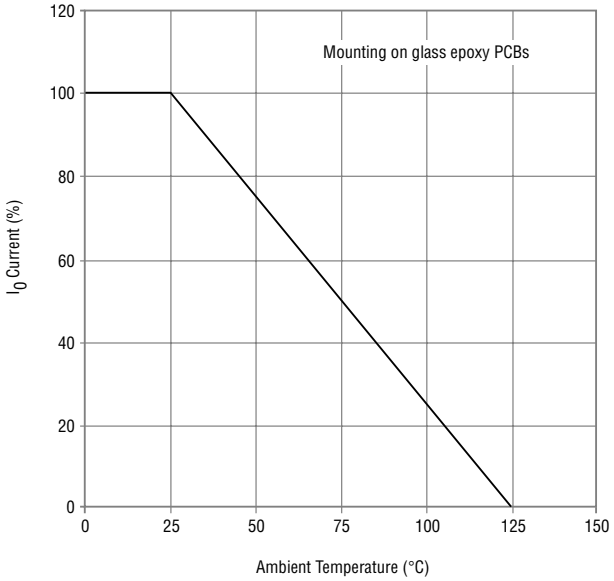
Forward Characteristics



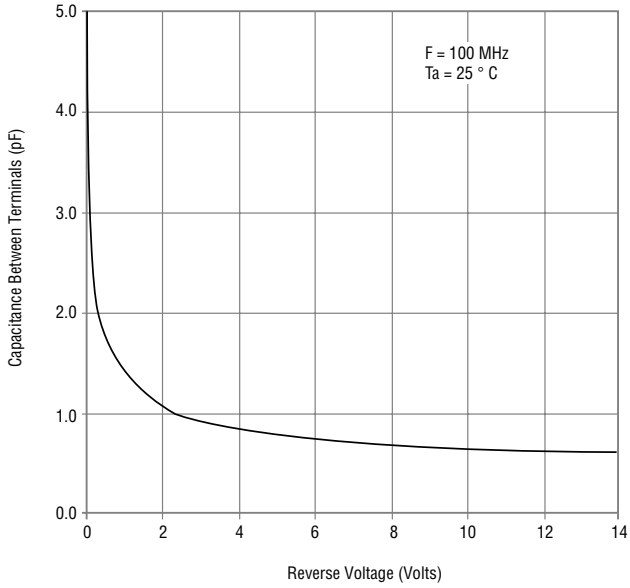
Reverse Characteristics



Derating Curve

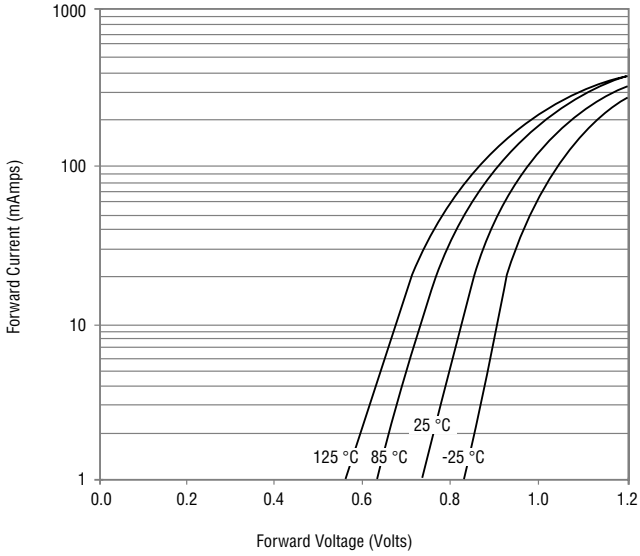


Capacitance Between Terminals

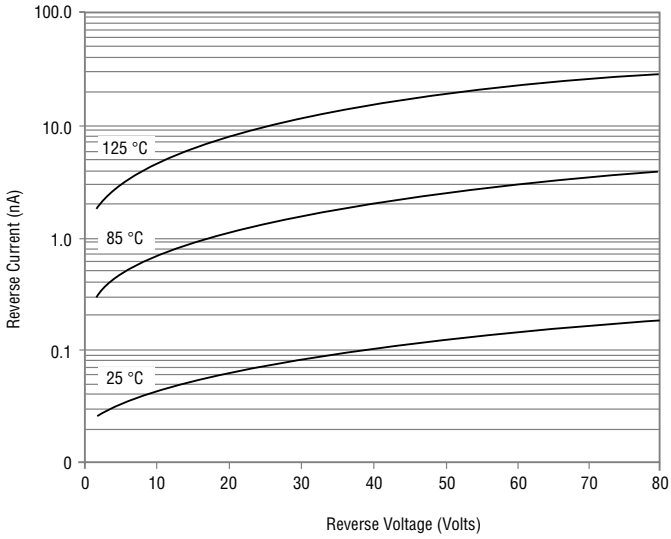


Rating and Characteristic Curves: CDxxxx-S01575

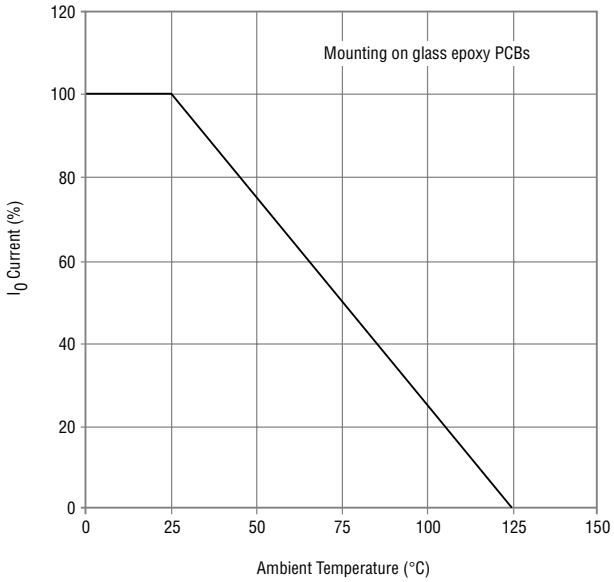
Forward Characteristics



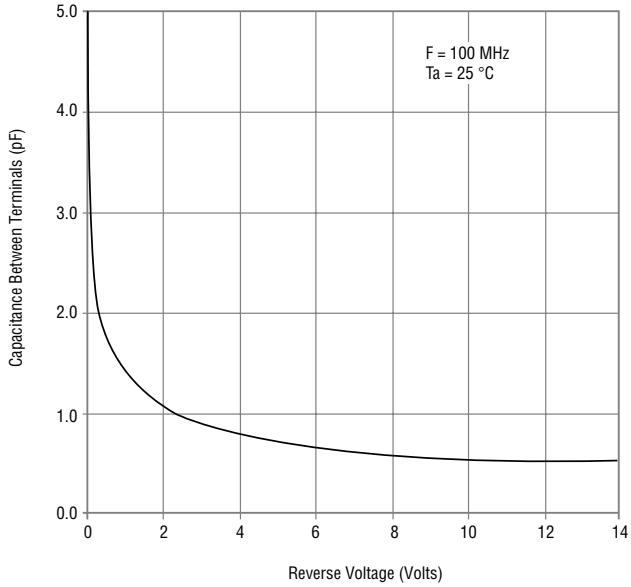
Reverse Characteristics



Derating Curve

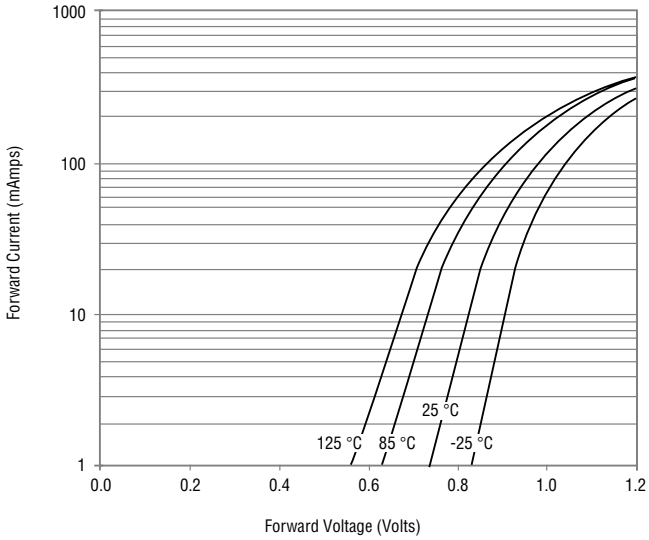


Capacitance Between Terminals

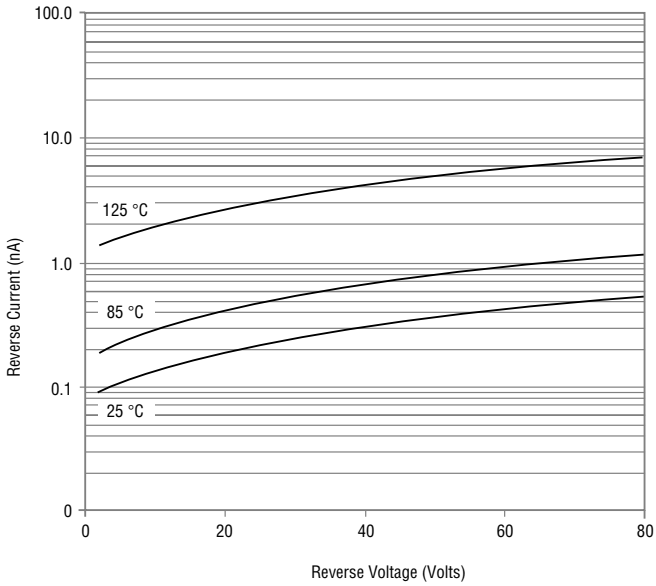


Rating and Characteristic Curves: CDxxxx-S0180R

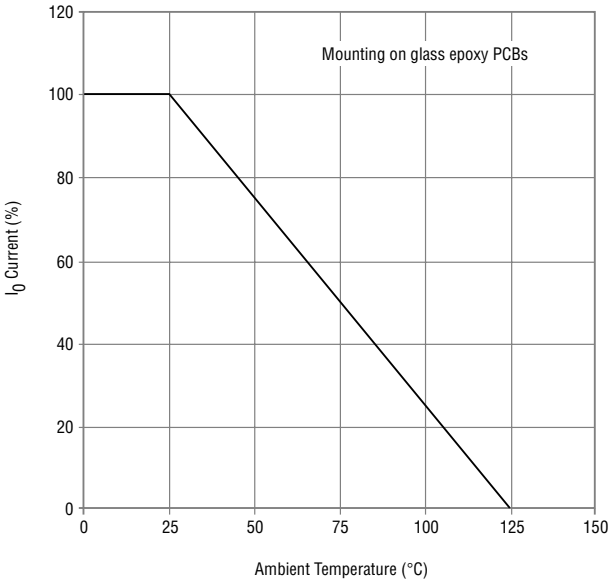
Forward Characteristics



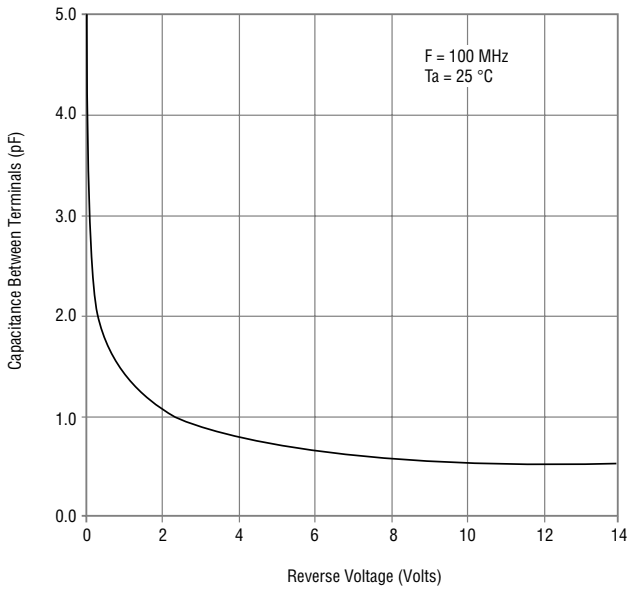
Reverse Characteristics



Derating Curve

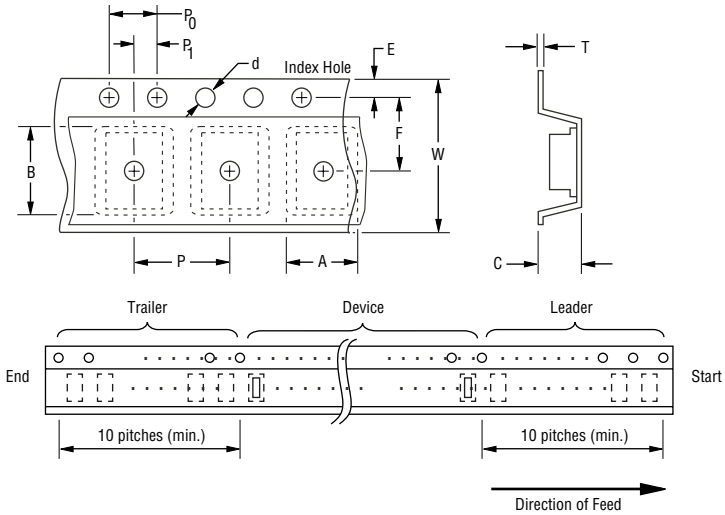


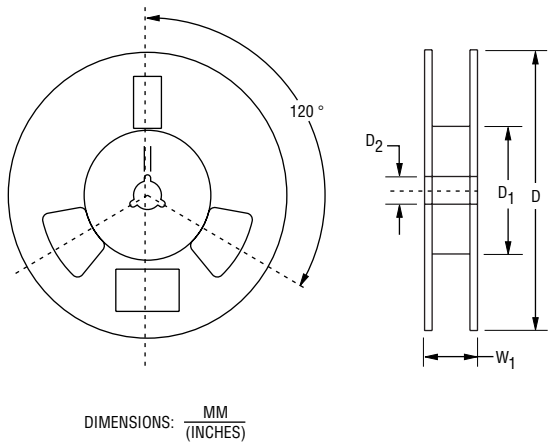
Capacitance Between Terminals



Packaging Information

The product will be dispensed in Tape and Reel format (see diagram below).

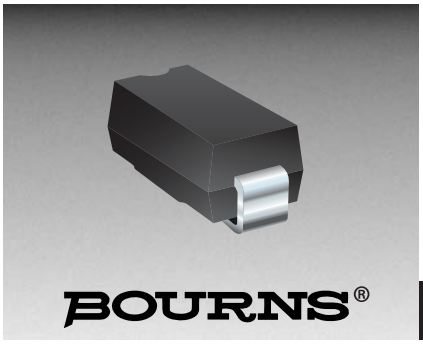




DIMENSIONS: MM / (INCHES)

Devices are packed in accordance with EIA standard RS-481-A and specifications shown here.

Item	Symbol	0805	1206
Carrier Width	A	1.55 ± 0.10 (0.061 - 0.004)	1.70 ± 0.10 (0.067 - 0.004)
Carrier Length	B	2.30 ± 0.10 (0.091 - 0.004)	3.40 ± 0.10 (0.134 - 0.004)
Carrier Depth	C	1.25 ± 0.10 (0.049 - 0.004)	1.25 ± 0.10 (0.049 - 0.004)
Sprocket Hole	d	1.55 ± 0.05 (0.061 - 0.002)	1.55 ± 0.10 (0.061 - 0.004)
Reel Outside Diameter	D	178 (7.008)	178 (7.008)
Reel Inner Diameter	D_1	60.0 (2.362) MIN.	60.0 (2.362) MIN.
Feed Hole Diameter	D_2	13.0 ± 0.20 (0.512 - 0.008)	13.0 ± 0.20 (0.512 - 0.008)
Sprocket Hole Position	E	1.75 ± 0.10 (0.069 - 0.004)	1.75 ± 0.10 (0.069 - 0.004)
Punch Hole Position	F	3.50 ± 0.05 (0.138 - 0.002)	3.50 ± 0.05 (0.138 - 0.002)
Punch Hole Pitch	P	4.00 ± 0.10 (0.157 - 0.004)	4.00 ± 0.10 (0.157 - 0.004)
Sprocket Hole Pitch	P_0	4.00 ± 0.10 (0.157 - 0.004)	4.00 ± 0.10 (0.157 - 0.004)
Embossment Center	P_1	2.00 ± 0.05 (0.079 - 0.002)	2.00 ± 0.05 (0.079 - 0.002)
Overall Tape Thickness	T	0.25 ± 0.05 (0.010 - 0.002)	0.20 ± 0.05 (0.008 - 0.002)
Tape Width	W	8.00 ± 0.20 (0.315 - 0.008)	8.00 ± 0.20 (0.315 - 0.008)
Reel Width	W_1	13.5 (0.531) MAX.	13.5 (0.531) MAX.
Quantity per Reel	--	3,000	3,000



BOURNS®

Features

- SMA package
- Surface mount
- Very low forward voltage drop

CD214A-B120 ~ B1100 Schottky Barrier Rectifier 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 chip package DO-214AC (SMA) size format, which offer PCB real estate savings and are considerably smaller than competitive parts. The Schottky Rectifier Diodes offer a forward current of 1 A with a choice of repetitive peak reverse voltage of 20 V up to 100 V.

Bourns® Chip Diodes conform to JEDEC standards, easy to handle on standard pick and place equipment and their flat configuration makes roll away much more difficult.

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

Parameter	Symbol	CD214-										Unit
		B120	B130	B130L	B140	B150	B160	B170	B180	B190	B1100	
Forward Voltage (Max.) (I_f = 1 A)	V_F	0.5	0.5	0.41	0.5	0.7	0.7	0.79	0.79	0.79	0.79	V
Typical Junction Capacitance*	C_T	110	110	100	110	110	110	30	30	30	30	pF
Reverse Current (Max.) at Rated V_R)	I_R	500	500	1000	500	500	500	500	500	500	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	CD214-										Unit
		B120	B130	B130L	B140	B150	B160	B170	B180	B190	B1100	
Repetitive Peak Reverse Voltage	V_{RRM}	20	30	30	40	50	60	70	80	90	100	V
Reverse Voltage	V_R	20	30	30	40	50	60	70	80	90	100	V
Maximum RMS Voltage	V_{RMS}	14	21	21	28	35	42	49	56	63	70	V
Avg. Forward Current	I_O	1										A
Forward Current, Surge Peak (60 Hz, 1 cycle)	I_{surge}	30	30	25	30	30	30	30	30	30	30	A
Typical Thermal Resistance**	$R_{\theta JL}$	20	20	35	20	20	20	25	25	25	25	°C/W
Storage Temperature	T_{STG}	-55 to +150										°C
Junction Temperature	T_J	-55 to +125										°C

** Thermal resistance junction to lead.

How To Order

CD 214A - B 1 30 L

- Common Code: Chip Diode
- Package: • 214A = SMA/DO-214AC
- Model: B = Schottky Barrier Series
- Average Forward Current (I_O) Code: 1 = 1 A (Code x 1000 mA = Average Forward Current)
- Reverse Voltage (V_R) Code: 30 = 30 V; 40 = 40 V; 100 = 100 V
- Forward Voltage Suffix: L = Low Forward Voltage V_f (CD214-B130L)

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CD214A-B120 ~ B1100 Schottky Barrier Rectifier Chip Diode

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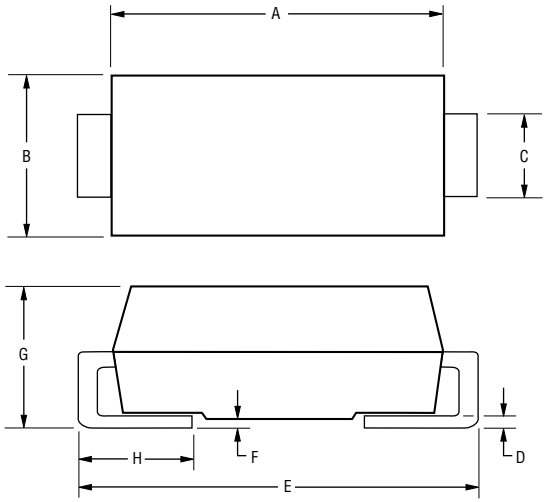
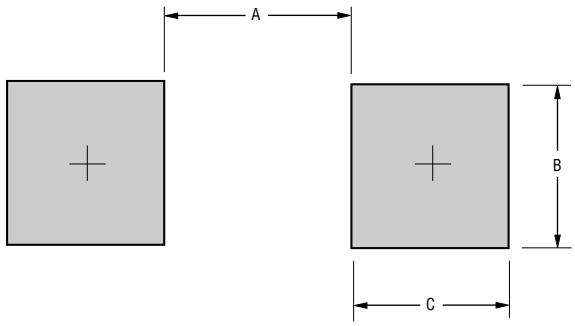
Product Dimensions



Dimension	SMA (DO-214AC)
A	4.06 - 4.57 (0.160 - 0.180)
B	2.29 - 2.92 (0.090 - 0.115)
C	1.27 - 1.63 (0.050 - 0.064)
D	0.15 - 0.31 (0.006 - 0.110)
E	4.83 - 5.59 (0.190 - 0.220)
F	0.05 - 0.20 (0.002 - 0.008)
G	2.01 - 2.62 (0.080 - 0.103)
H	0.76 - 1.52 (0.030 - 0.060)

DIMENSIONS: MM / (INCHES)

Recommended Pad Layout



Dimension	SMA (DO-214AC)
A (Max.)	2.69 (0.106)
B (Min.)	2.10 (0.083)
C (Min.)	1.27 (0.050)

DIMENSIONS: MM / (INCHES)

Physical Specifications

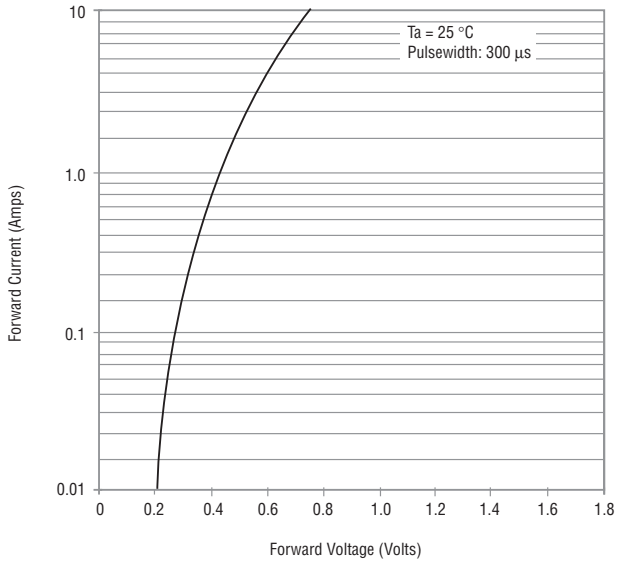
Case .....Molded plastic
Polarity .....Indicated by cathode band
Weight .....0.002 ounces / 0.064 grams

Typical Part Marking

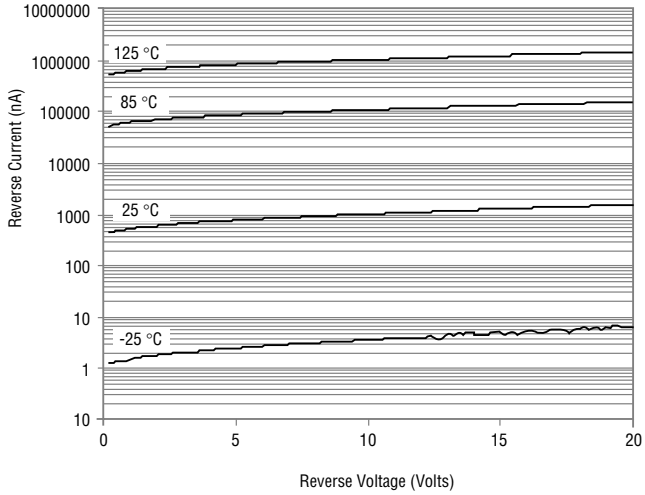
CD214A-B120 ..... B 120
CD214A-B130 ..... B 130
CD214A-B130L ..... B 130L
CD214A-B140 ..... B 140
CD214A-B150 ..... B 150
CD214A-B160 ..... B 160
CD214A-B170 ..... B 170
CD214A-B180 ..... B 180
CD214A-B190 ..... B 190
CD214A-B1100 ..... B 1100

Rating and Characteristic Curves: CD214A-B120

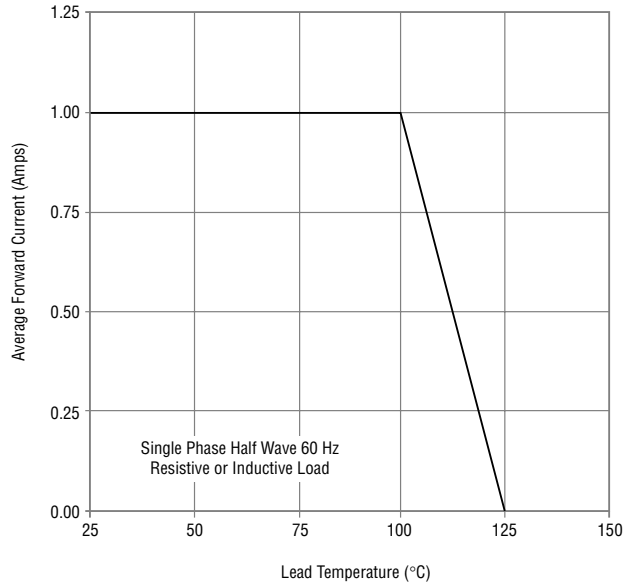
Forward Characteristics



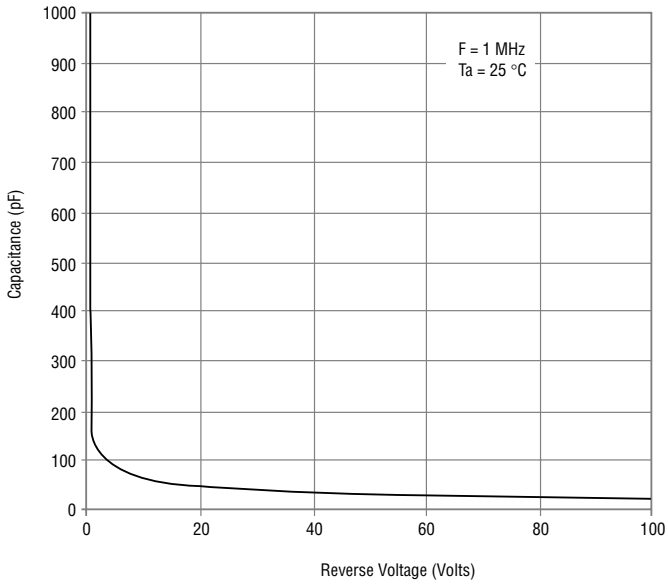
Reverse Characteristics



Derating Curve

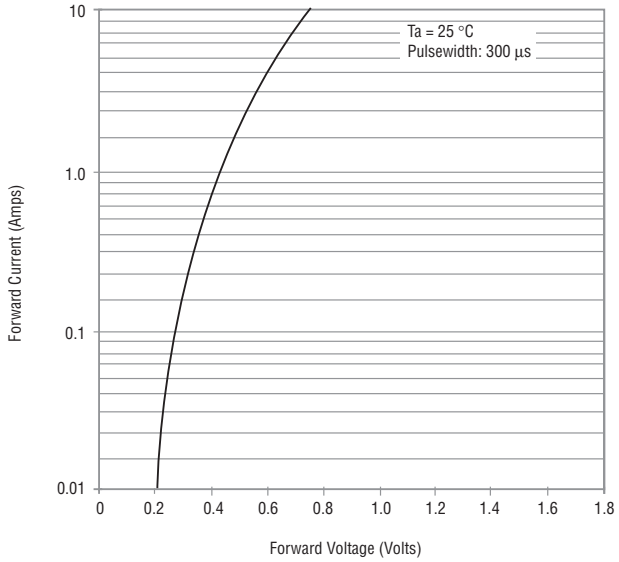


Capacitance Between Terminals

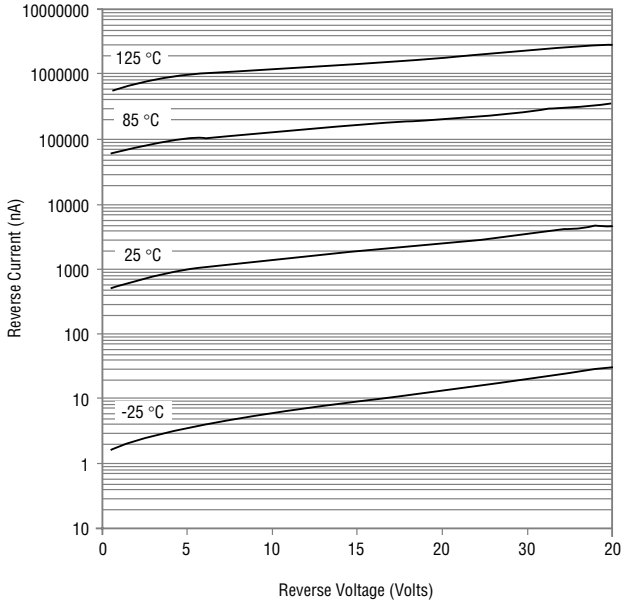


Rating and Characteristic Curves: CD214A-B130

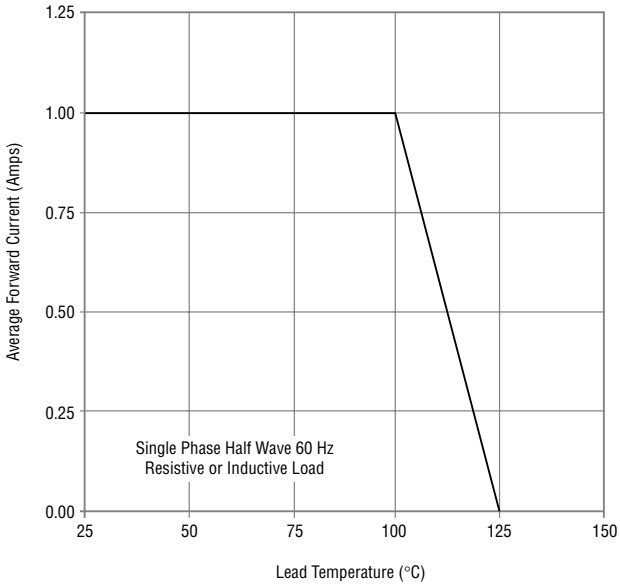
Forward Characteristics



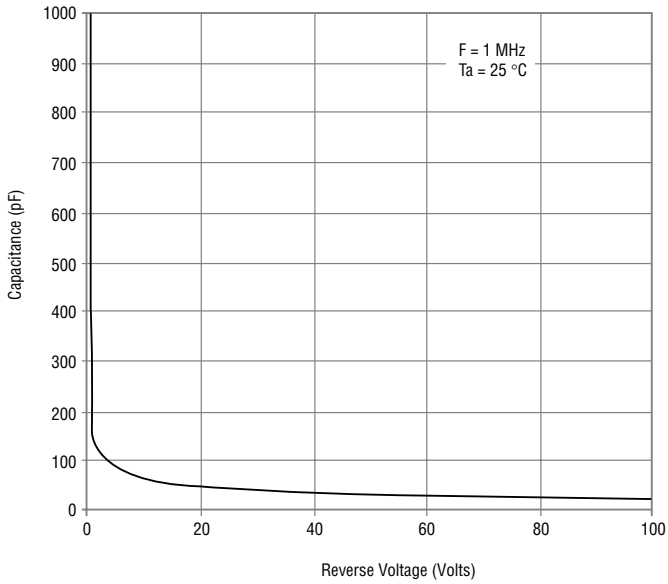
Reverse Characteristics



Derating Curve

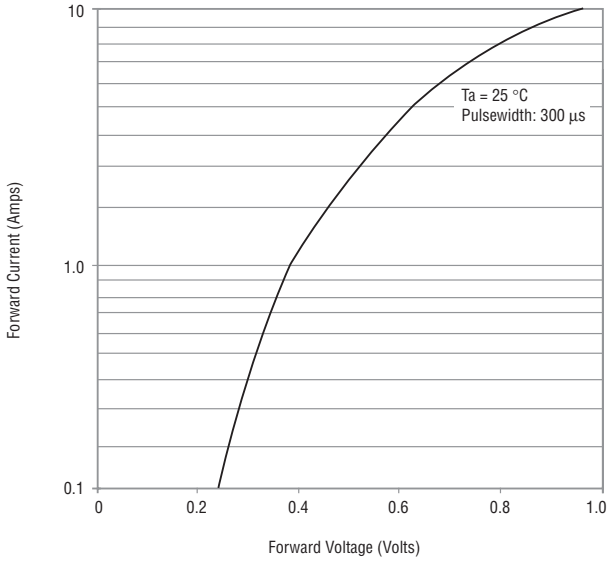


Capacitance Between Terminals

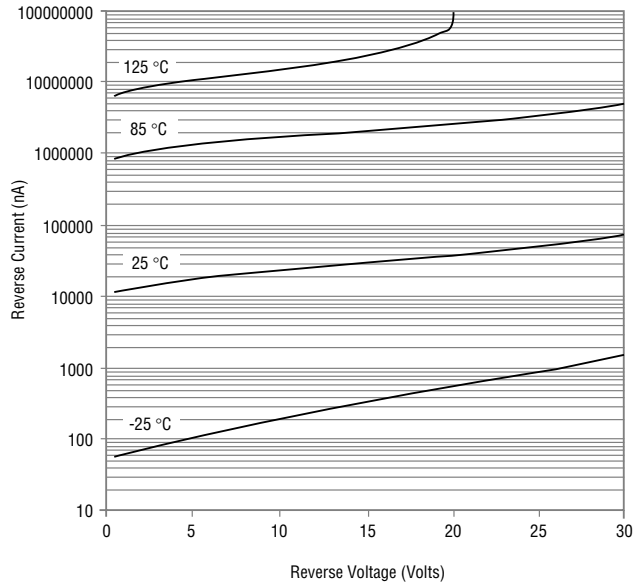


Rating and Characteristic Curves: CD214A-B130L

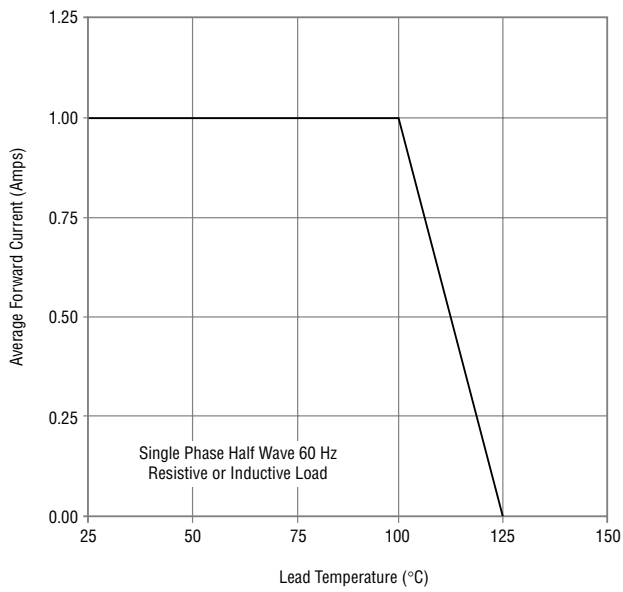
Forward Characteristics



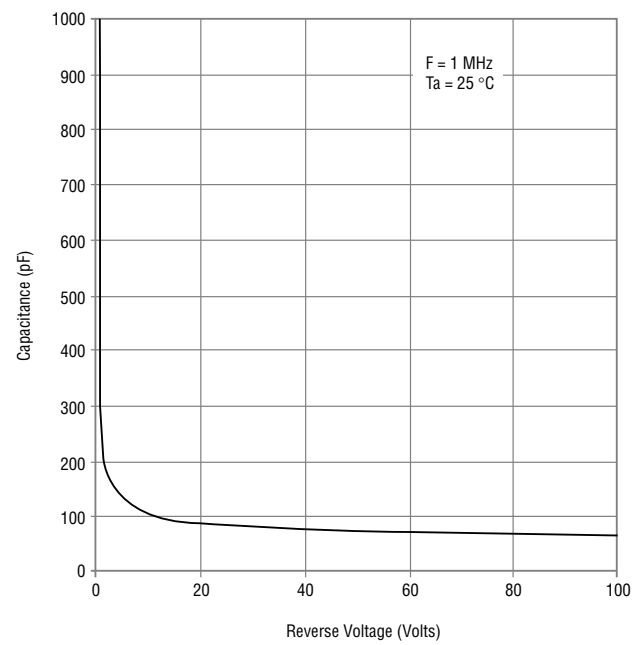
Reverse Characteristics



Derating Curve

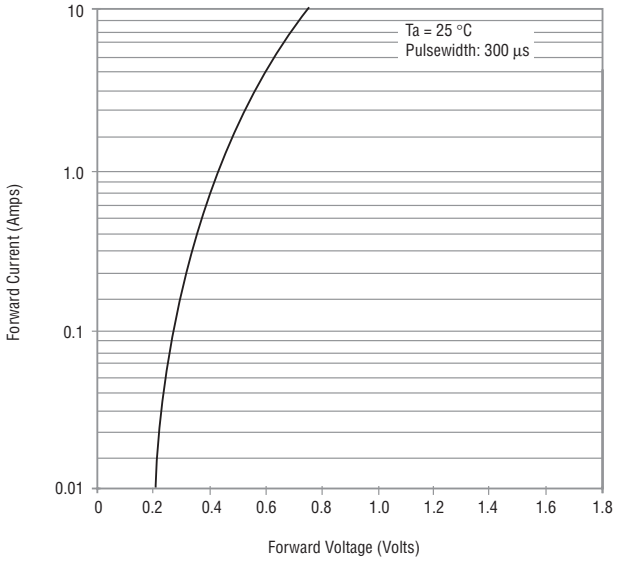


Capacitance Between Terminals

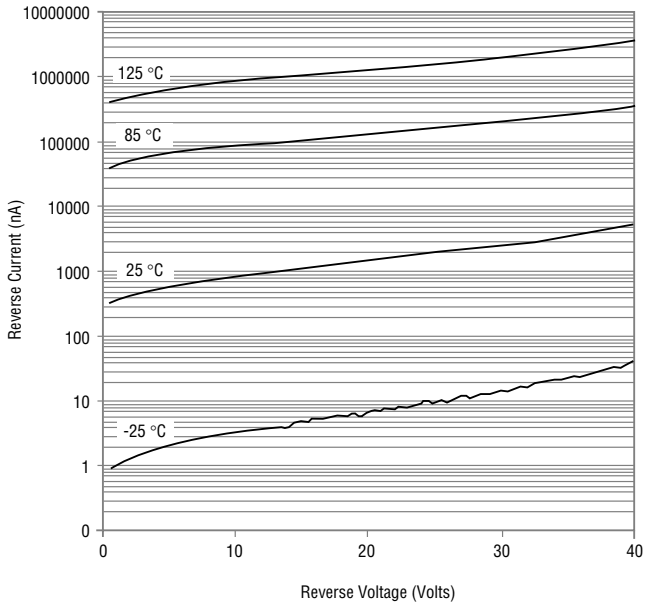


Rating and Characteristic Curves: CD214A-B140

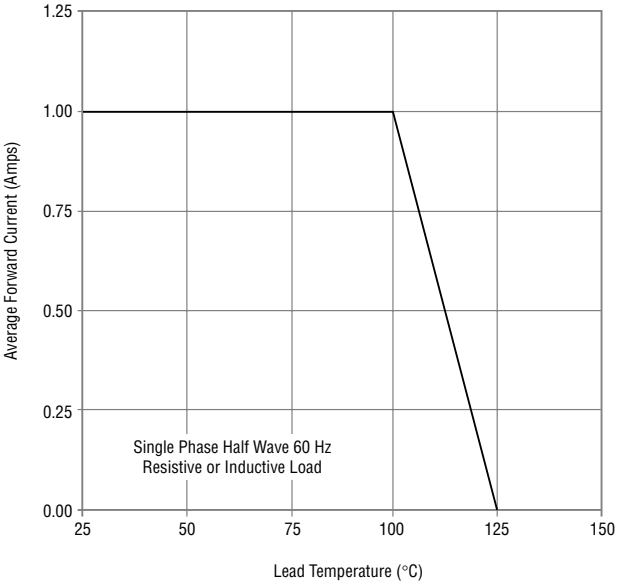
Forward Characteristics



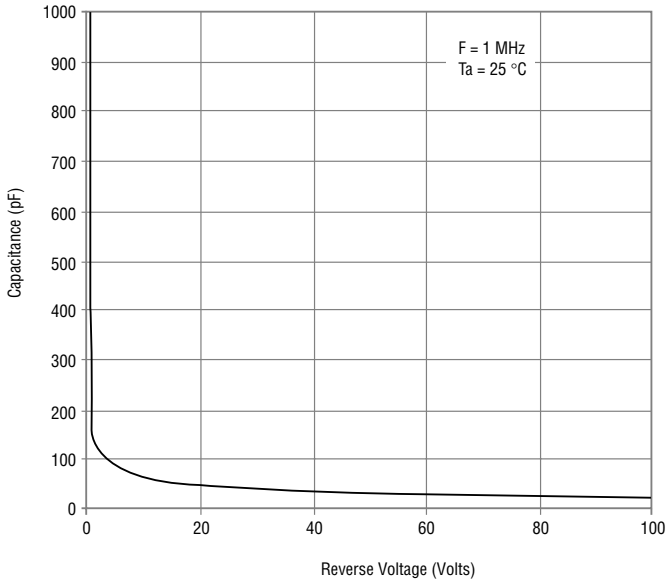
Reverse Characteristics



Derating Curve

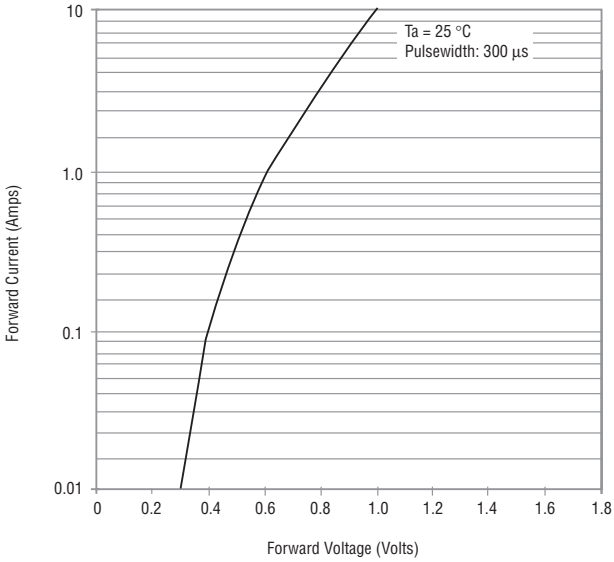


Capacitance Between Terminals

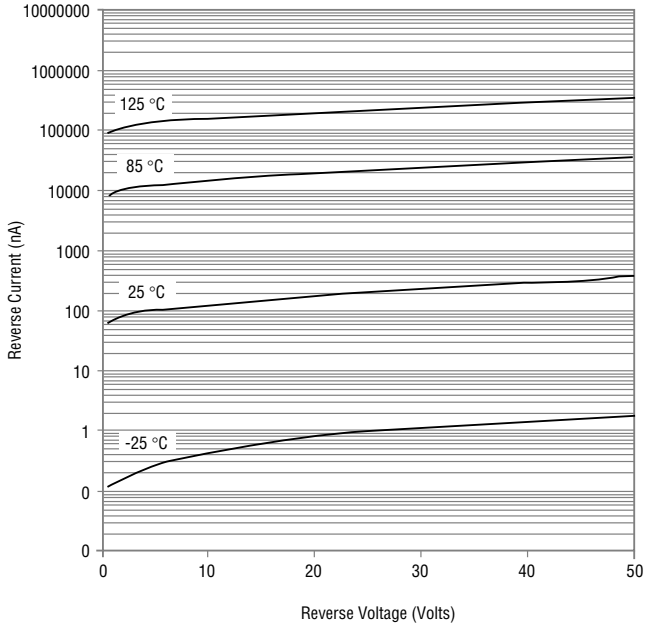


Rating and Characteristic Curves: CD214A-B150

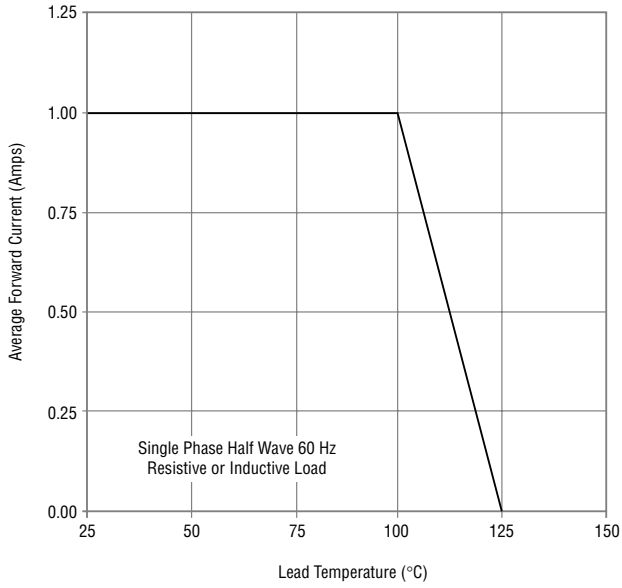
Forward Characteristics



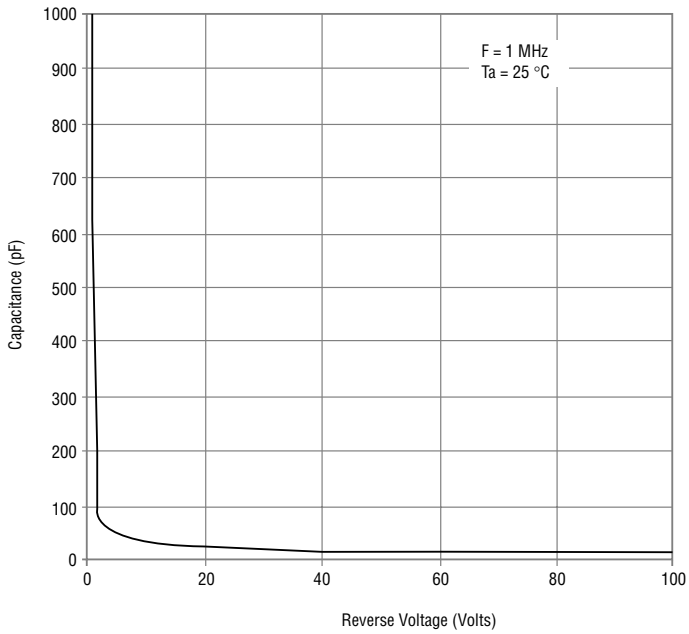
Reverse Characteristics



Derating Curve

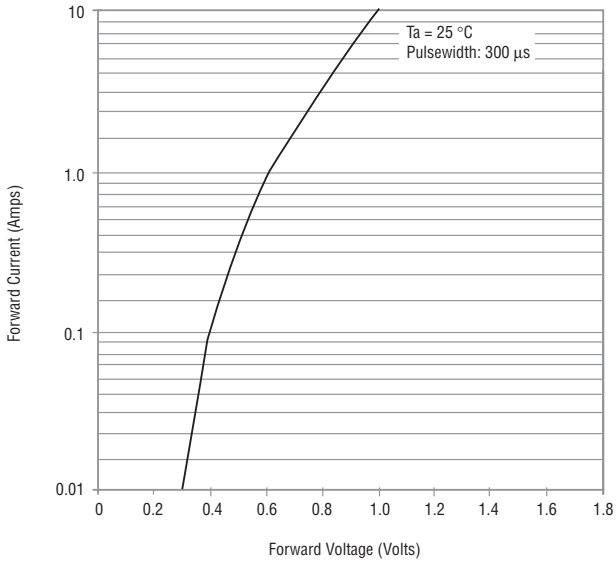


Capacitance Between Terminals

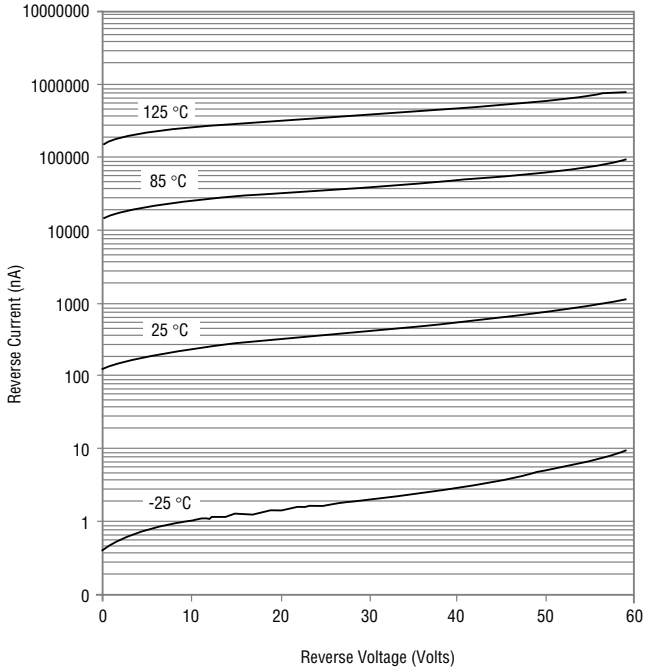


Rating and Characteristic Curves: CD214A-B160

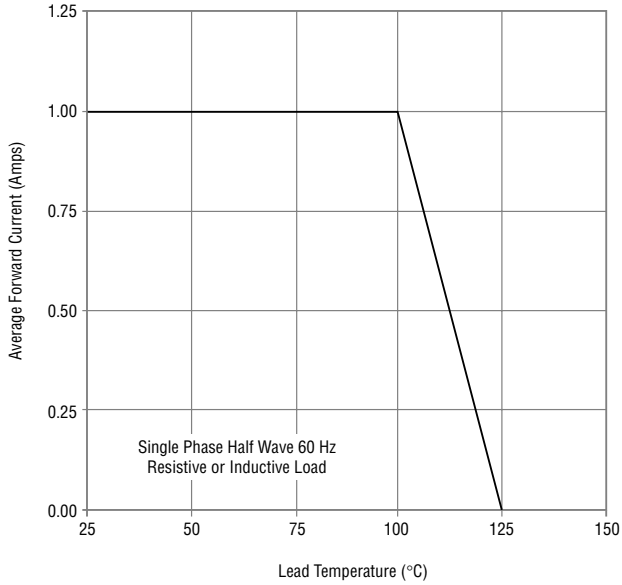
Forward Characteristics



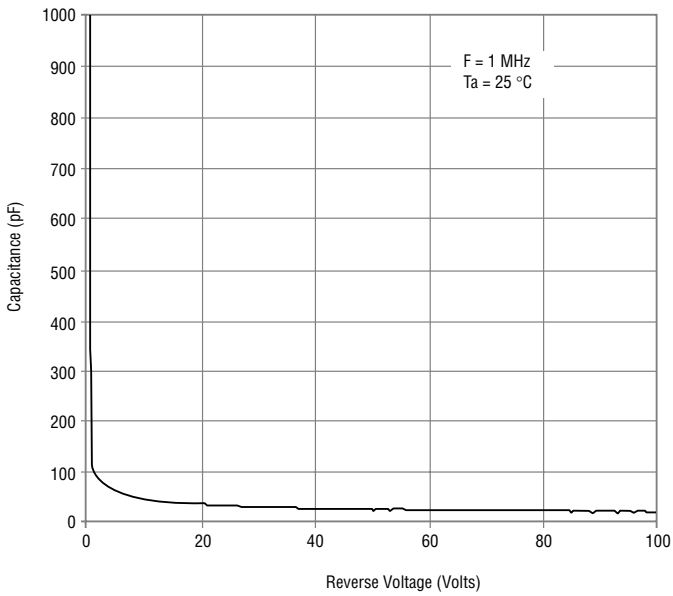
Reverse Characteristics



Derating Curve

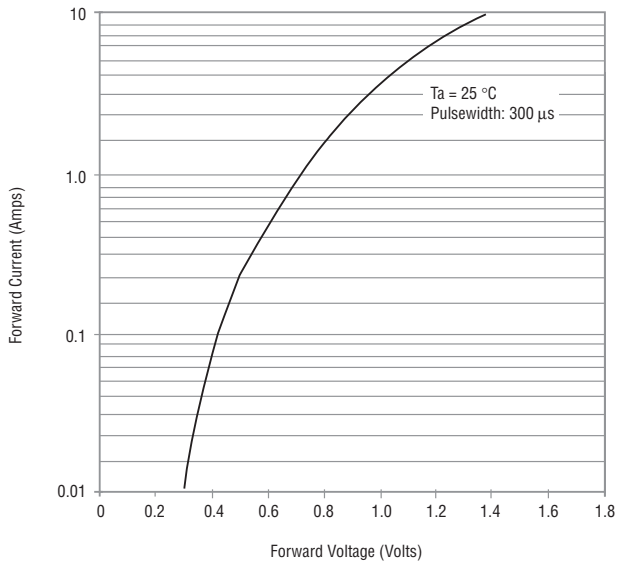


Capacitance Between Terminals

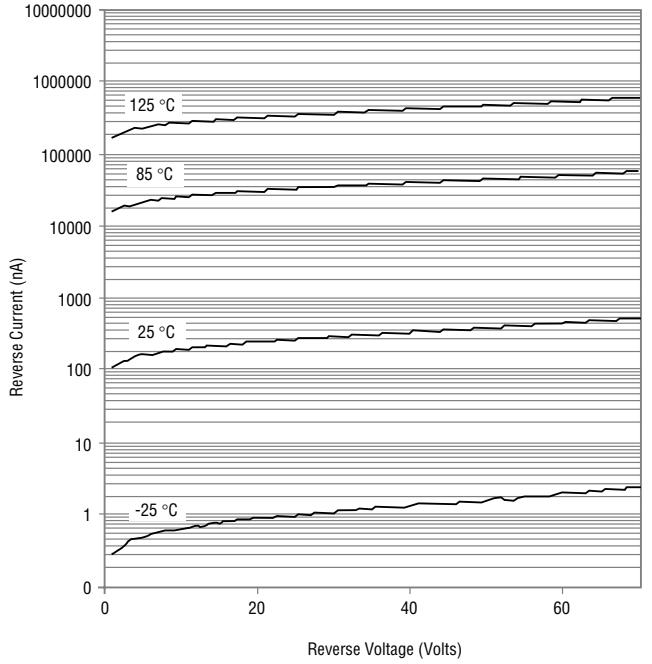


Rating and Characteristic Curves: CD214A-B170

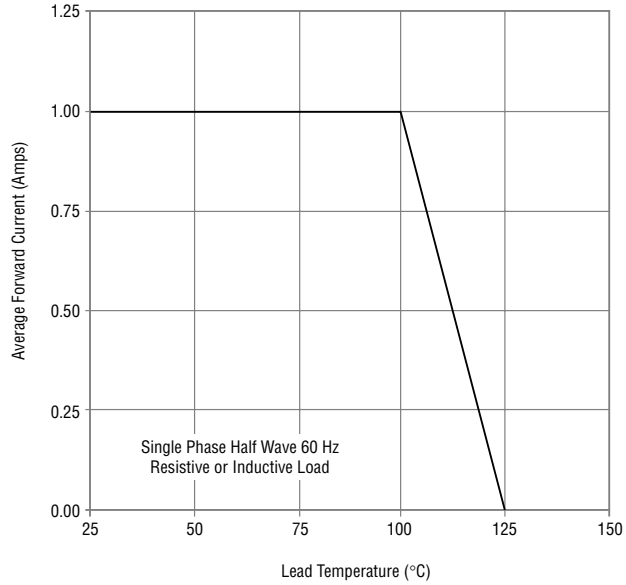
Forward Characteristics



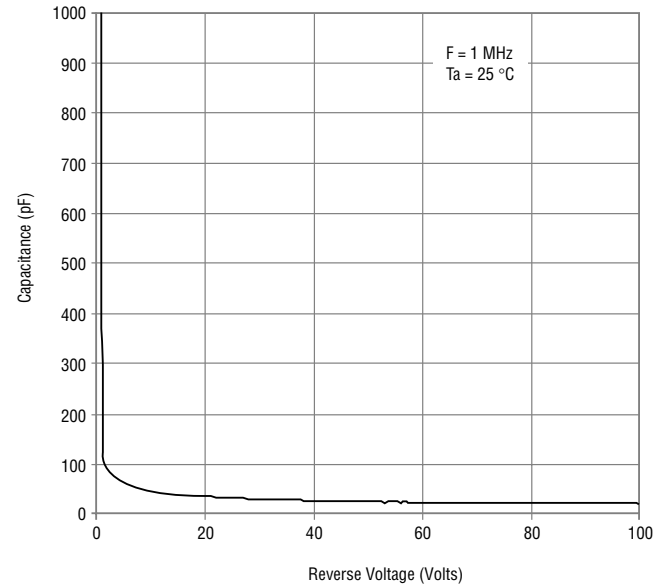
Reverse Characteristics



Derating Curve

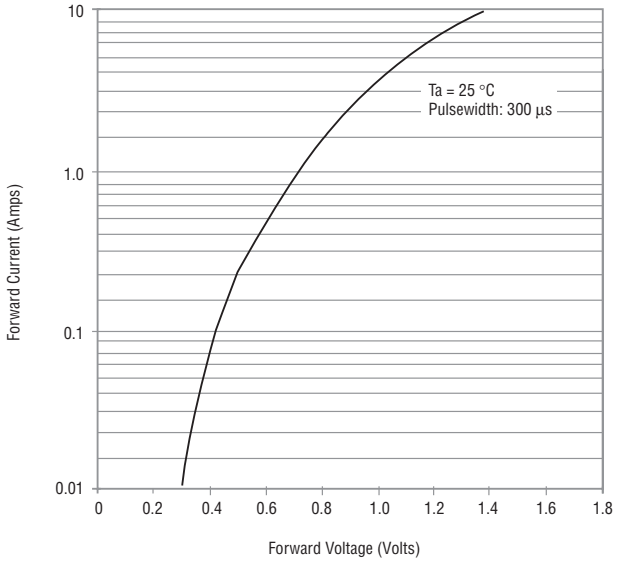


Capacitance Between Terminals

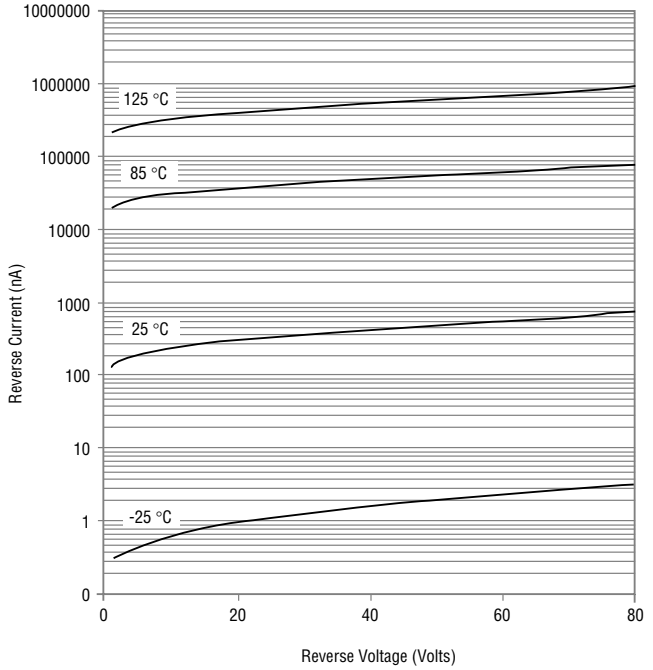


Rating and Characteristic Curves: CD214A-B180

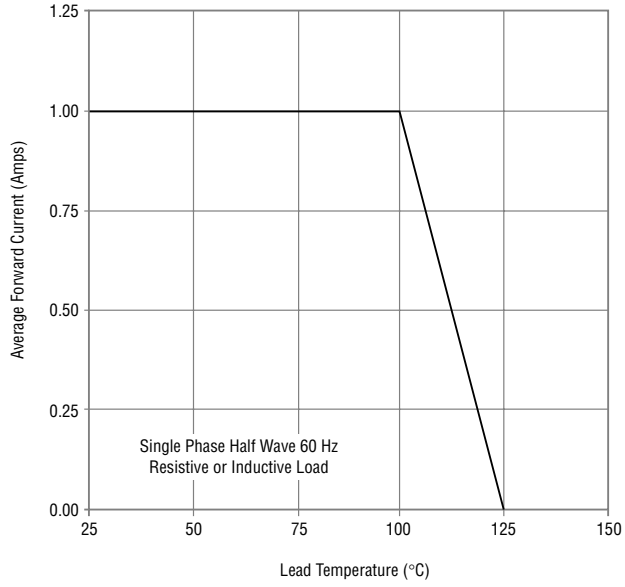
Forward Characteristics



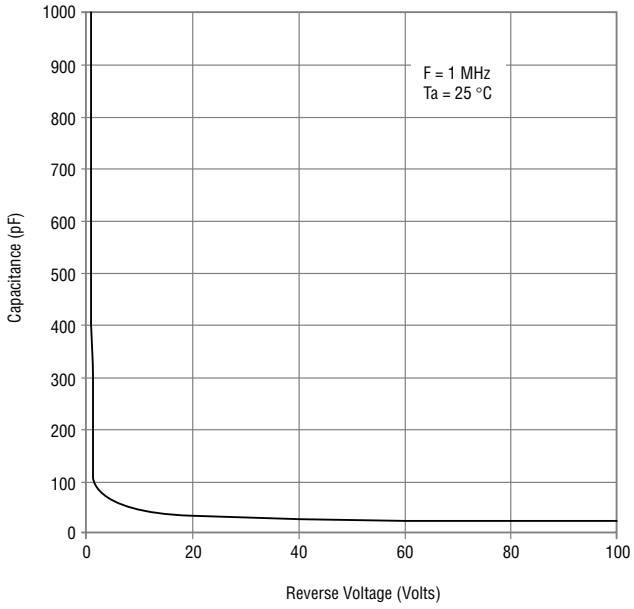
Reverse Characteristics



Derating Curve

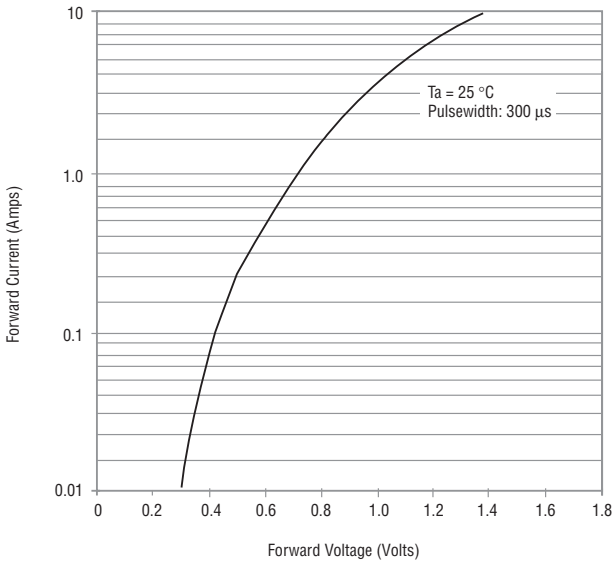


Capacitance Between Terminals

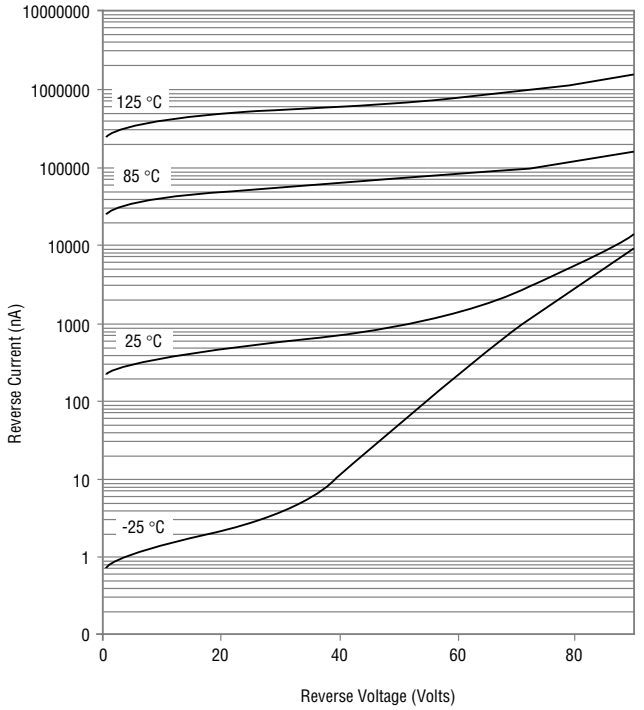


Rating and Characteristic Curves: CD214A-B190

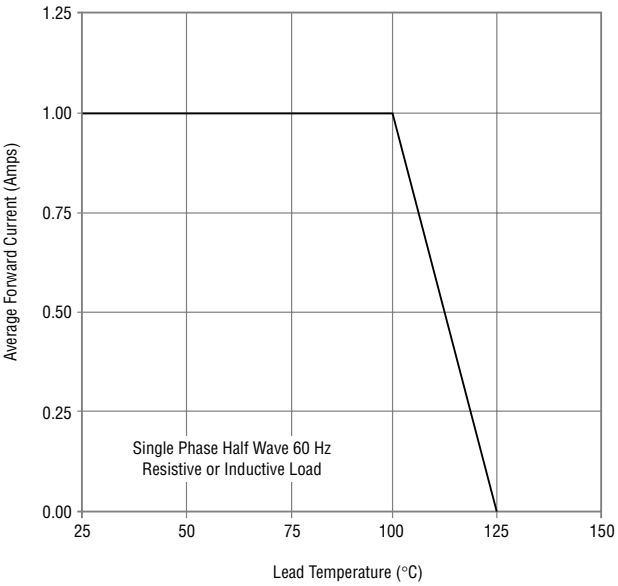
Forward Characteristics



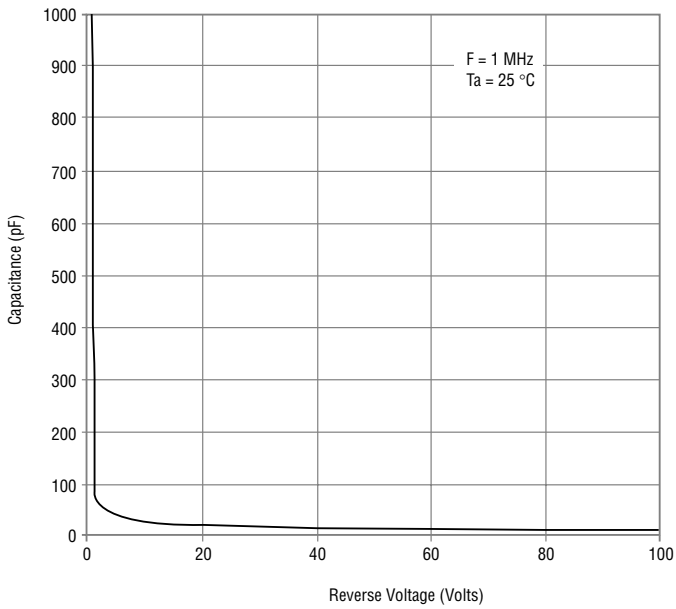
Reverse Characteristics



Derating Curve

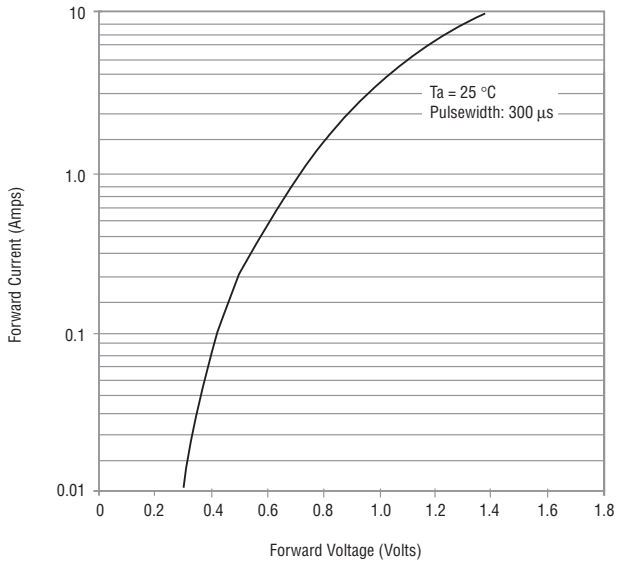


Capacitance Between Terminals

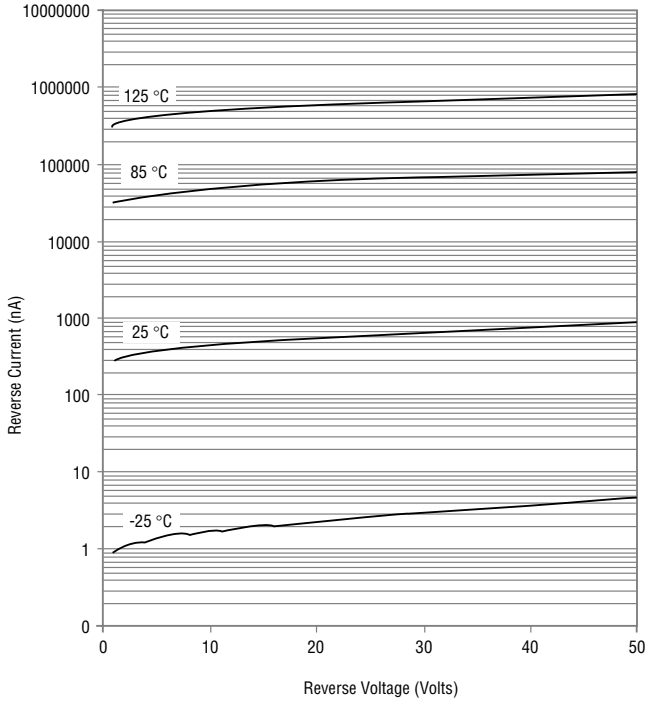


Rating and Characteristic Curves: CD214A-B1100

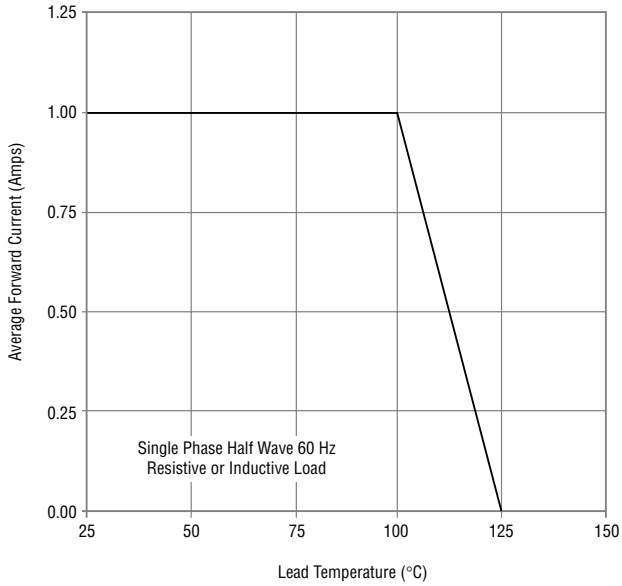
Forward Characteristics



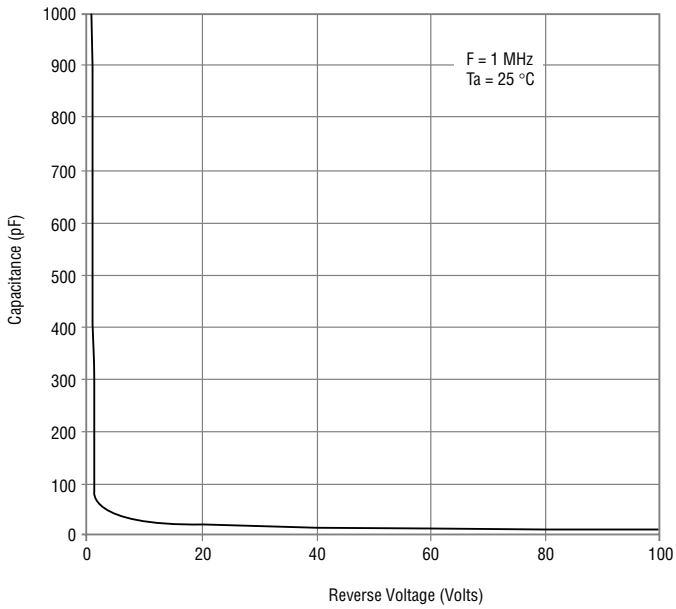
Reverse Characteristics



Derating Curve

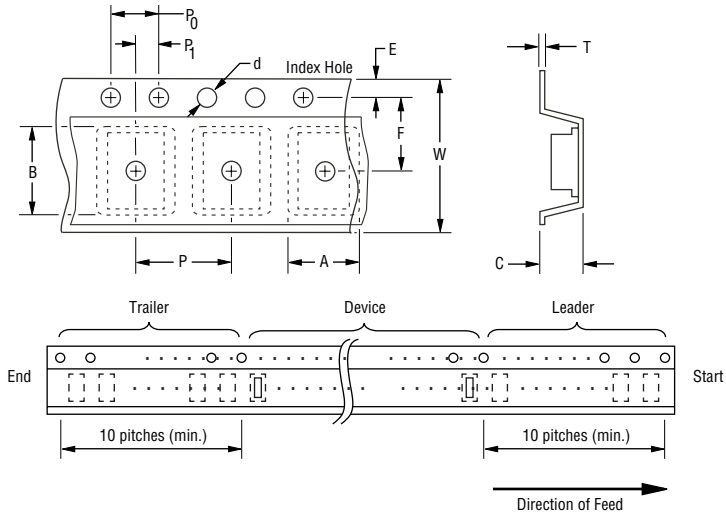


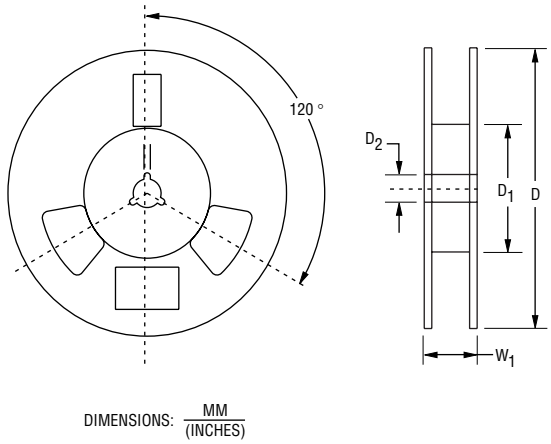
Capacitance Between Terminals



Packaging Information

The product will be dispensed in Tape and Reel format (see diagram below).

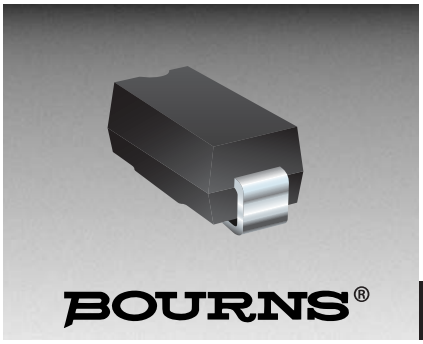




DIMENSIONS: MM / (INCHES)

Devices are packed in accordance with EIA standard RS-481-A and specifications shown here.

Item	Symbol	SMA (DO-214AC)
Carrier Width	A	2.90 ± 0.10 (0.114 - 0.004)
Carrier Length	B	5.59 ± 0.10 (0.220 - 0.004)
Carrier Depth	C	2.36 ± 0.10 (0.093 - 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 ± 0.20 (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	0.30 ± 0.10 (0.012 - 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	--	5,000



BOURNS®

Features

- SMA package
- Surface mount
- Very low forward voltage drop

CD214A-B220 ~ B260 Schottky Barrier Rectifier 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 chip package DO-214AC (SMA) size format, which offer PCB real estate savings and are considerably smaller than competitive parts. The Schottky Rectifier Diodes offer a forward current of 2 A with a choice of repetitive peak reverse voltage of 20 V up to 60 V.

Bourns® Chip Diodes conform to JEDEC standards, easy to handle on standard pick and place equipment and their flat configuration makes roll away much more difficult.

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

Parameter	Symbol	CD214A-						Unit
		B220	B230	B240	B240L	B250	B260	
Forward Voltage (Max.) (I_f = 2 A)	V_F	0.5	0.5	0.5	0.43	0.7	0.7	V
Typical Junction Capacitance*	C_T	200						pF
Reverse Current (Max.) at Rated V_R)	I_R	0.5	0.5	0.5	2.0	0.5	0.5	mA

* 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	CD214A-						Unit
		B220	B230	B240	B240L	B250	B260	
Repetitive Peak Reverse Voltage	V_{RRM}	20	30	40	40	50	60	V
Reverse Voltage	V_R	20	30	40	40	50	60	V
Maximum RMS Voltage	V_{RMS}	14	21	28	28	35	42	V
Avg. Forward Current	I_O	2						A
Forward Current, Surge Peak (60 Hz, 1 cycle)	I_{surge}	50	50	50	25	50	50	A
Typical Thermal Resistance**	$R_{\Theta JL}$	15	15	15	18	15	15	°C/W
Storage Temperature	T_{STG}	-55 to +150						°C
Junction Temperature	T_J	-55 to +125						°C

** Thermal resistance junction to lead.

How To Order

CD 214A - B 2 40 L

Common Code
Chip Diode

Package
• 214A = SMA/DO-214AC

Model
B = Schottky Barrier Series

Average Forward Current (I_O) Code
2 = 2 A (Code x 1000 mA = Average Forward Current)

Reverse Voltage (V_R) Code
30 = 30 V
40 = 40 V
60 = 60 V

Forward Voltage Suffix
L = Low Forward Voltage V_f (CD214-B240L)

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CD214A-B220 ~ B260 Schottky Barrier Rectifier Chip Diode

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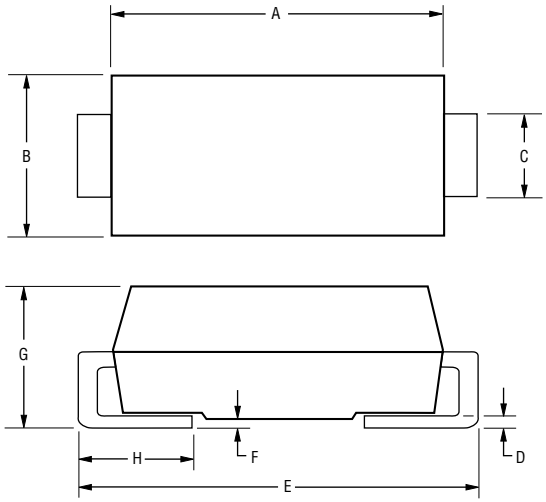
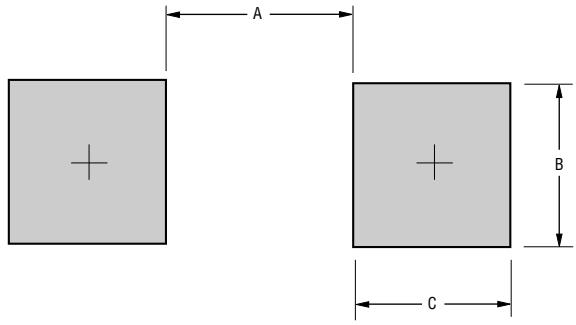
Product Dimensions



Dimension	SMA (DO-214AC)
A	4.06 - 4.57 (0.160 - 0.180)
B	2.29 - 2.92 (0.090 - 0.115)
C	1.27 - 1.63 (0.050 - 0.064)
D	0.15 - 0.31 (0.006 - 0.110)
E	4.83 - 5.59 (0.190 - 0.220)
F	0.05 - 0.20 (0.002 - 0.008)
G	2.01 - 2.62 (0.080 - 0.103)
H	0.76 - 1.52 (0.030 - 0.060)

DIMENSIONS: MM / (INCHES)

Recommended Pad Layout



Dimension	SMA (DO-214AC)
A (Max.)	2.69 (0.106)
B (Min.)	2.10 (0.083)
C (Min.)	1.27 (0.050)

DIMENSIONS: MM / (INCHES)

Physical Specifications

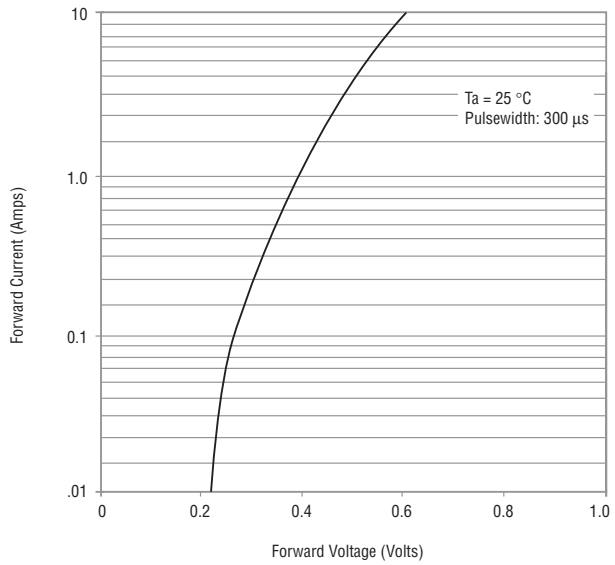
Case .....Molded plastic
Polarity .....Indicated by cathode band
Weight .....0.002 ounces / 0.064 grams

Typical Part Marking

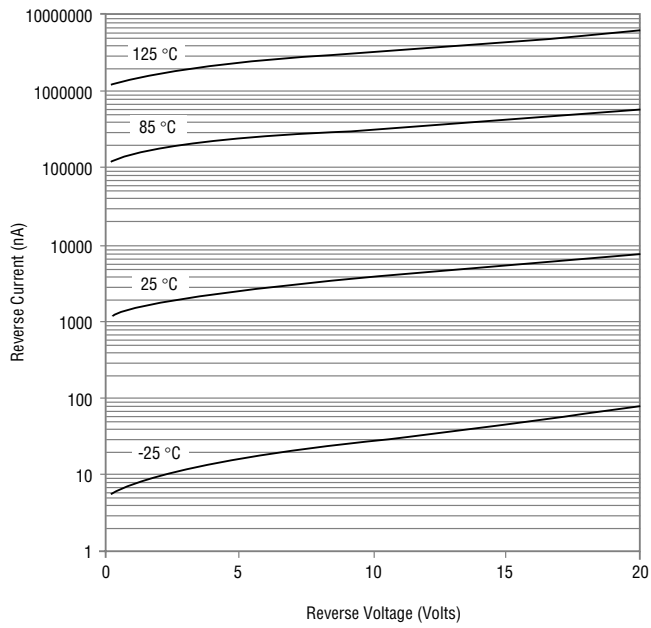
CD214A-B220 ..... B 220
CD214A-B230 ..... B 230
CD214A-B240 ..... B 240
CD214A-B240L ..... B 240L
CD214A-B250 ..... B 250
CD214A-B260 ..... B 260

Rating and Characteristic Curves: CD214A-B220

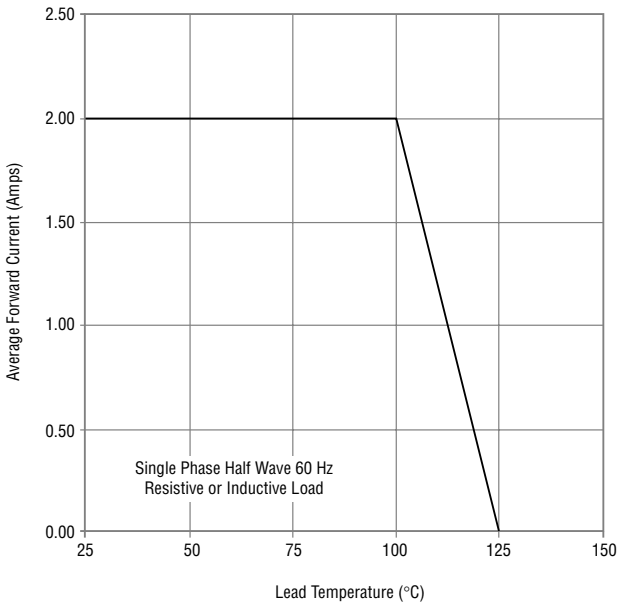
Forward Characteristics



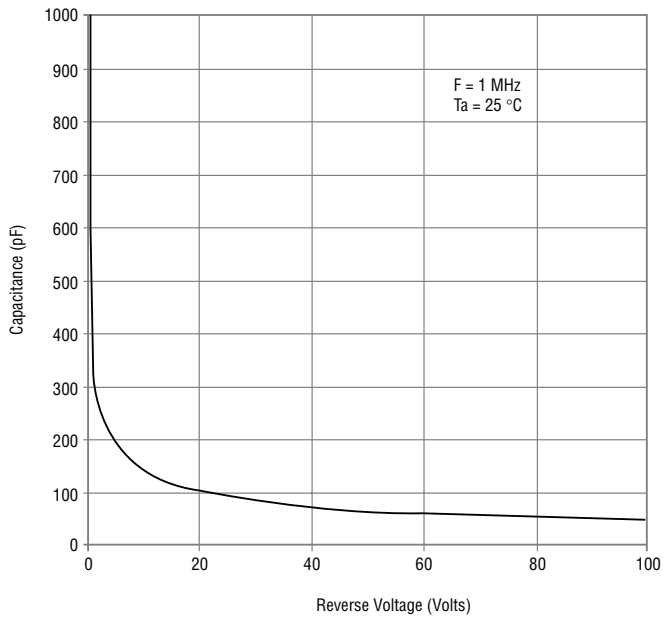
Reverse Characteristics



Derating Curve

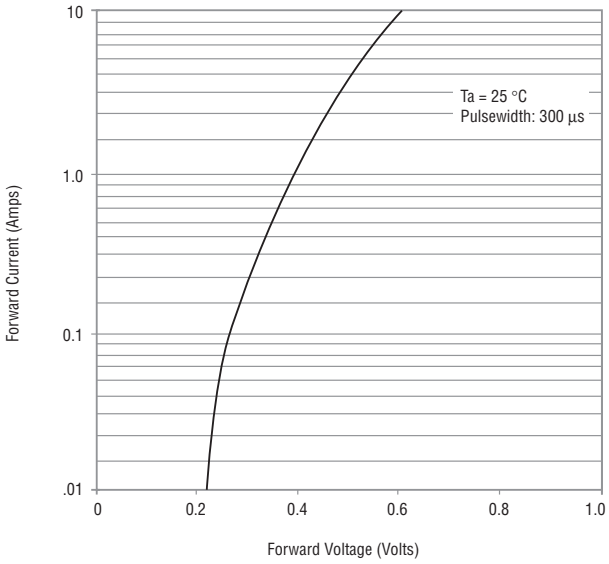


Capacitance Between Terminals

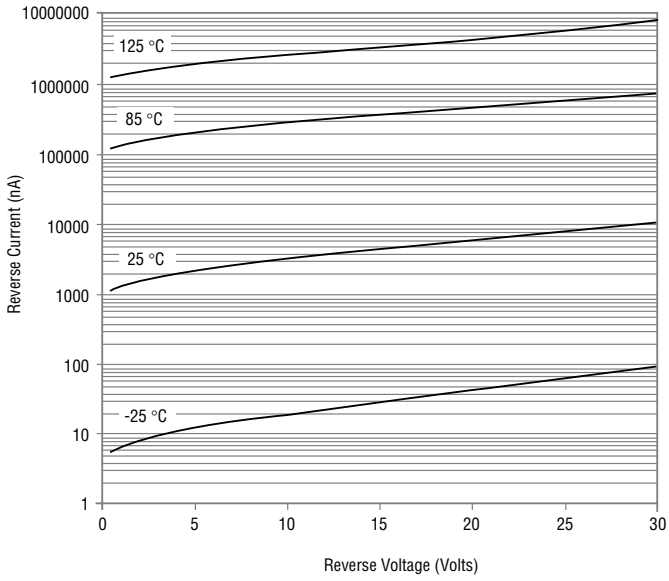


Rating and Characteristic Curves: CD214A-B230

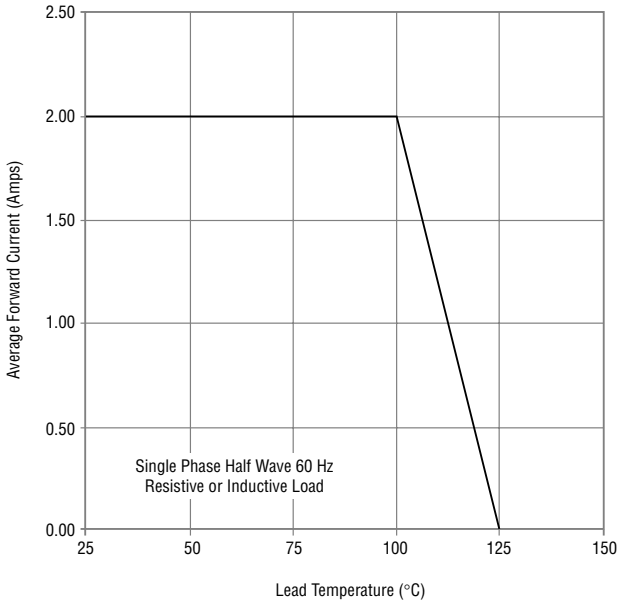
Forward Characteristics



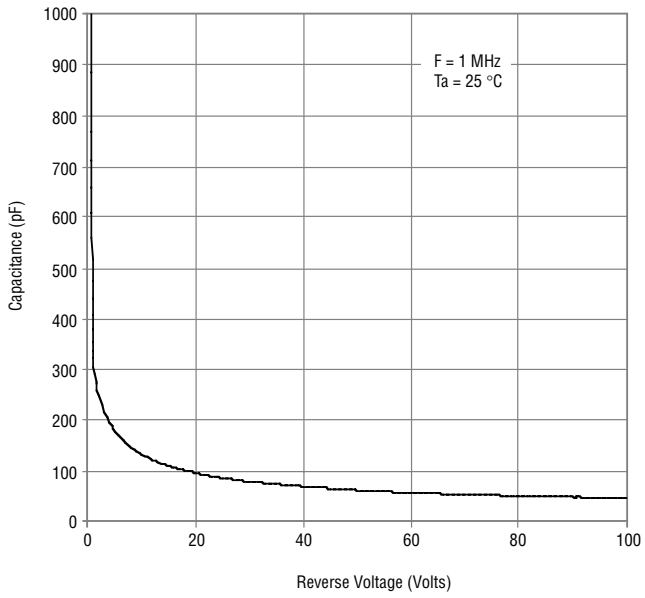
Reverse Characteristics



Derating Curve

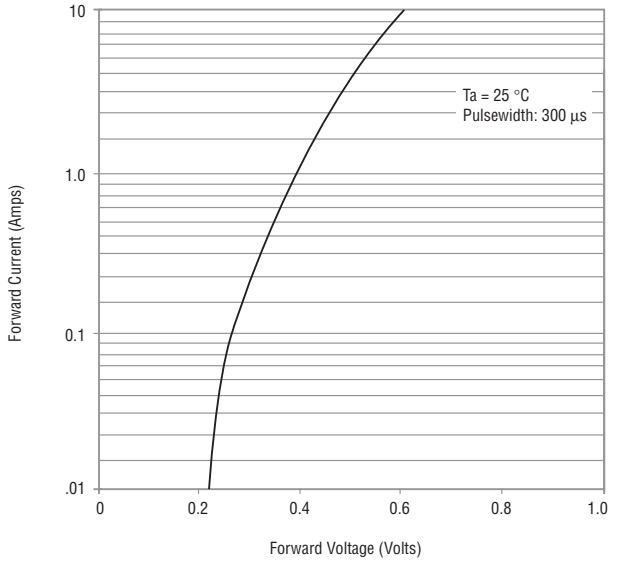


Capacitance Between Terminals

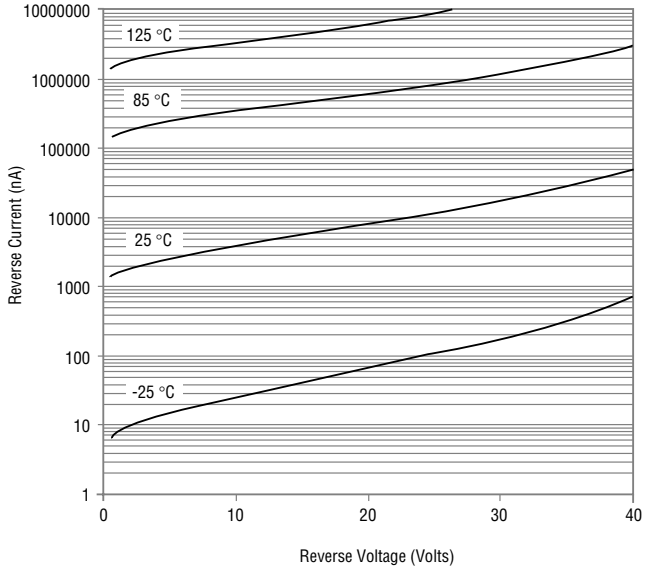


Rating and Characteristic Curves: CD214A-B240

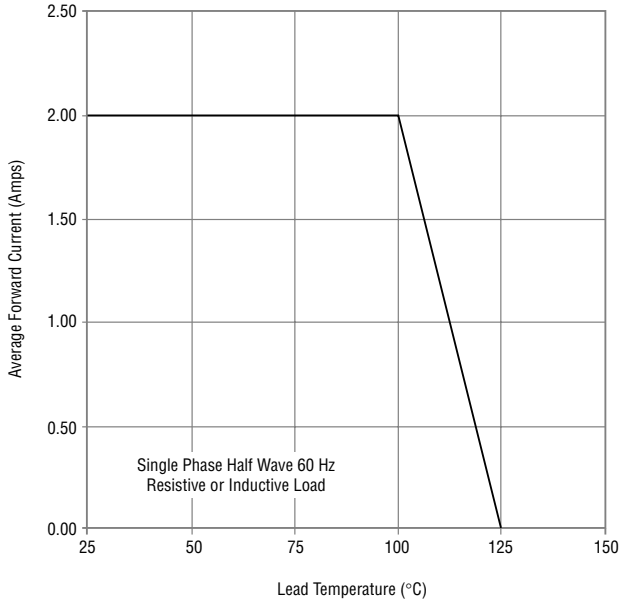
Forward Characteristics



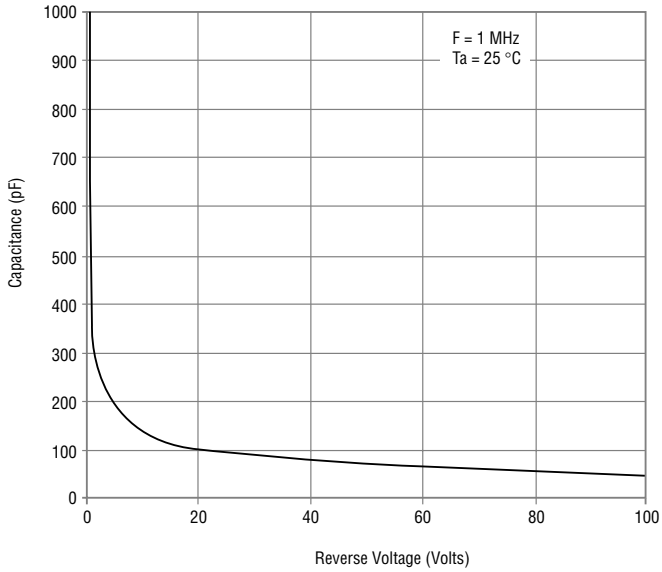
Reverse Characteristics



Derating Curve

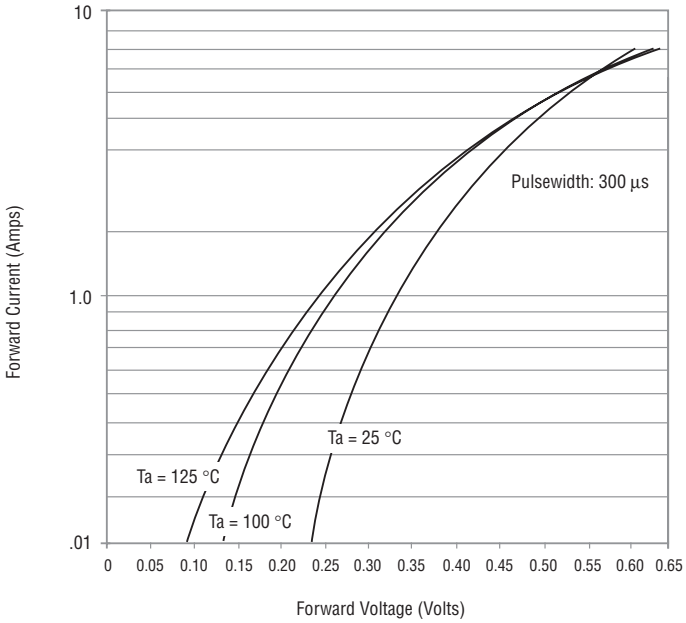


Capacitance Between Terminals

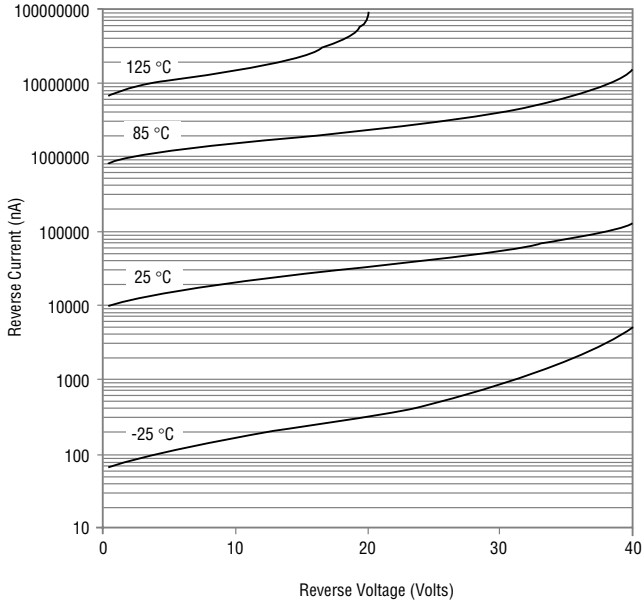


Rating and Characteristic Curves: CD214A-B240L

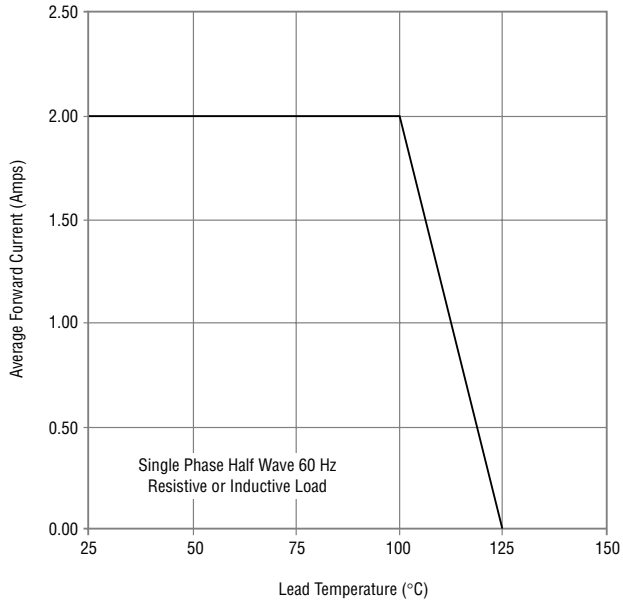
Forward Characteristics



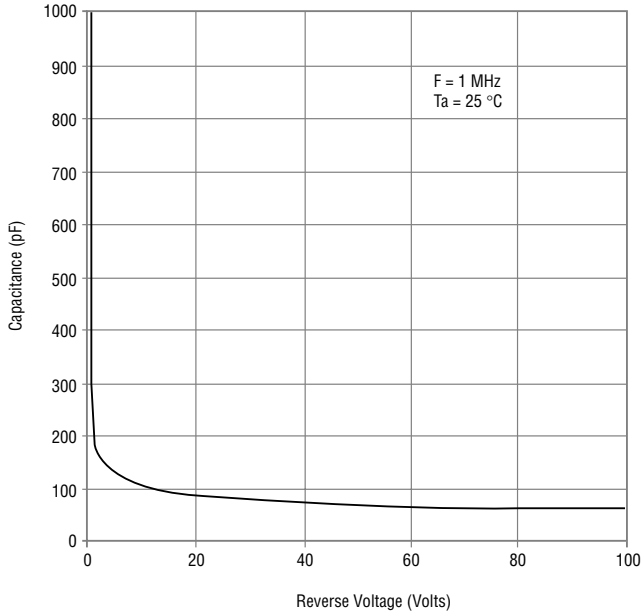
Reverse Characteristics



Derating Curve

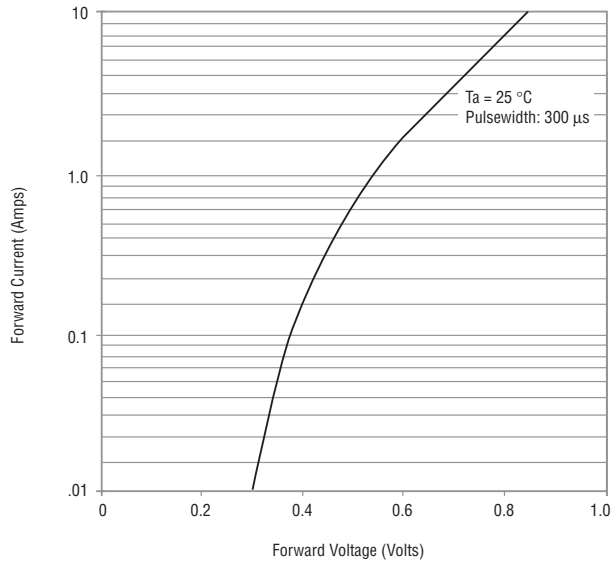


Capacitance Between Terminals

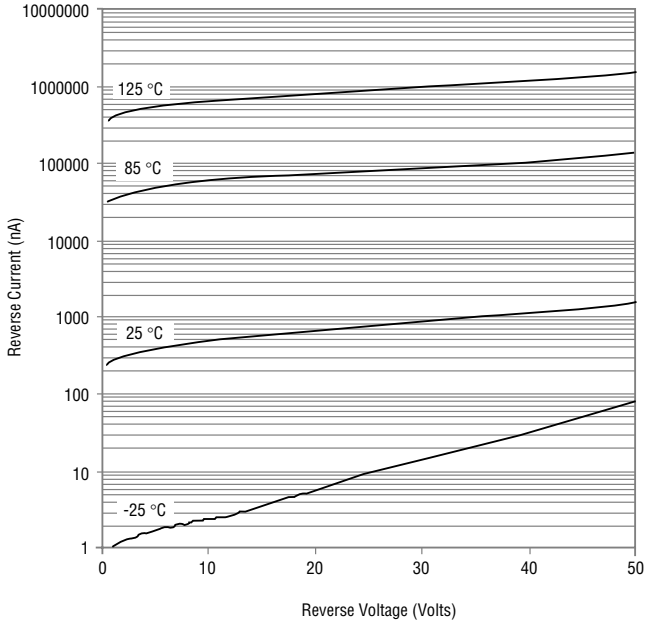


Rating and Characteristic Curves: CD214A-B250

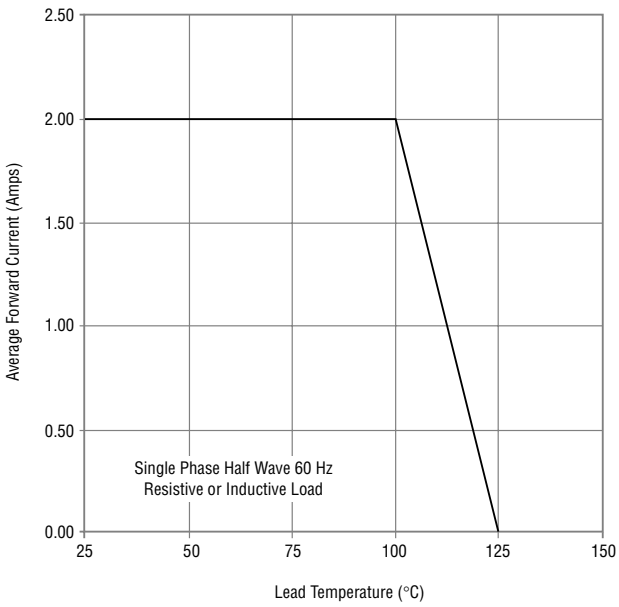
Forward Characteristics



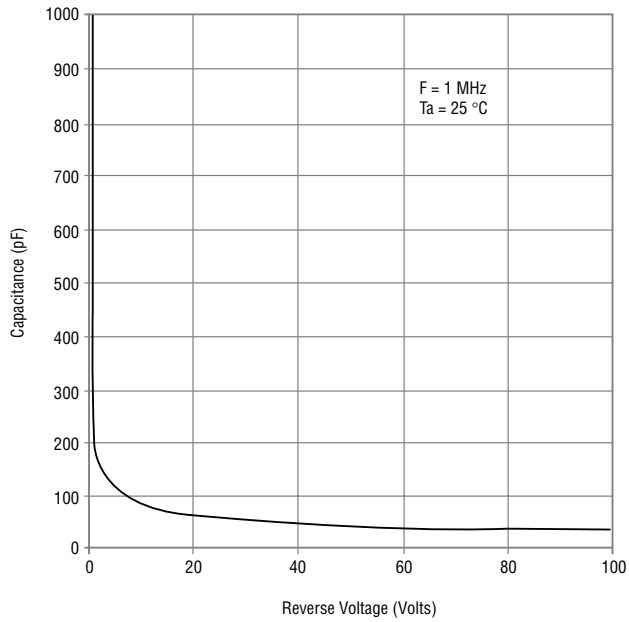
Reverse Characteristics



Derating Curve

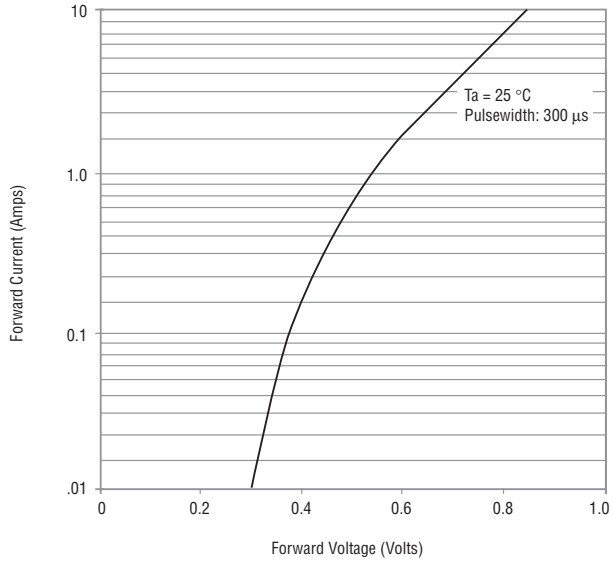


Capacitance Between Terminals

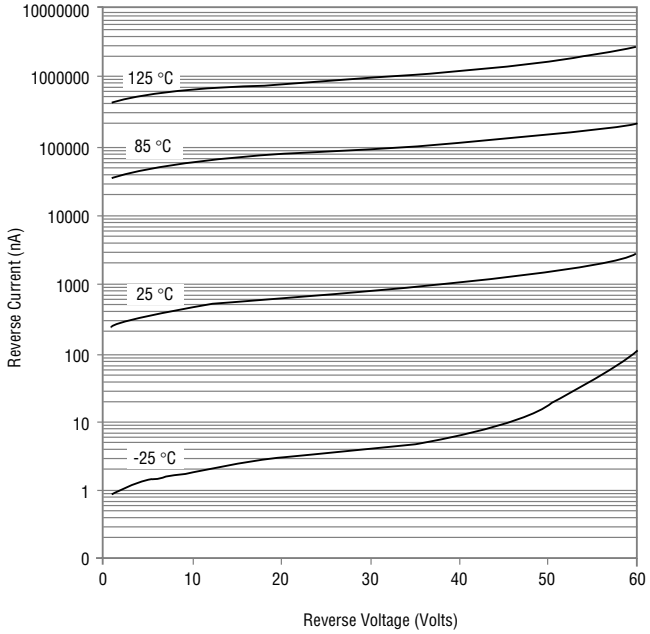


Rating and Characteristic Curves: CD214A-B260

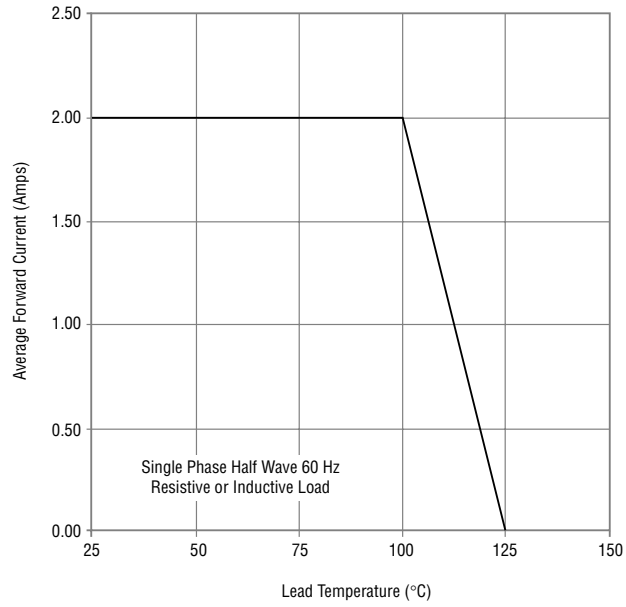
Forward Characteristics



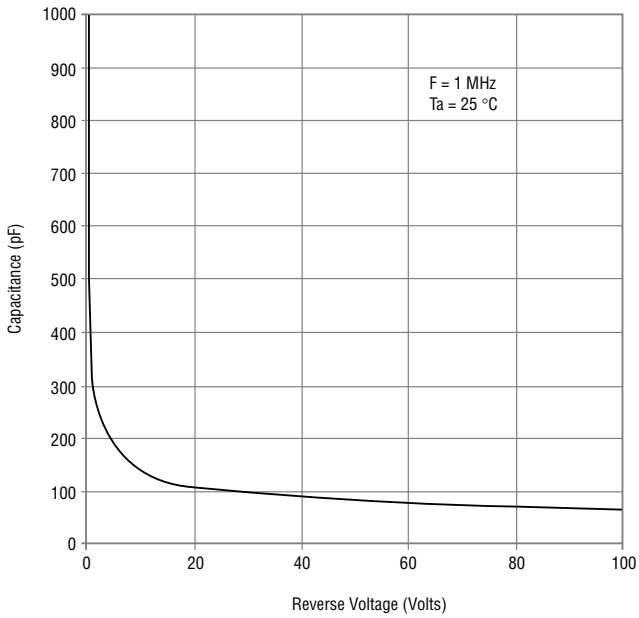
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



Packaging Information

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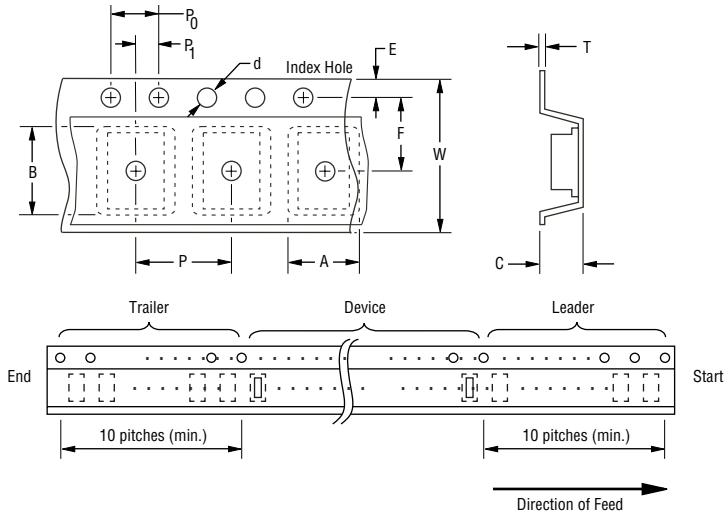

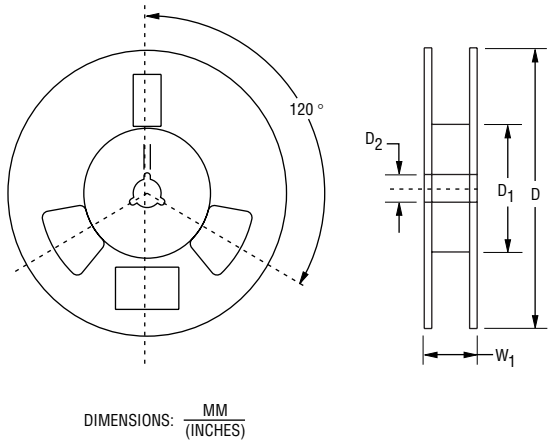

DIMENSIONS: MM / (INCHES)

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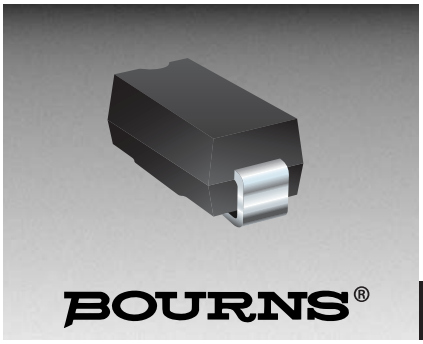
Sprocket Hole	d	1.55 ± 0.05 (0.061 - 0.002)
Reel Outside Diameter	D	330 (12.992)
Reel Inner Diameter	D_1	50.0 (1.969) MIN.
Feed Hole Diameter	D_2	13.0 ± 0.20 (0.512 - 0.008)
Sprocket Hole Position	E	1.75 ± 0.10 (0.069 - 0.004))
Punch Hole Position	F	5.50 ± 0.05 (0.217 - 0.002)
Punch Hole Pitch	P	4.00 ± 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	0.30 ± 0.10 (0.012 - 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	--	5,000



BOURNS®

Features

- SMA package
- Surface mount
- High current capability

CD214A-B320 ~ B360 Schottky Barrier Rectifier 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 chip package DO-214AC (SMA) size format, which offer PCB real estate savings and are considerably smaller than competitive parts. The Schottky Rectifier Diodes offer a forward current of 3 A with a choice of repetitive peak reverse voltage of 20 V up to 60 V.

Bourns® Chip Diodes conform to JEDEC standards, easy to handle on standard pick and place equipment and their flat configuration makes roll away much more difficult.

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

Parameter	Symbol	CD214A-						Unit
		B320	B330	B340	B340L	B350	B360	
Forward Voltage (Max.) (I_f = 3 A)	V_F	0.5	0.5	0.5	0.45	0.7	0.7	V
Typical Junction Capacitance*	C_T	250	250	250	300	250	250	pF
Reverse Current (Max.) at Rated V_R)	I_R	0.5	0.5	0.5	1.0	0.5	0.5	mA

* 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	CD214A-						Unit
		B320	B330	B340	B340L	B350	B360	
Repetitive Peak Reverse Voltage	V_{RRM}	20	30	40	40	50	60	V
Reverse Voltage	V_R	20	30	40	40	50	60	V
Maximum RMS Voltage	V_{RMS}	14	21	28	28	35	42	V
Avg. Forward Current	I_O	3						A
Forward Current, Surge Peak (60 Hz, 1 cycle)	I_{surge}	100	100	100	70	100	100	A
Typical Thermal Resistance**	$R_{\Theta JL}$	10	10	10	20	10	10	°C/W
Storage Temperature	T_{STG}	-55 to +150						°C
Junction Temperature	T_J	-55 to +125						°C

** Thermal resistance junction to lead.

How To Order

CD 214A - B 3 30 L

Common Code
Chip Diode

Package
• 214A = SMA/DO-214AC

Model
B = Schottky Barrier Series

Average Forward Current (I_O) Code
3 = 3 A (Code x 1000 mA = Average Forward Current)

Reverse Voltage (V_R) Code
30 = 30 V
40 = 40 V
60 = 60 V

Forward Voltage Suffix
L = Low Forward Voltage V_f (CD214-B330L)

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CD214A-B320 ~ B360 Schottky Barrier Rectifier Chip Diode

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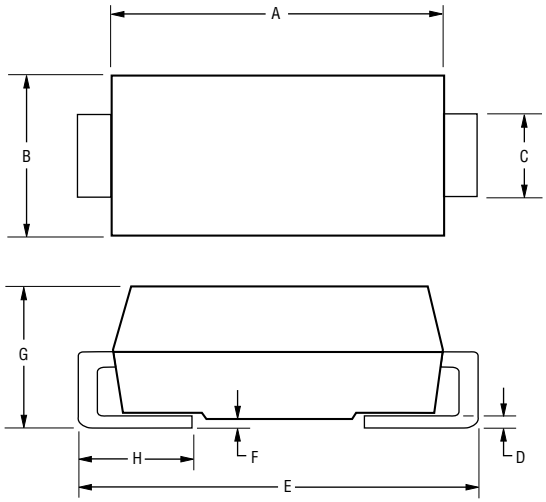
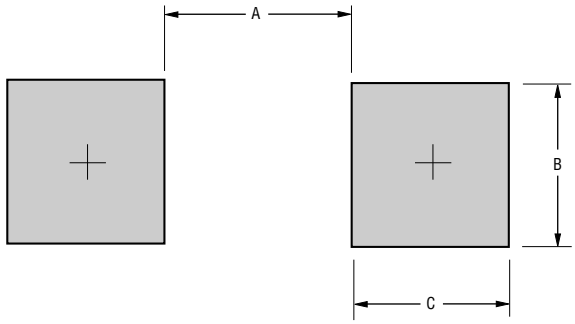
Product Dimensions



Dimension	SMA (DO-214AC)
A	4.06 - 4.57 (0.160 - 0.180)
B	2.29 - 2.92 (0.090 - 0.115)
C	1.27 - 1.63 (0.050 - 0.064)
D	0.15 - 0.31 (0.006 - 0.110)
E	4.83 - 5.59 (0.190 - 0.220)
F	0.05 - 0.20 (0.002 - 0.008)
G	2.01 - 2.62 (0.080 - 0.103)
H	0.76 - 1.52 (0.030 - 0.060)

DIMENSIONS: MM / (INCHES)

Recommended Pad Layout



Dimension	SMA (DO-214AC)
A (Max.)	2.69 (0.106)
B (Min.)	2.10 (0.083)
C (Min.)	1.27 (0.050)

DIMENSIONS: MM / (INCHES)

Physical Specifications

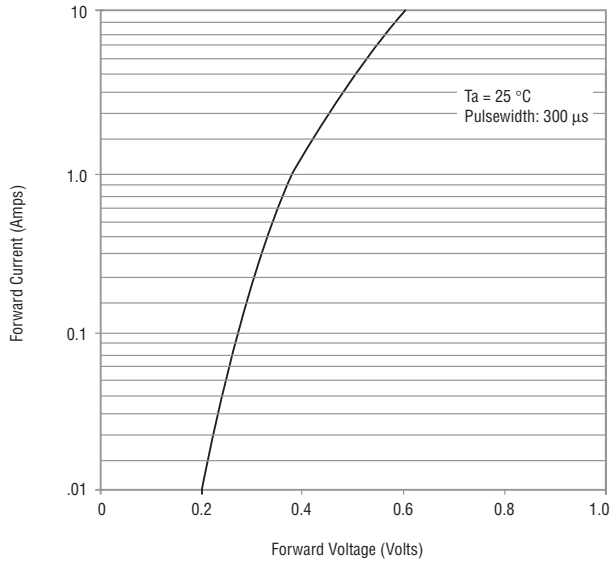
Case .....Molded plastic
Polarity .....Indicated by cathode band
Weight .....0.002 ounces / 0.064 grams

Typical Part Marking

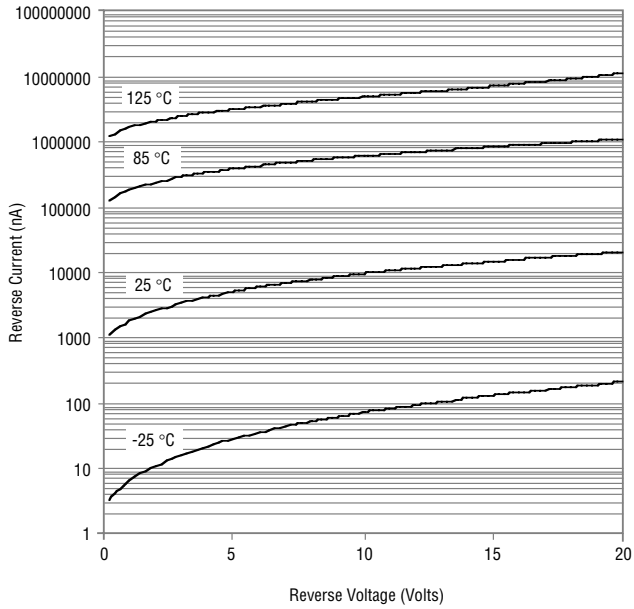
CD214A-B320 ..... B 320
CD214A-B330 ..... B 330
CD214A-B340 ..... B 340
CD214A-B340L ..... B 340L
CD214A-B350 ..... B 350
CD214A-B360 ..... B 360

Rating and Characteristic Curves: CD214A-B320

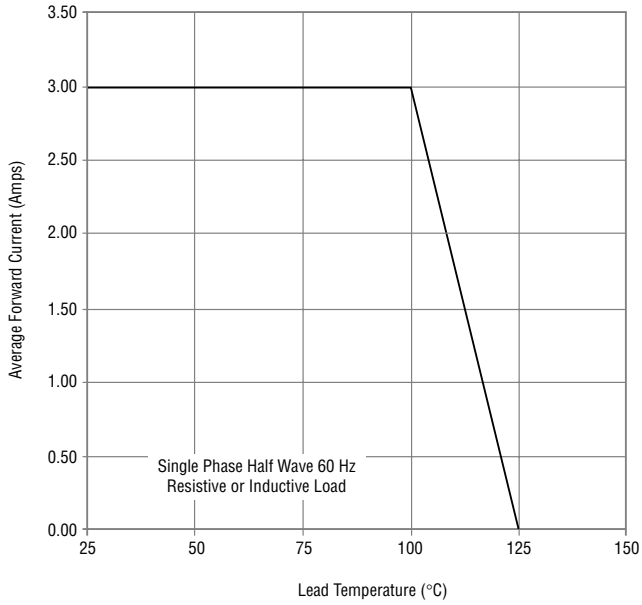
Forward Characteristics



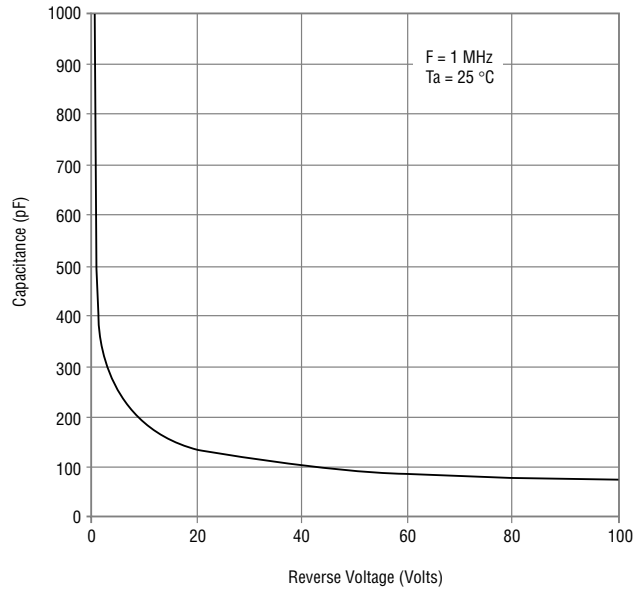
Reverse Characteristics



Derating Curve

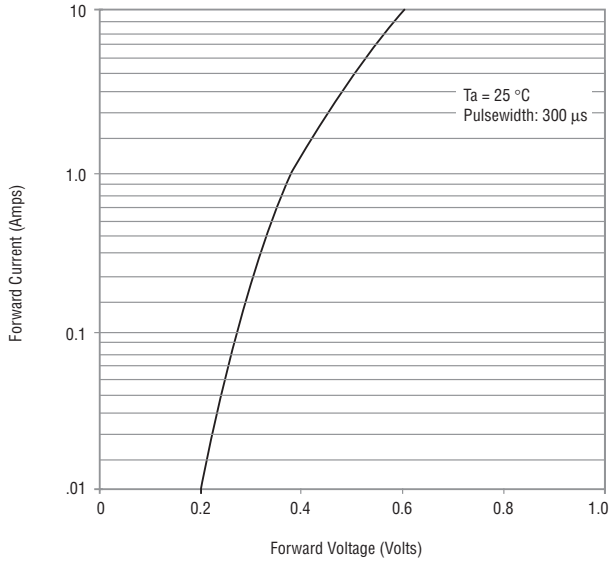


Capacitance Between Terminals

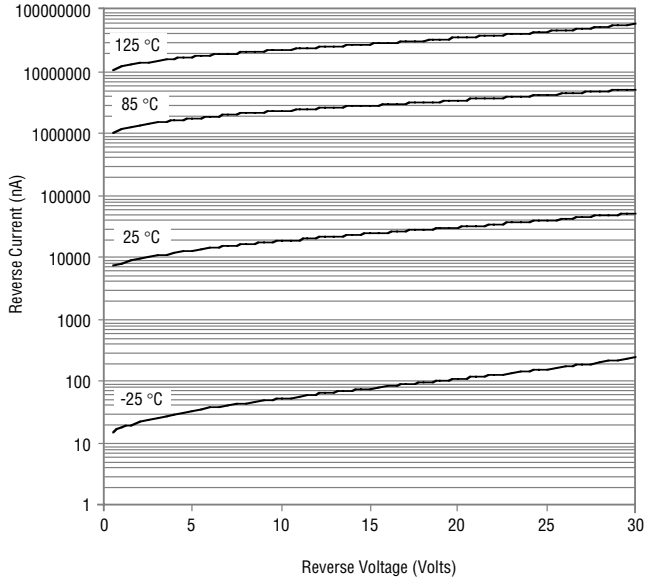


Rating and Characteristic Curves: CD214A-B330

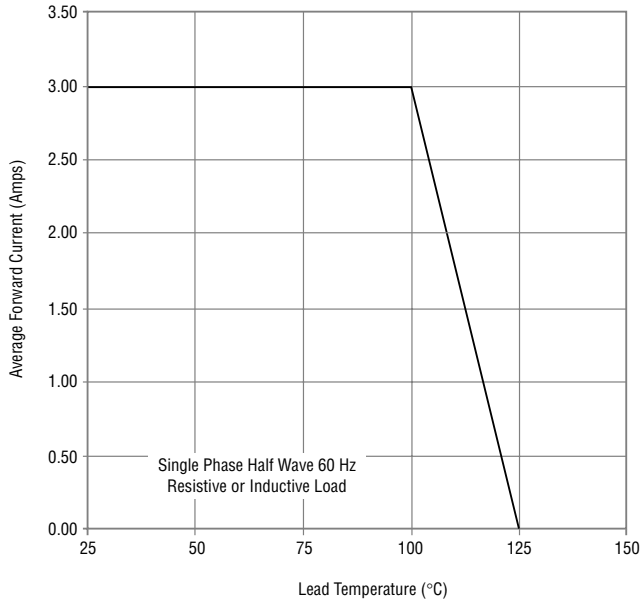
Forward Characteristics



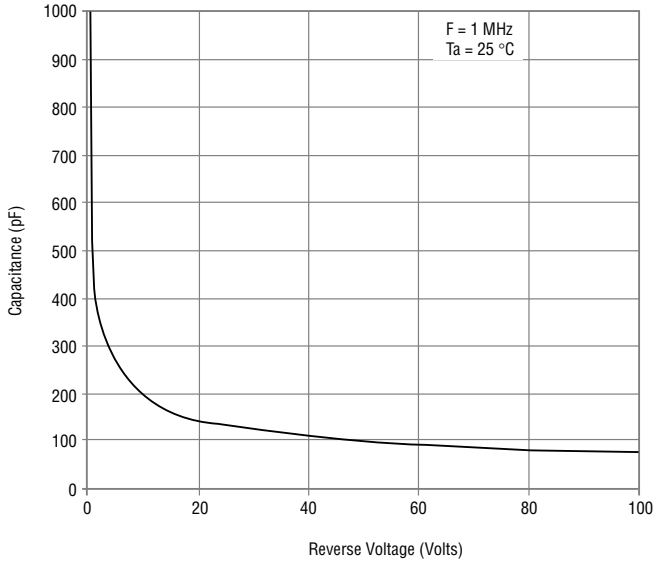
Reverse Characteristics



Derating Curve

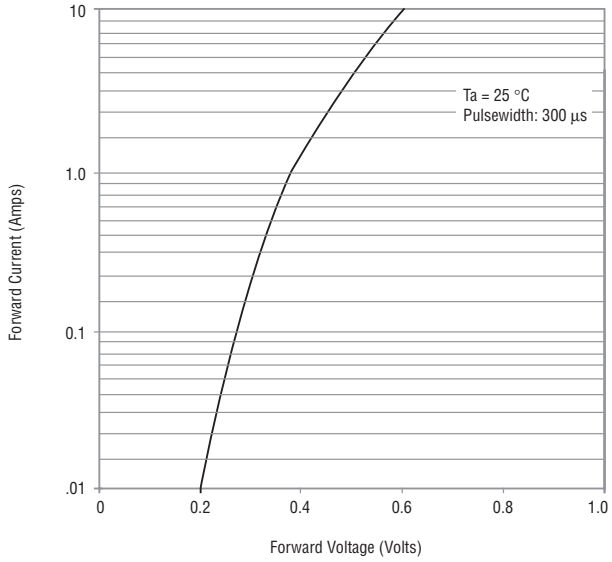


Capacitance Between Terminals

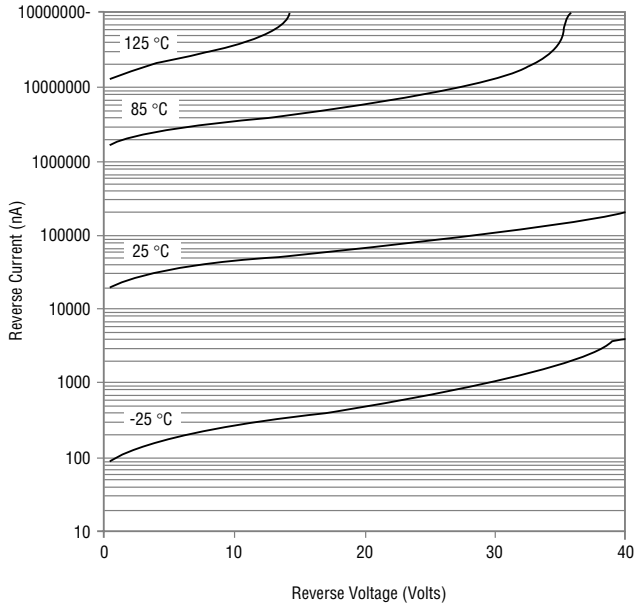


Rating and Characteristic Curves: CD214A-B340

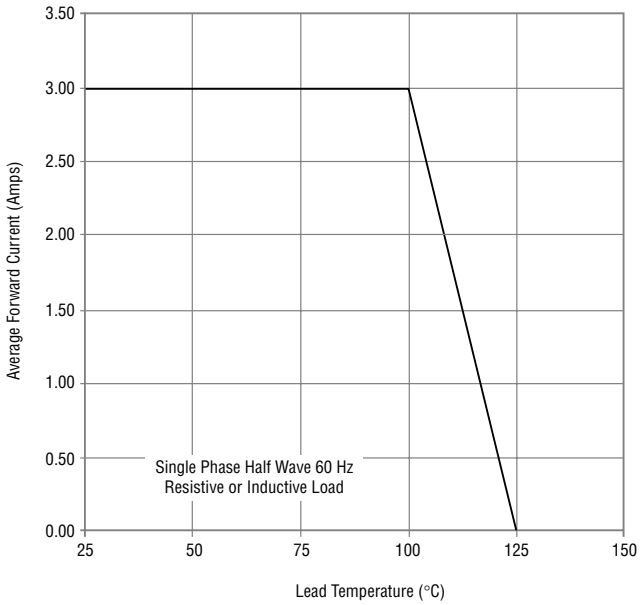
Forward Characteristics



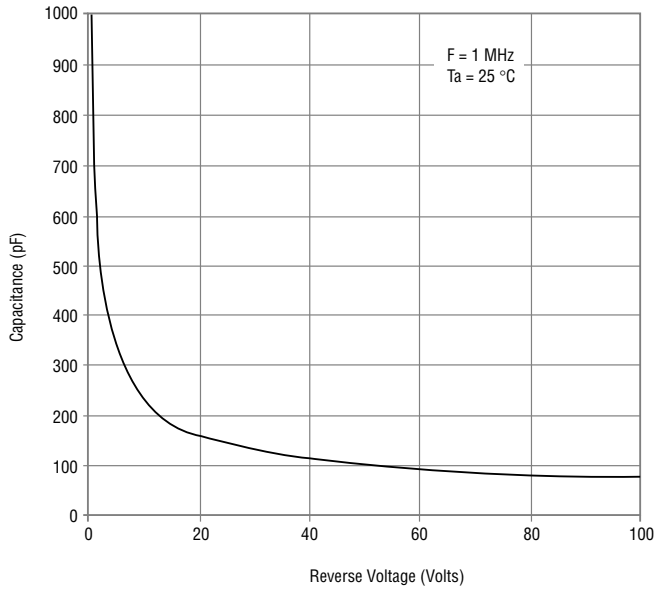
Reverse Characteristics



Derating Curve

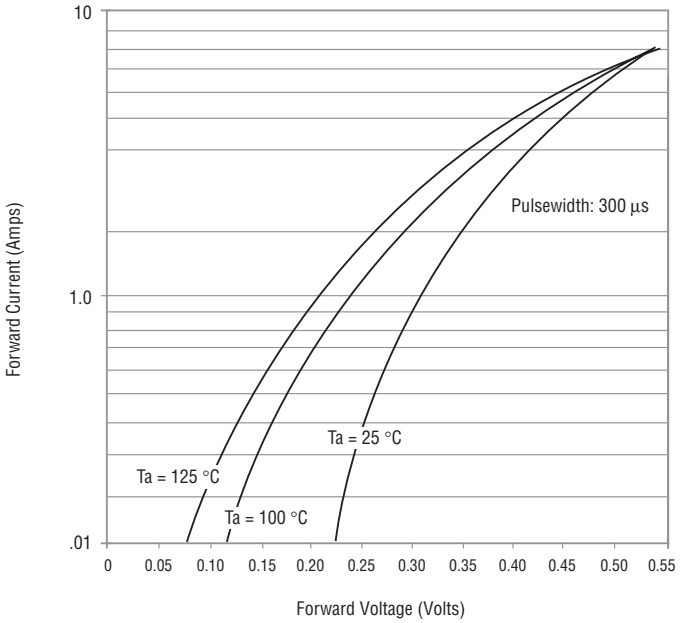


Capacitance Between Terminals

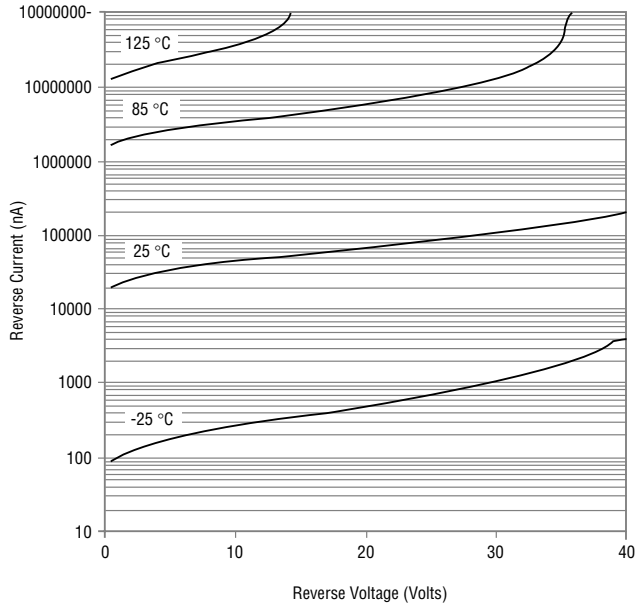


Rating and Characteristic Curves: CD214A-B340L

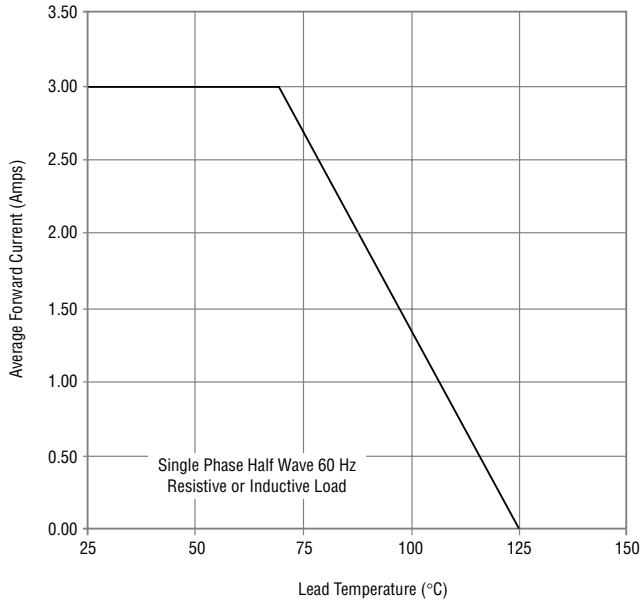
Forward Characteristics



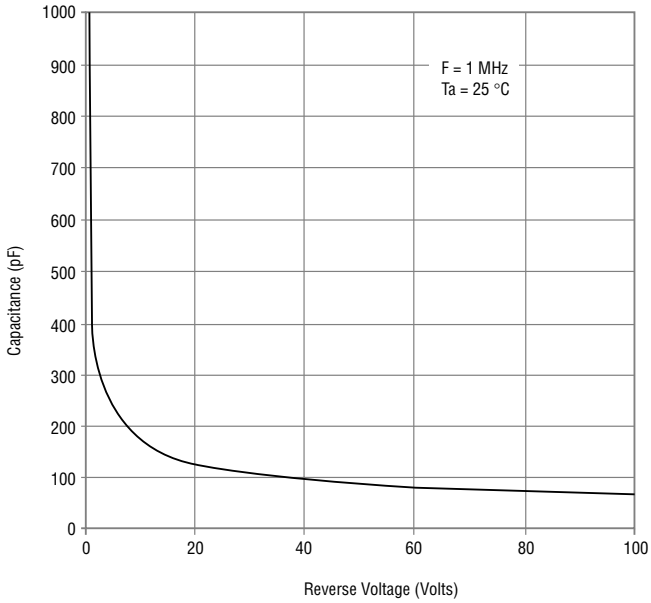
Reverse Characteristics



Derating Curve

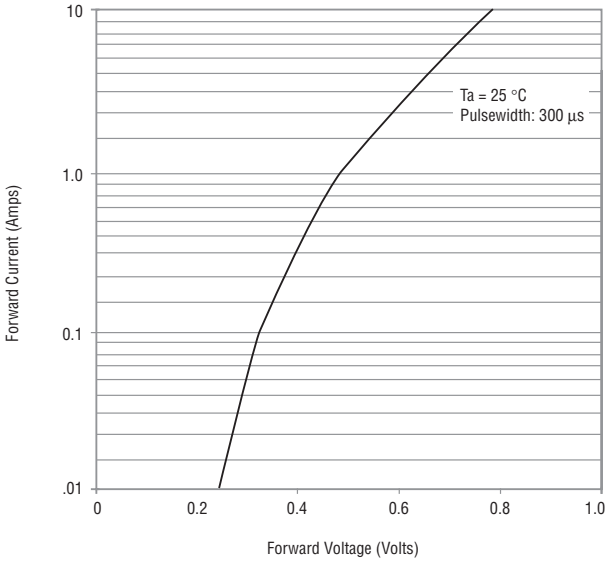


Capacitance Between Terminals

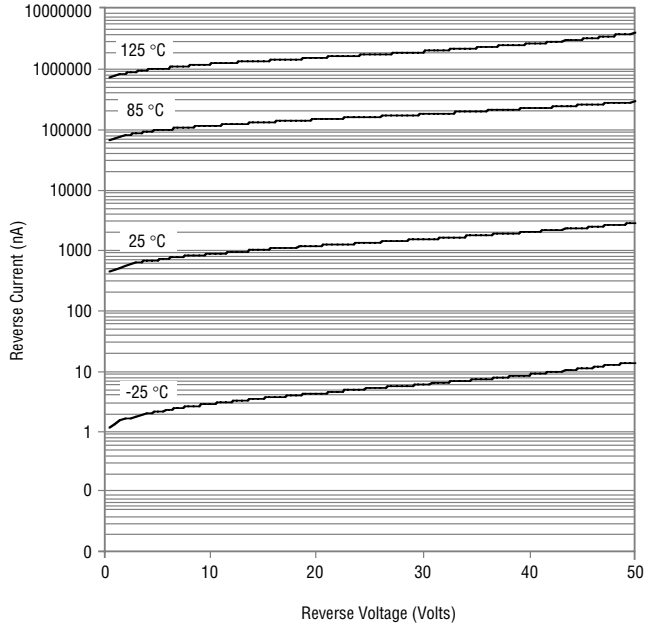


Rating and Characteristic Curves: CD214A-B350

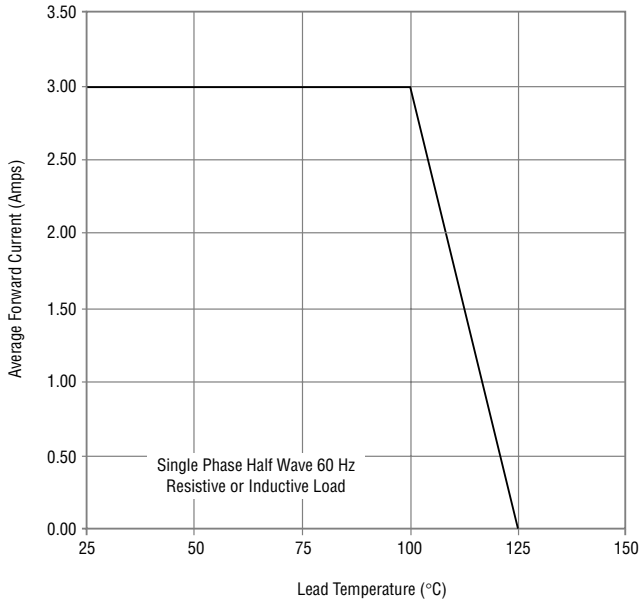
Forward Characteristics



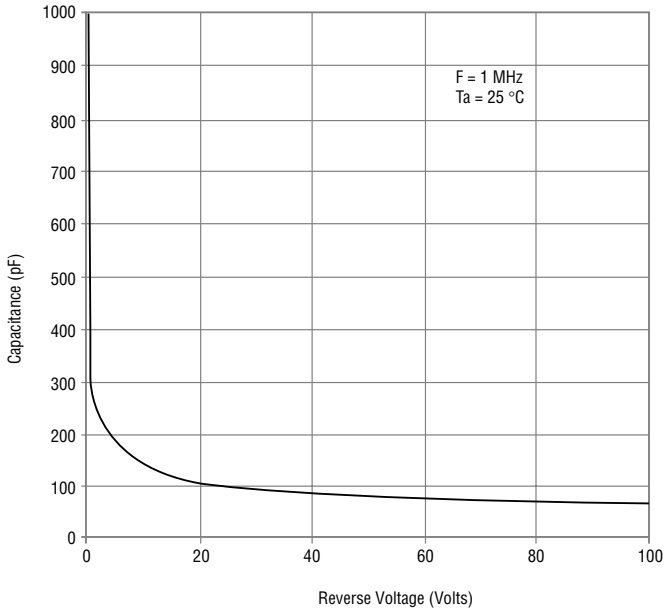
Reverse Characteristics



Derating Curve

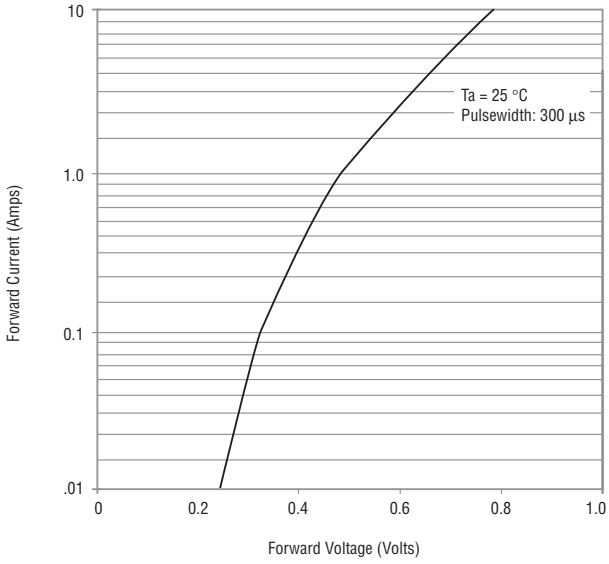


Capacitance Between Terminals

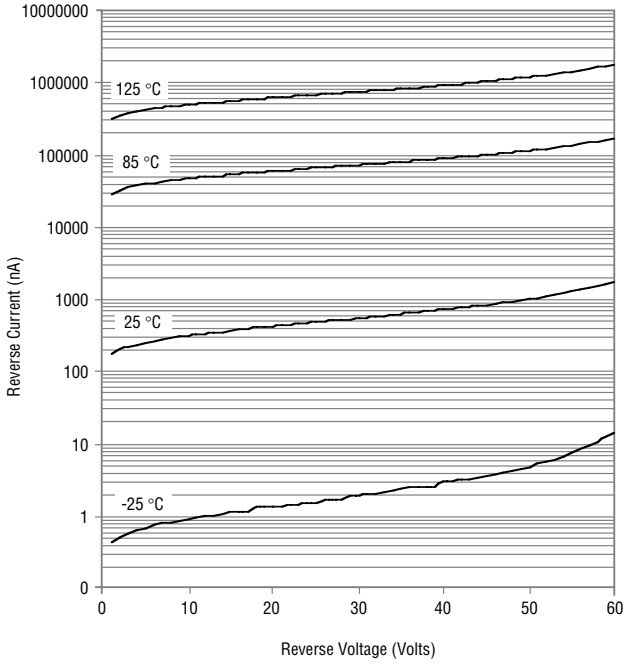


Rating and Characteristic Curves: CD214A-B360

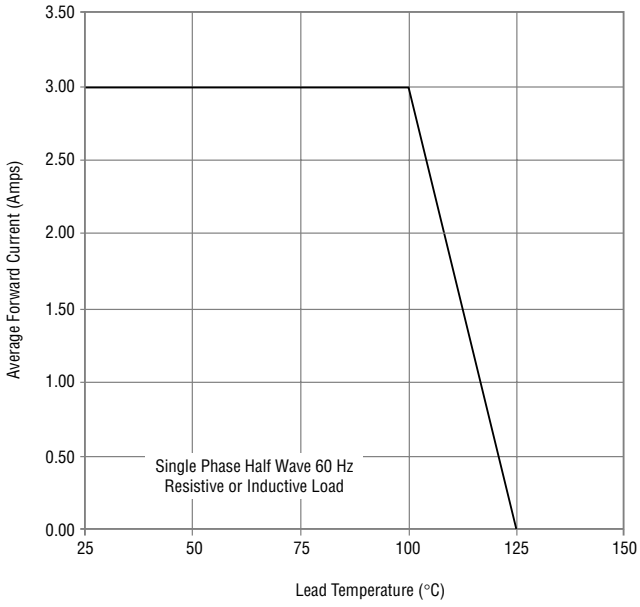
Forward Characteristics



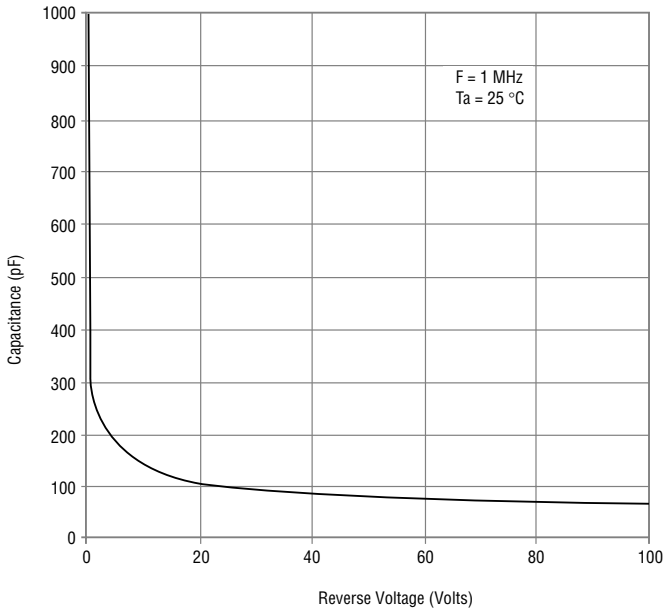
Reverse Characteristics



Derating Curve

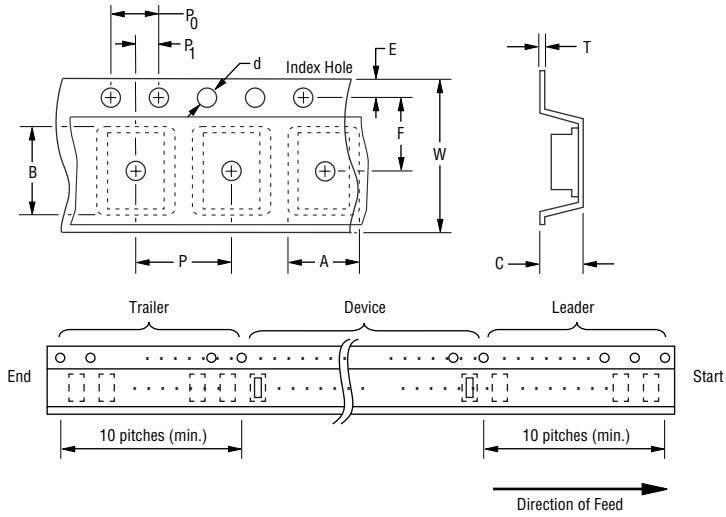


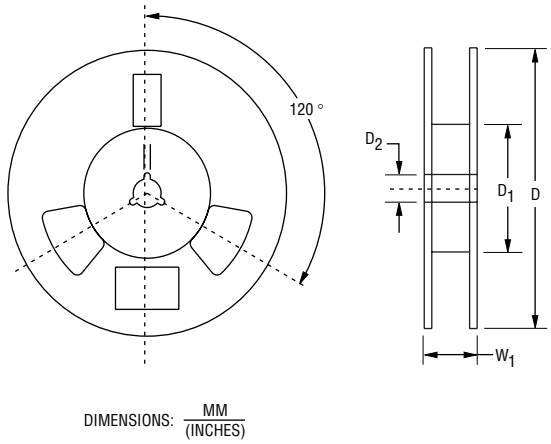
Capacitance Between Terminals



Packaging Information

The product will be dispensed in Tape and Reel format (see diagram below).

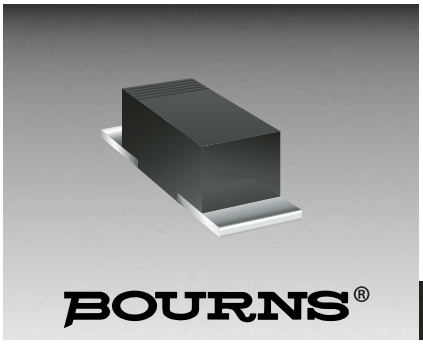




DIMENSIONS: MM (INCHES)

Devices are packed in accordance with EIA standard RS-481-A and specifications shown here.

Item	Symbol	SMA (DO-214AC)
Carrier Width	A	2.90 ± 0.10 (0.114 - 0.004)
Carrier Length	B	5.59 ± 0.10 (0.220 - 0.004)
Carrier Depth	C	2.36 ± 0.10 (0.093 - 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 ± 0.20 (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	0.30 ± 0.10 (0.012 - 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	--	5,000



Features

- Low profile package
- Surface mount
- Very low forward voltage drop

Applications

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

CD1607-B120 ~ B140L Schottky Barrier Rectifier 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 chip package 1607 (Mini-SMA) size format, which offer PCB real estate savings and are considerably smaller than competitive parts. The Schottky 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, easy to handle on standard pick and place equipment and their flat configuration makes roll away much more difficult.

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

Parameter	Symbol	CD1607-				Unit
		B120	B120L	B140	B140L	
Forward Voltage (Max.) (I_f = 1 A)	V_F	0.5	0.38	0.5	0.4	V
Typical Junction Capacitance*	C_T	110	100	110	110	pF
Reverse Current (Max.) at Rated V_R)	I_R	0.5	1.0	0.5	1.0	mA

* 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	CD1607-				Unit
		B120	B120L	B140	B140L	
Repetitive Peak Reverse Voltage	V_{RRM}	20	20	40	40	V
Reverse Voltage	V_R	20	20	40	40	V
Maximum RMS Voltage	V_{RMS}	14	14	28	28	V
Avg. Forward Current	I_O	1				A
Forward Current, Surge Peak (60 Hz, 1 cycle)	I_{surge}	30*				A
Typical Thermal Resistance**	$R_{\theta JL}$	20				°C/W
Storage Temperature	T_{STG}	-55 to +150				°C
Junction Temperature	T_J	-55 to +125				°C

** Thermal resistance junction to lead.

* Condition: 8.3 ms single half sine-wave superimposed on rate load (JEDEC method).

How To Order

CD 1607 - B 1 20 L

Common Code
Chip Diode

Package
• 1607 = Mini-SMA

Model
B = Schottky Barrier Series

Average Forward Current (I_O) Code
1 = 1 A (Code x 1000 mA = Average Forward Current)

Reverse Voltage (V_R) Code
20 = 20 V
40 = 40 V

Forward Voltage Suffix
L = Low Forward Voltage V_f (CD1607-B120L, CD1607-B140L)

Reliable Electronic Solutions

Asia-Pacific:
Tel: +886-2 2562-4117 • Fax: +886-2 2562-4116
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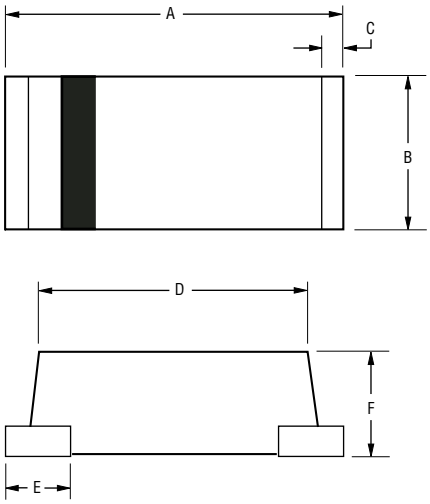
Tel: +41-41 768 5555 • Fax: +41-41 768 5510
North America:
Tel: +1-909 781-5500 • Fax: +1-909 781-5700
www.bourns.com

CD1607-B120 ~ B140L Schottky Barrier Rectifier Chip Diode

BOURNS®

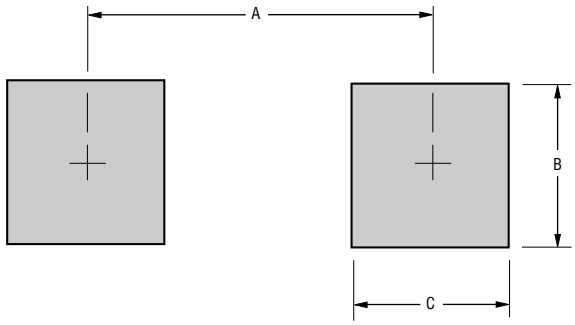
Product Dimensions



Dimension	Mini-SMA
A	3.70 - 4.10 (0.146 - 0.161)
B	1.40 - 1.80 (0.055 - 0.071)
C	0.30 (0.012) TYP.
D	2.40 - 2.80 (0.094 - 0.110)
E	2 PLCS. 0.90 (0.035) TYP.
F	1.40 - 1.60 (0.055 - 0.063)

DIMENSIONS: MM (INCHES)

Recommended Pad Layout



Dimension	Mini-SMA
A (Max.)	3.50 (0.138)
B (Min.)	1.50 (0.059)
C (Min.)	1.50 (0.059)

DIMENSIONS: MM (INCHES)

Physical Specifications

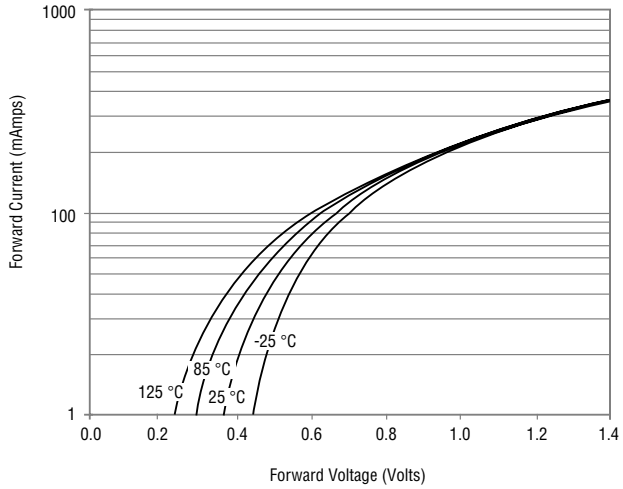
Case.....1607(1401) Molded plastic
Polarity .....Color band denotes cathode end
Terminals.....Solderable per MIL-STD-750, Method 206
Weight .....Approximately 0.04 grams

Typical Part Marking

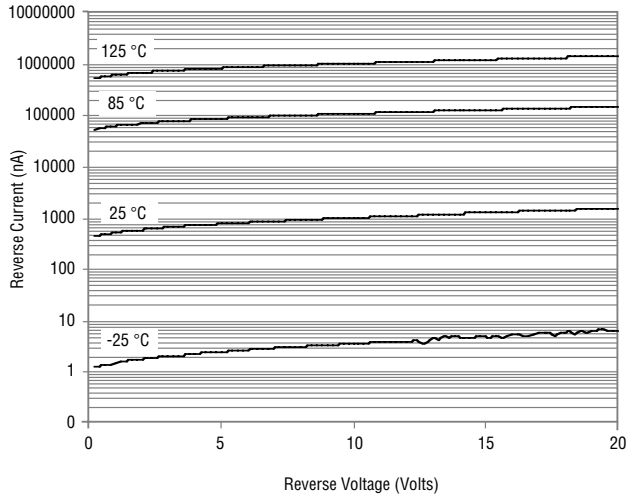
CD1607-B120 .....I2
CD1607-B120L L2
CD1607-B140 .....I4
CD1607-B140L L4

Rating and Characteristic Curves: CD1607-B120

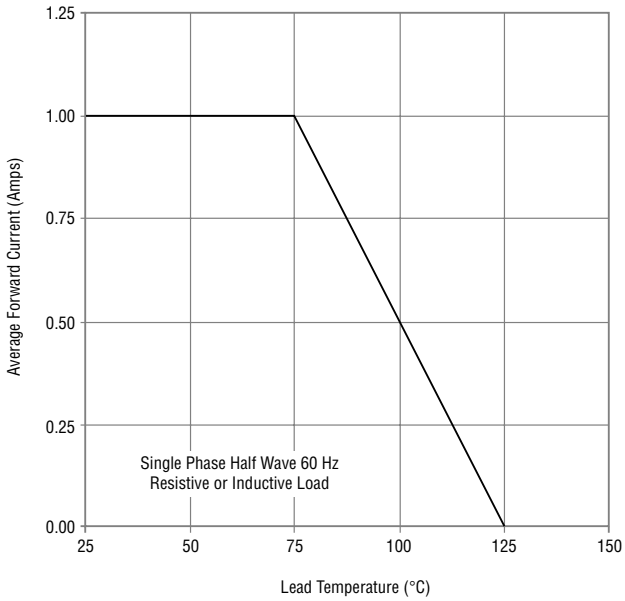
Forward Characteristics



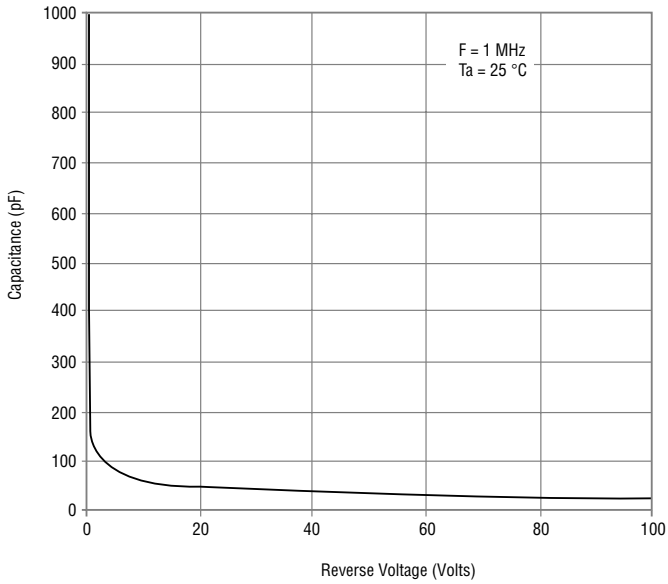
Reverse Characteristics



Derating Curve

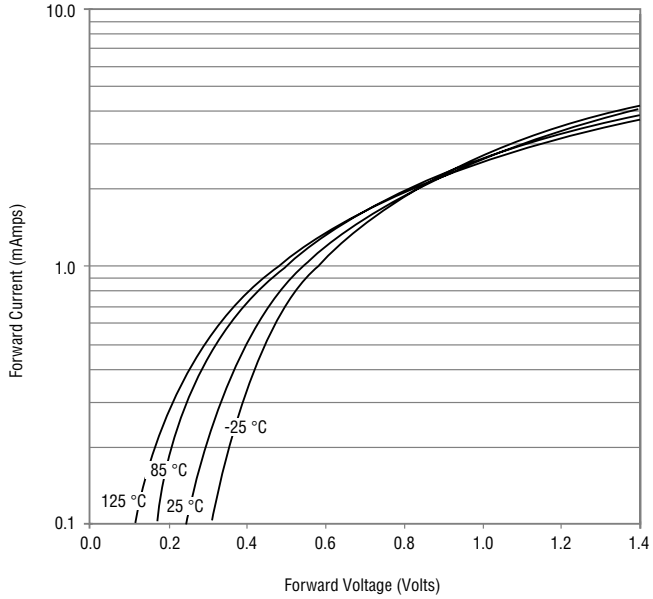


Capacitance Between Terminals

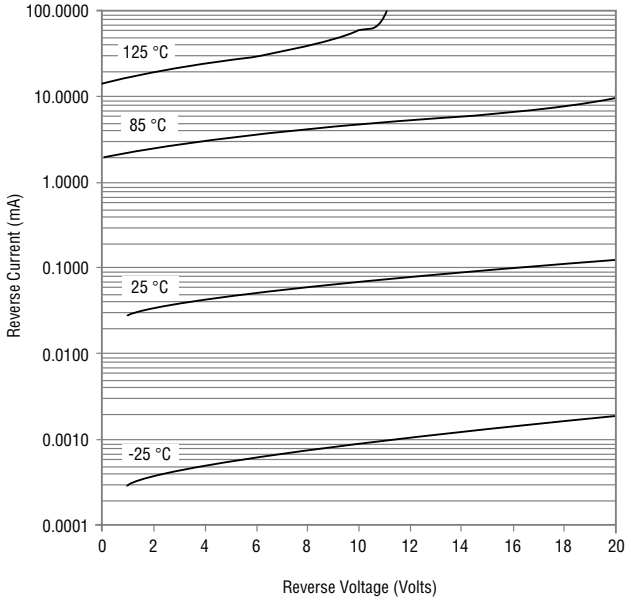


Rating and Characteristic Curves: CD1607-B120L

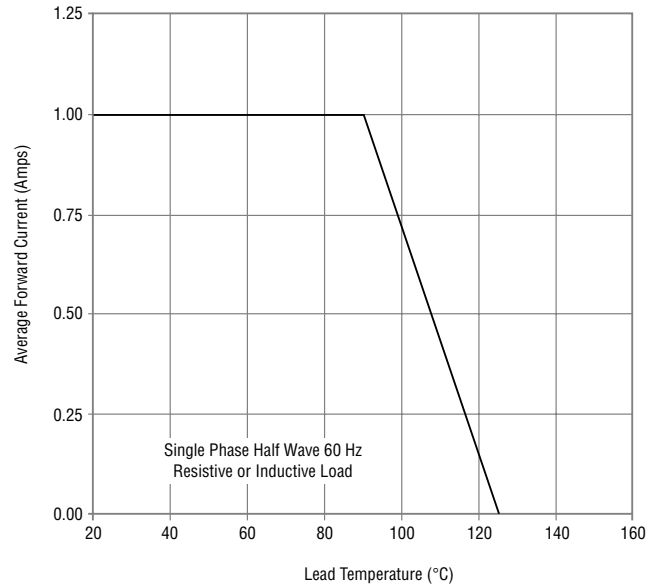
Forward Characteristics



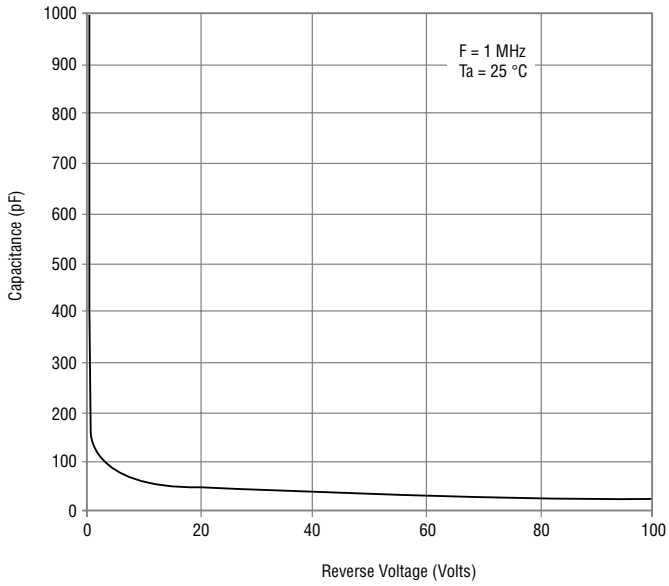
Reverse Characteristics



Derating Curve

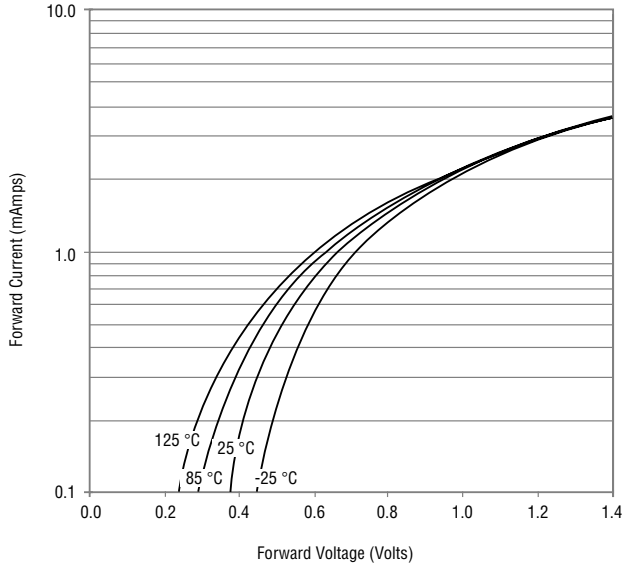


Capacitance Between Terminals

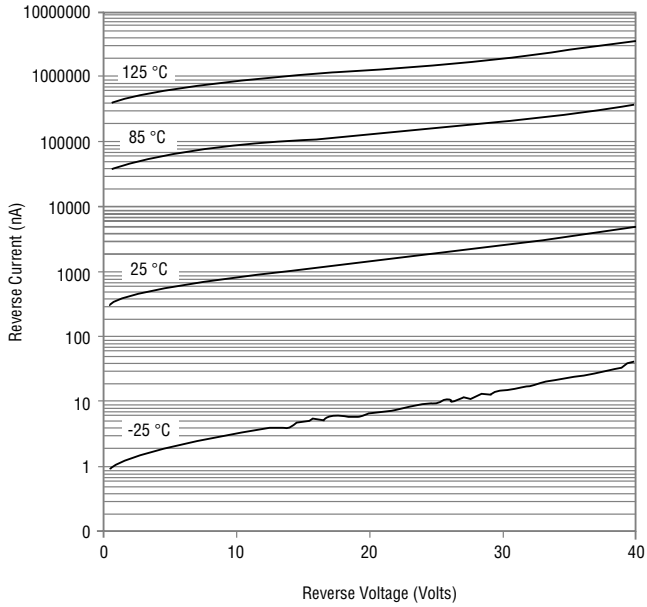


Rating and Characteristic Curves: CD1607-B140

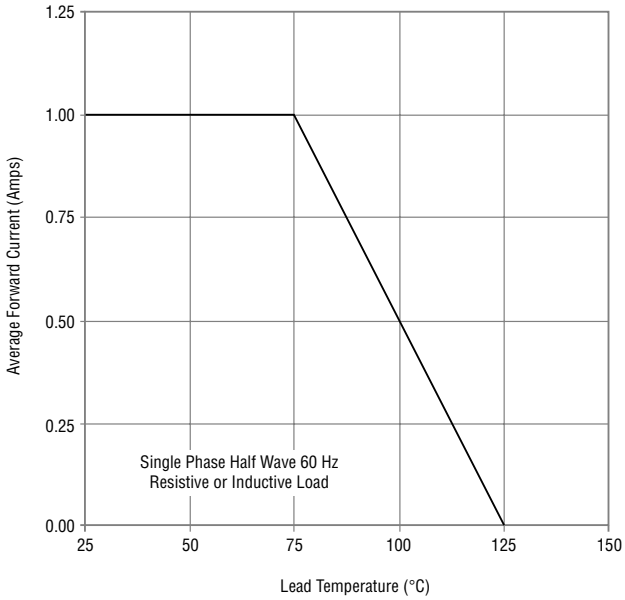
Forward Characteristics



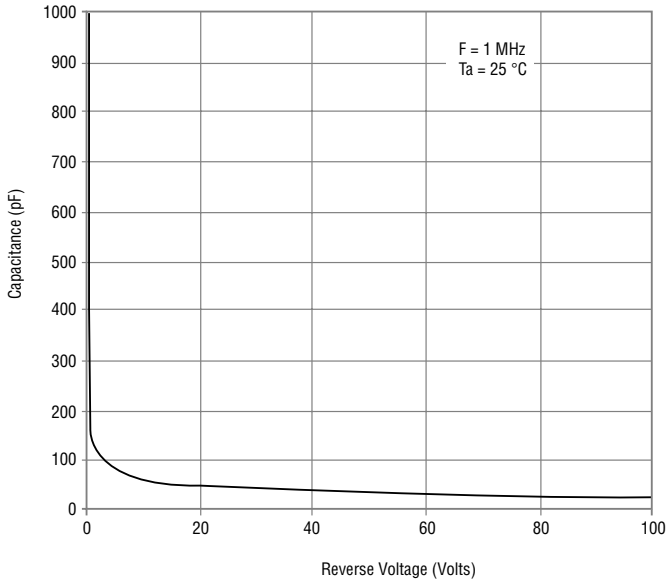
Reverse Characteristics



Derating Curve

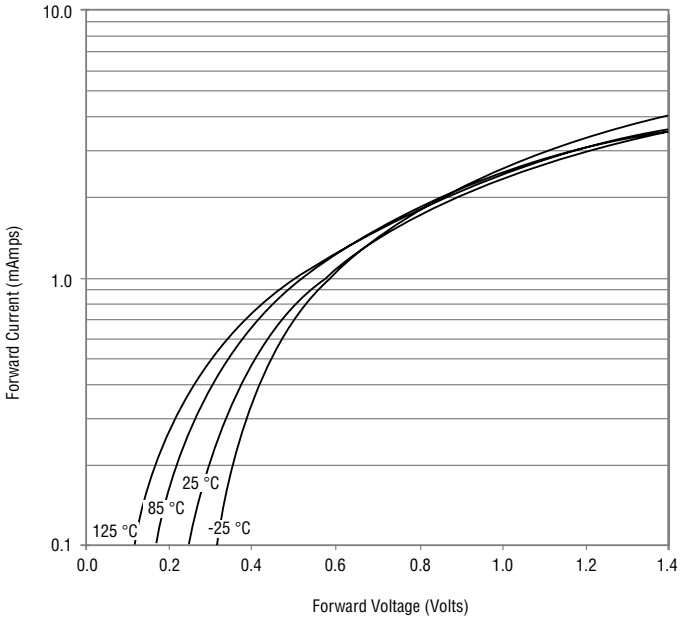


Capacitance Between Terminals

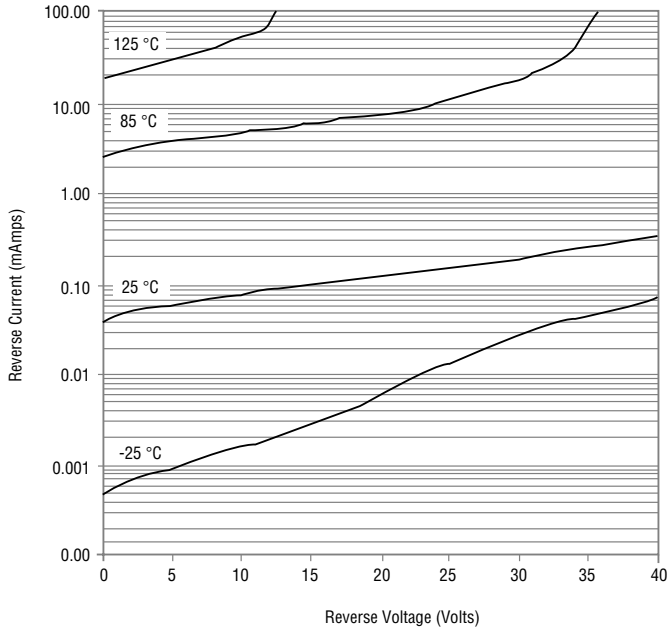


Rating and Characteristic Curves: CD1607-B140L

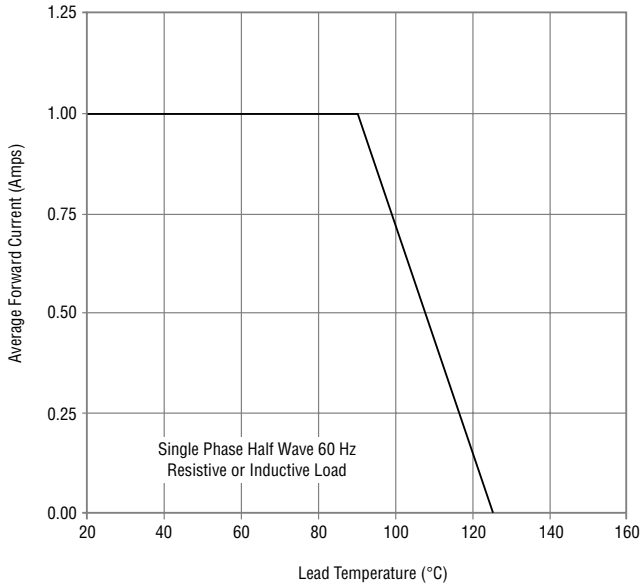
Forward Characteristics



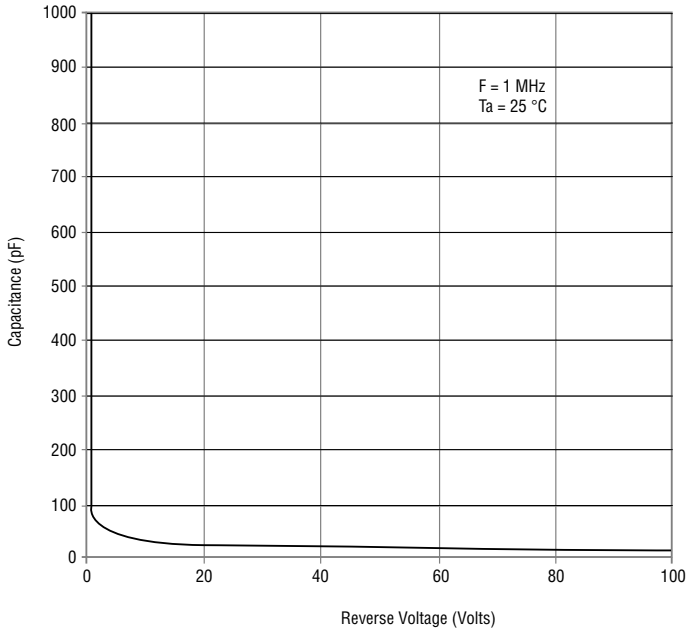
Reverse Characteristics



Derating Curve

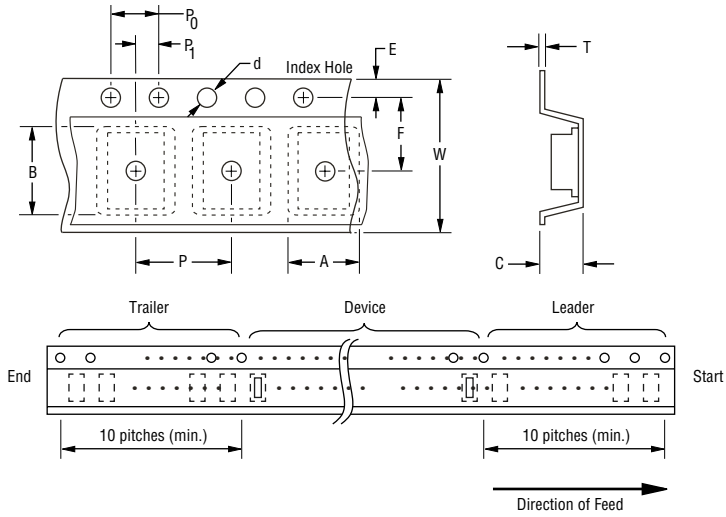


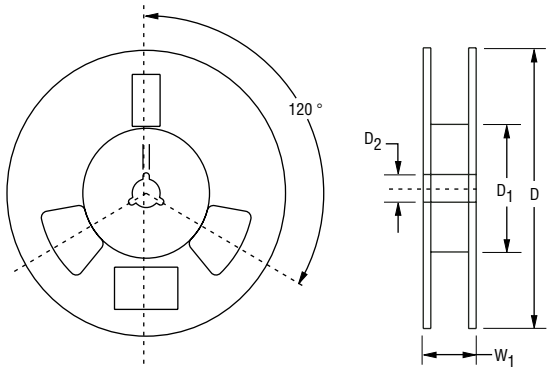
Capacitance Between Terminals



Packaging Information

The product will be dispensed in Tape and Reel format (see diagram below).



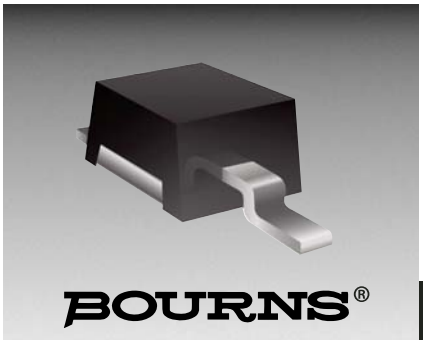


DIMENSIONS: MM (INCHES)

Devices are packed in accordance with EIA standard RS-481-A and specifications shown here.

Item	Symbol	1607
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	D_1	80.0 (3.150) 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	3.50 ± 0.05 (0.138 - 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	0.20 ± 0.10 (0.008 - 0.004)
Tape Width	W	8.00 ± 0.20 (0.315 - 0.008)
Reel Width	W_1	13.5 (0.531) MAX.
Quantity per Reel	--	2,500

REV. 12/10/03



BOURNS®

Features

- 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 the 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.) (at 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_{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 °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	 $R_{\theta JL}$ $R_{\theta JTAB}$ $R_{\theta JA}$	 35 20 250				 °C/W °C/W °C/W
Storage Temperature	T_{STG}	-55 to +125				°C
Junction Temperature	T_J	-55 to +150				°C

** Surge Current 8.3 ms single phase, half sine wave, 60 Hz (JEDEC Method).
*** Pulse Test; Pulse Width = 300 uS, Duty Cycle = 2 %.

CD216A-B120L ~ B140 MITE Chip Diode

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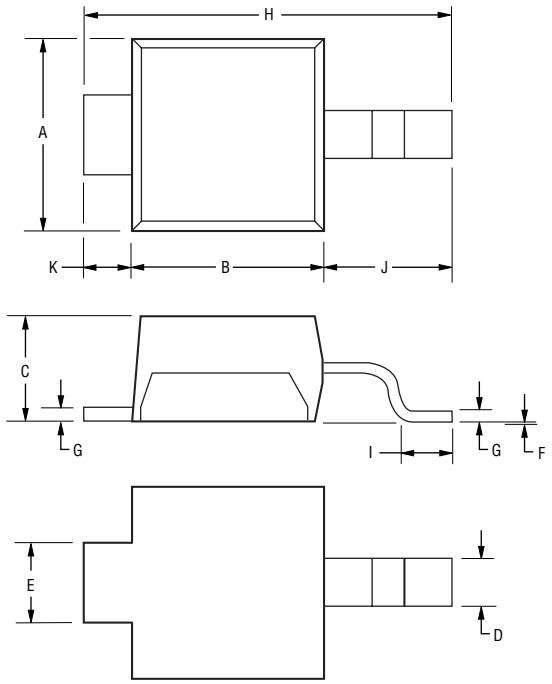
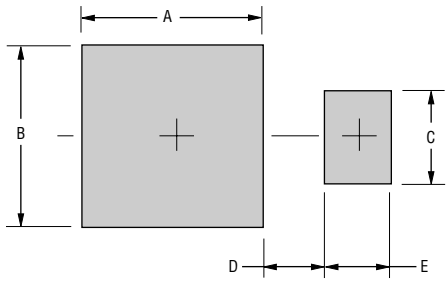
Product Dimensions



Dimension	(DO-216AA)
A	1.75 - 2.05 (0.069 - 0.081)
B	1.80 - 2.20 (0.071 - 0.087)
C	0.95 - 1.25 (0.037 - 0.049)
D	0.42 - 0.68 (0.017 - 0.027)
E	0.70 - 1.00 (0.028 - 0.039)
F	-0.05 - +0.10 (0.002 - 0.004)
G	0.10 - 0.25 (0.004 - 0.010)
H	3.65 - 3.95 (0.144 - 0.156)
I	0.40 - 0.70 (0.016 - 0.028)
J	1.10 - 1.50 (0.043 - 0.059)
K	0.20 - 0.80 (0.008 - 0.060)

DIMENSIONS: MM (INCHES)

Recommended Pad Layout



Dimension	DO-216AA
A (Max.)	2.67 (0.105)
B (Min.)	2.54 (0.100)
C (Min.)	1.27 (0.050)
D (Max.)	0.635 (0.025)
E (Min.)	0.762 (0.030)

Physical Specifications

Case.....JEDEC DO-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

Common Code
Chip Diode

Package
• 216A = DO-216AA

Model
B = Schottky Barrier Series

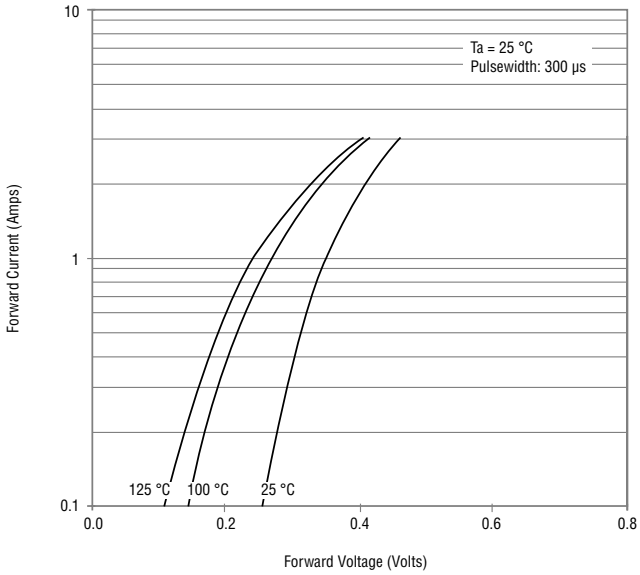
Average Forward Current (I_O) Code
1 = 1 A (Code x 1000 mA = Average Forward Current)

Reverse Voltage (V_R) Code
20 = 20 V
30 = 30 V
40 = 40 V

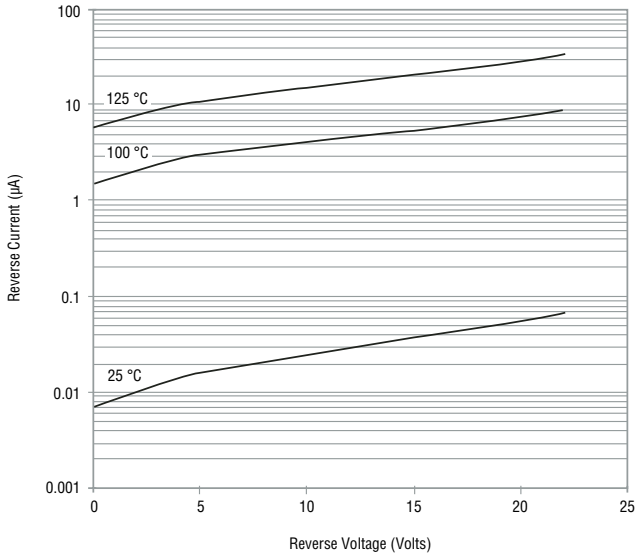
Forward Voltage Suffix
L = Low Forward Voltage V_f (CD216-B120L, CD216-B130L)
R = Low Leakage Current IR (CD216-B120R)

Rating and Characteristic Curves: CD216A-B120L

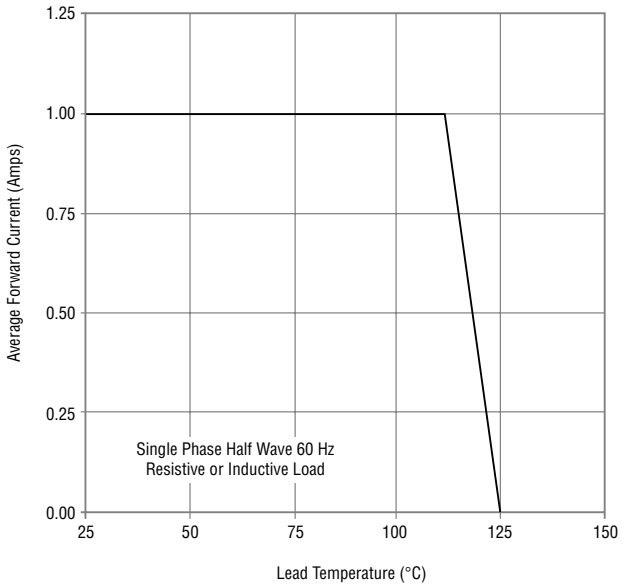
Forward Characteristics



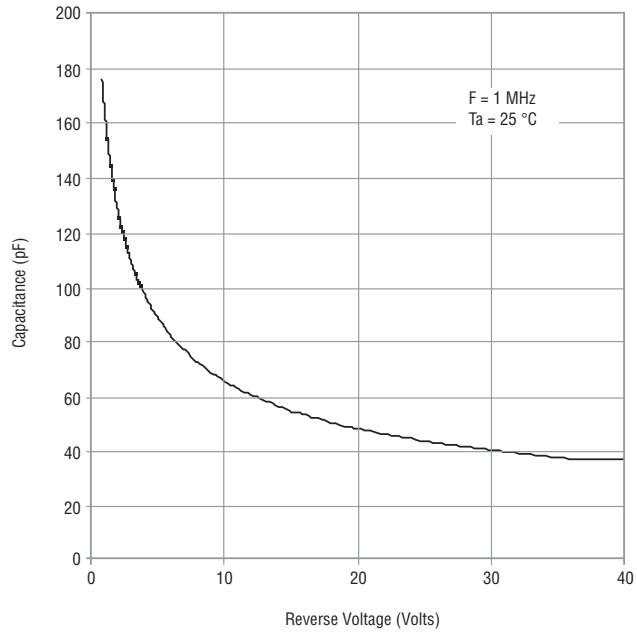
Reverse Characteristics



Derating Curve

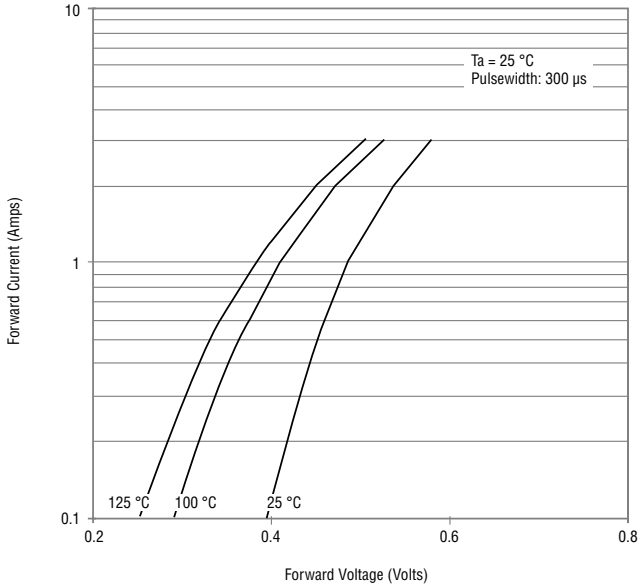


Capacitance Between Terminals

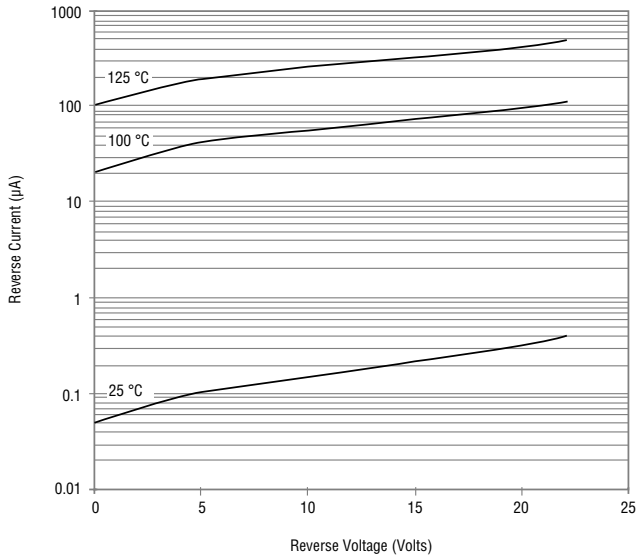


Rating and Characteristic Curves: CD216A-B120R

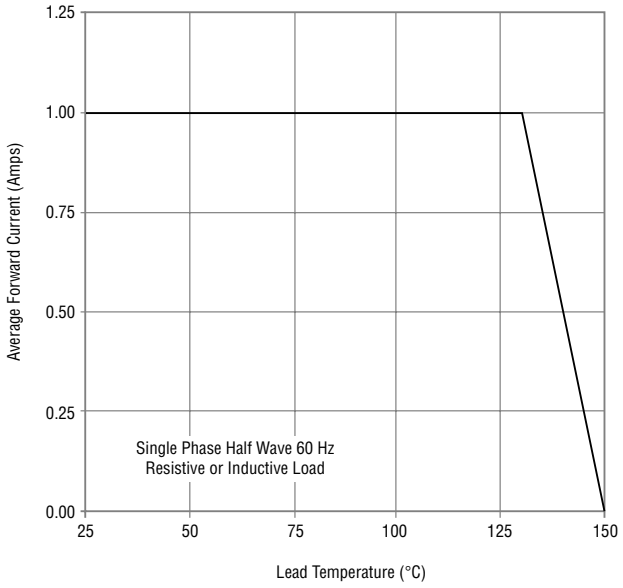
Forward Characteristics



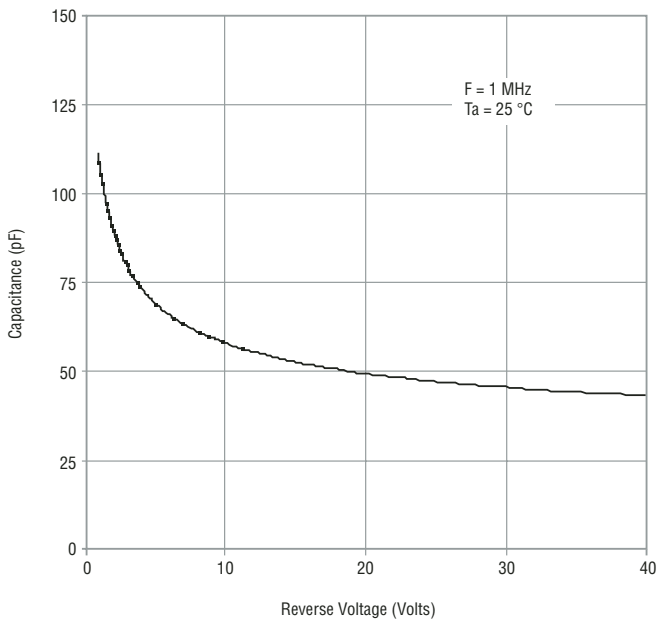
Reverse Characteristics



Derating Curve

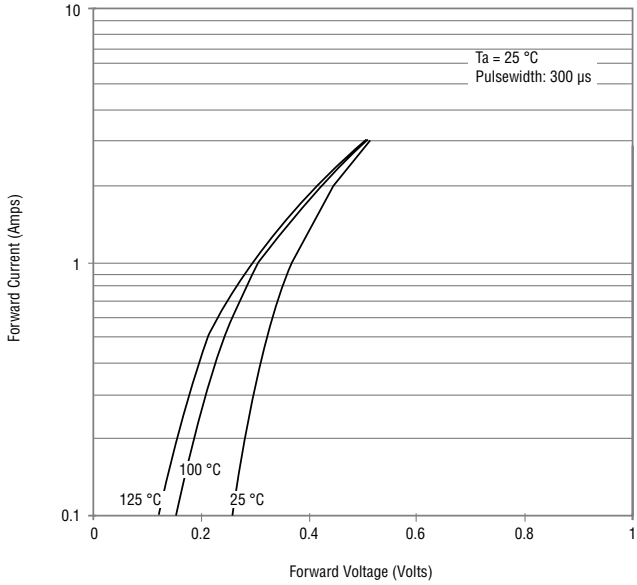


Capacitance Between Terminals

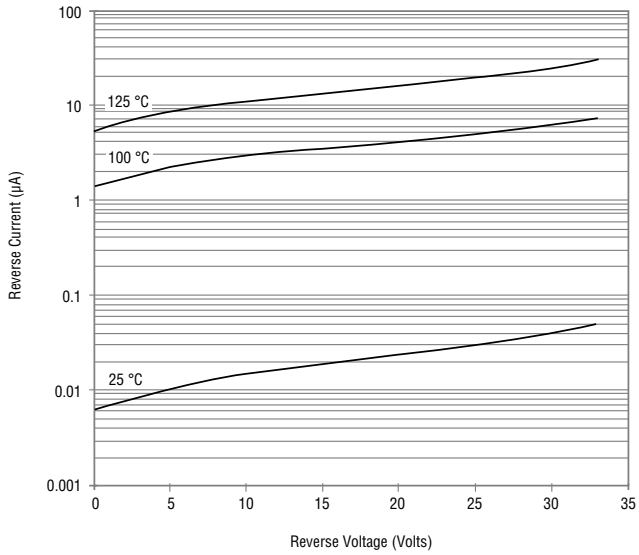


Rating and Characteristic Curves: CD216A-B130L

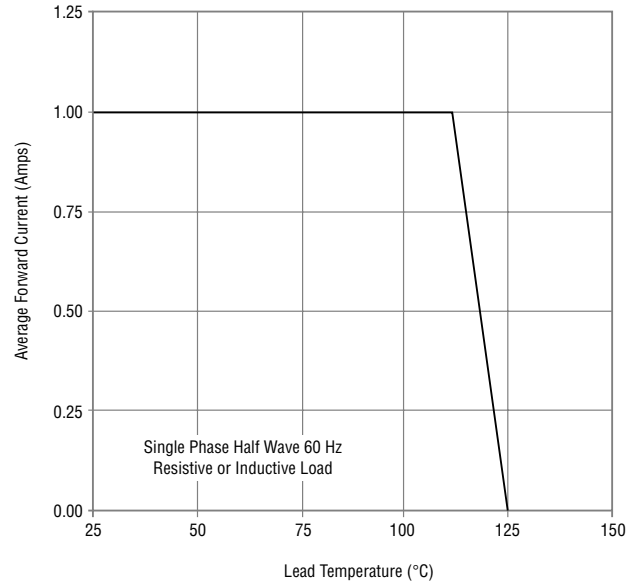
Forward Characteristics



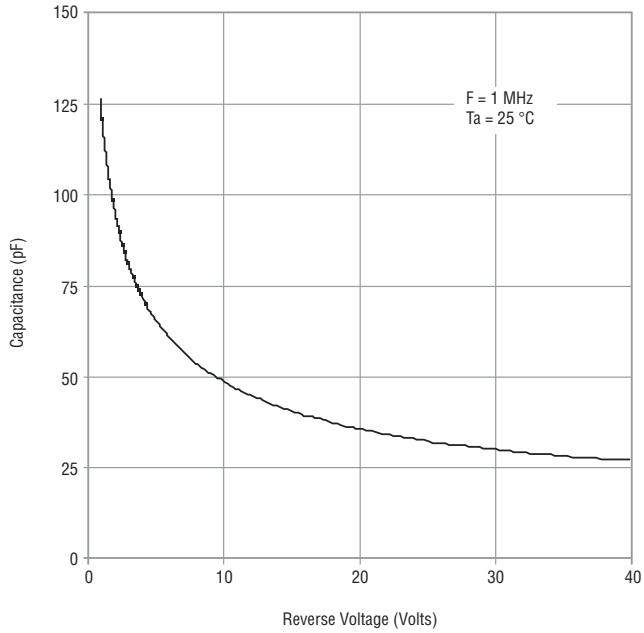
Reverse Characteristics



Derating Curve

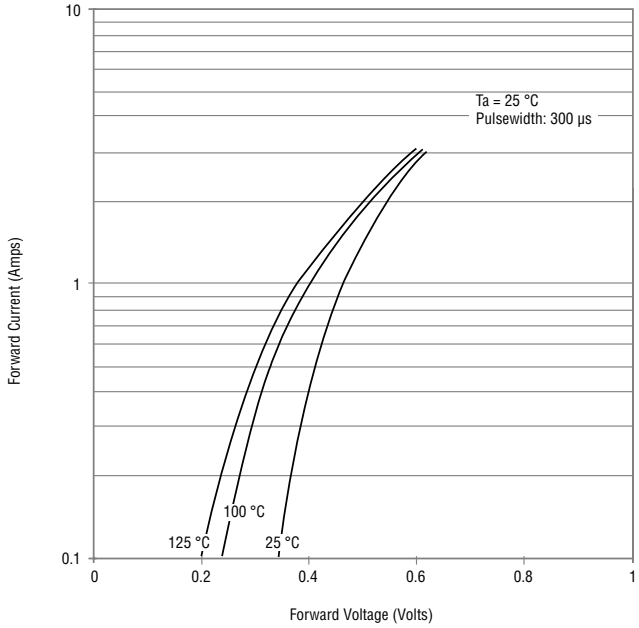


Capacitance Between Terminals

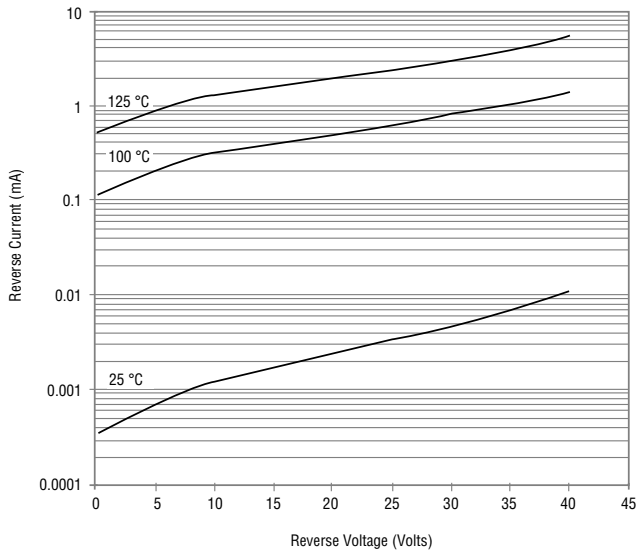


Rating and Characteristic Curves: CD216A-B140

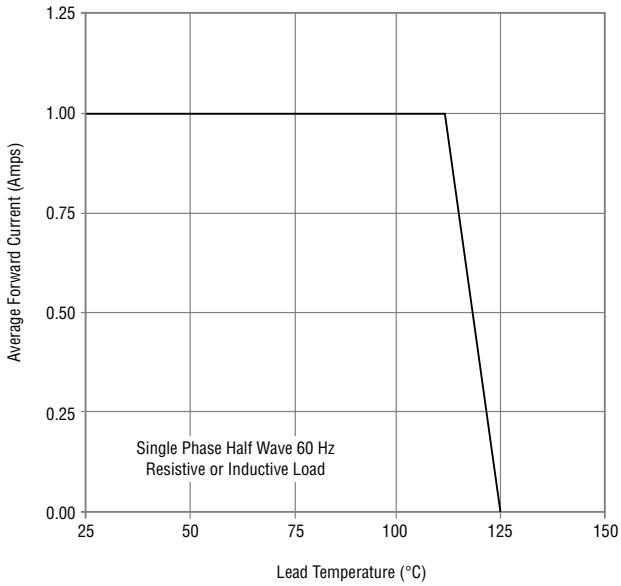
Forward Characteristics



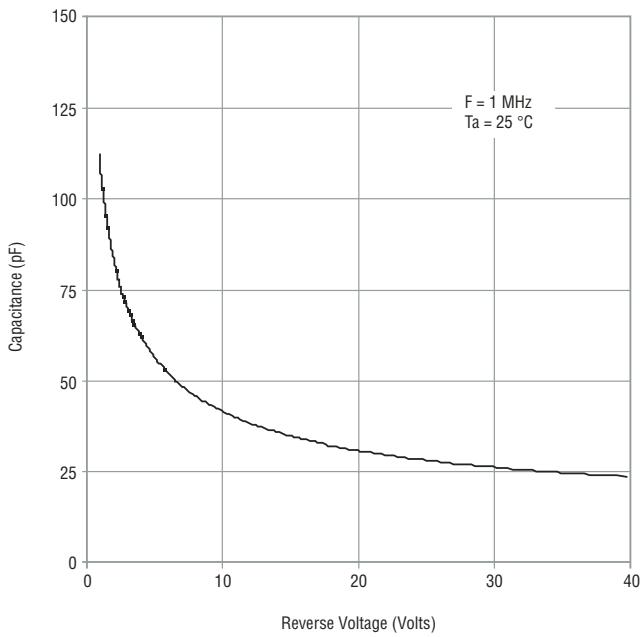
Reverse Characteristics



Derating Curve

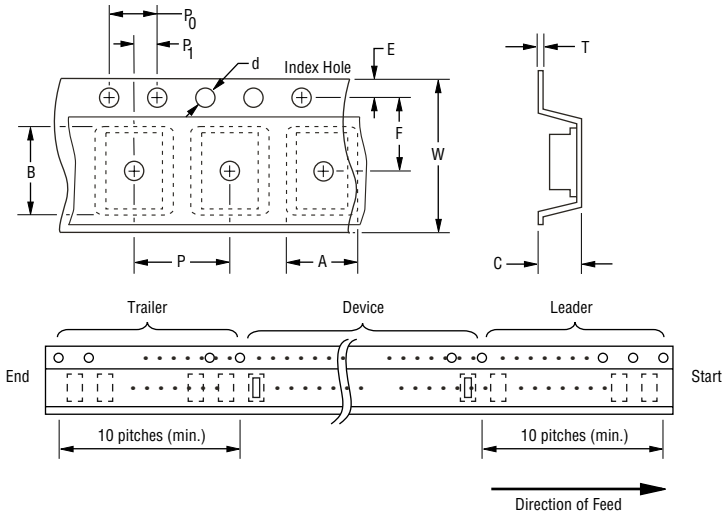


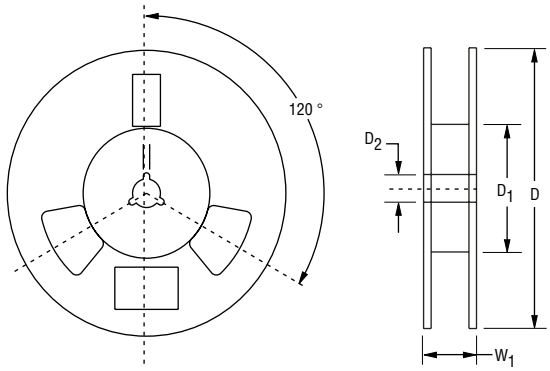
Capacitance Between Terminals



Packaging Information

The product will be dispensed in Tape and Reel format (see diagram below).





DIMENSIONS: MM / (INCHES)

Devices are packed in accordance with EIA standard RS-481-A and specifications shown here.

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	330 / 178.0 (12.992 / 7.007)
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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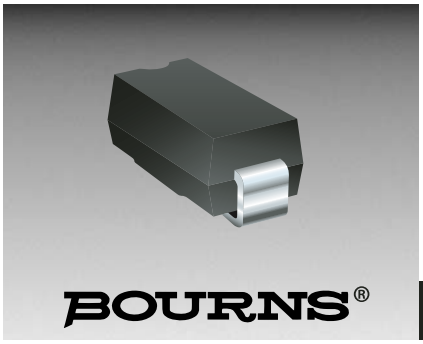

BOURNS®

Features

- Surface Mount SMA package
- Standoff Voltage: 5.0 to 170 volts
- Power Dissipation: 400 watts

CD214A Transient Voltage Suppressor Diode Series

General Information

The markets of portable communications, computing and video equipment are challenging the semiconductor industry to develop increasingly smaller electronic components.

Bourns offers Transient Voltage Suppressor Diodes for surge and ESD protection applications, in compact chip package DO-214AC (SMA) size format. The Transient Voltage Suppressor series offers a choice of Working Peak Reverse Voltage from 5 V up to 170 V and Breakdown Voltage up to 200 V. Typical fast response times are less than 1.0 ns for unidirectional devices and less than 5.0 ns for bidirectional devices from 0 V to Minimum Breakdown Voltage.

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

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

Parameter	Symbol	Value	Unit
Minimum Peak Pulse Power Dissipation (T_P = 1 ms) (Note 1,2)	P_{PK}	400	Watts
Peak Forward Surge Current 8.3ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) (Note 3)	I_{FSM}	40	Amps
Steady State Power Dissipation @ T_L = 75 °C	$P_{M(AV)}$	1.0	Watts
Maximum Instantaneous Forward Voltage @ I_{PP} = 35 A (For Unidirectional Units Only)	V_F	3.5	Volts
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C

1. Non-repetitive current pulse, per Pulse Waveform graph and derated above TA = 25 °C per Pulse Derating Curve.
2. Thermal Resistance Junction to Lead.
3. 8.3 ms Single Half-Sine Wave duty cycle = 4 pulses maximum per minute (unidirectional units only).
4. Single Phase, Half Wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20 %.

How To Order

CD 214A - T 5.0 CA

Common Code
Chip Diode

Package
214A = SMA/DO-214AC
214B = SMB/DO-214AA
214C = SMC/DO-214AB

Model
T = Transient Voltage Suppressor Series

Working Peak Reverse Voltage
5.0 = 5.0 V_{RWM} (Volts)
170 = 170 V_{RWM} (Volts)

Suffix
A = 5 % Tolerance Device
C = Bidirectional Device
CA = 5 % Tolerance Bidirectional Device
__ = 10 % Tolerance Unidirectional Device

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Electrical Characteristics (@T_A = 25 °C unless otherwise noted)

Unidirectional Device		Bidirectional Device		Breakdown Voltage V_{BR} (Volts)			Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{RWM}	Maximum Reverse Voltage @IRSM	Maximum Reverse Surge Current
Part Number	Part Marking	Part Number	Part Marking	Min.	Max.	@ I_T (mA)	V_{RWM} (Volts)	I_R (uA)	V_{RSM} (Volts)	I_{RSM} (Amps)
CD214A-T5.0	HD	CD214A-T5.0C	TD	6.40	7.30	10	5.0	800 / 1600	9.6	41.6
CD214A-T5.0A	HE	CD214A-T5.0CA	TE	6.40	7.00	10	5.0	800 / 1600	9.2	43.5
CD214A-T6.0	HF	CD214A-T6.0C	TF	6.67	8.15	10	6.0	800 / 1600	11.4	35.1
CD214A-T6.0A	HG	CD214A-T6.0CA	TG	6.67	7.37	10	6.0	800 / 1600	10.3	38.8
CD214A-T6.5	HH	CD214A-T6.5C	TH	7.22	8.82	10	6.5	500 / 1000	12.3	32.5
CD214A-T6.5A	HK	CD214A-T6.5CA	TK	7.22	7.98	10	6.5	500 / 1000	11.2	35.7
CD214A-T7.0	HL	CD214A-T7.0C	TL	7.78	9.51	10	7.0	200 / 400	13.3	30.1
CD214A-T7.0A	HM	CD214A-T7.0CA	TM	7.78	8.60	10	7.0	200 / 400	12.0	33.3
CD214A-T7.5	HN	CD214A-T7.5C	TN	8.33	10.3	1.0	7.5	100 / 200	14.3	28.0
CD214A-T7.5A	HP	CD214A-T7.5CA	TP	8.33	9.21	1.0	7.5	100 / 200	12.9	31.0
CD214A-T8.0	HQ	CD214A-T8.0C	TQ	8.89	10.9	1.0	8.0	50 / 100	15.0	26.5
CD214A-T8.0A	HR	CD214A-T8.0CA	TR	8.89	9.83	1.0	8.0	50 / 100	13.6	29.4
CD214A-T8.5	HS	CD214A-T8.5C	TS	9.44	11.5	1.0	8.5	10 / 20	15.9	25.1
CD214A-T8.5A	HT	CD214A-T8.5CA	TT	9.44	10.4	1.0	8.5	10 / 20	14.4	27.7
CD214A-T9.0	HU	CD214A-T9.0C	TU	10.0	12.2	1.0	9.0	5 / 10	16.9	23.6
CD214A-T9.0A	HV	CD214A-T9.0CA	TV	10.0	11.1	1.0	9.0	5 / 10	15.4	26.0
CD214A-T10	HW	CD214A-T10C	TW	11.1	13.6	1.0	10	5 / 10	18.8	21.2
CD214A-T10A	HX	CD214A-T10CA	TX	11.1	12.3	1.0	10	5 / 10	17.0	23.5
CD214A-T11	HY	CD214A-T11C	TY	12.2	14.9	1.0	11	5.0	20.1	20.0
CD214A-T11A	HZ	CD214A-T11CA	TZ	12.2	13.2	1.0	11	5.0	18.2	22.0
CD214A-T12	ID	CD214A-T12C	UD	13.3	16.3	1.0	12	5.0	22.0	18.1
CD214A-T12A	IE	CD214A-T12CA	UE	13.3	14.7	1.0	12	5.0	19.9	20.1
CD214A-T13	IF	CD214A-T13C	UF	14.4	17.6	1.0	13	5.0	23.8	16.8
CD214A-T13A	IG	CD214A-T13CA	UG	14.4	15.9	1.0	13	5.0	21.5	18.6
CD214A-T14	IH	CD214A-T14C	UH	15.6	19.1	1.0	14	5.0	25.8	15.5
CD214A-T14A	IK	CD214A-T14CA	UK	15.6	17.2	1.0	14	5.0	23.2	17.2
CD214A-T15	IL	CD214A-T15C	UL	16.7	20.4	1.0	15	5.0	26.9	14.8
CD214A-T15A	IM	CD214A-T15CA	UM	16.7	18.5	1.0	15	5.0	24.4	16.4
CD214A-T16	IN	CD214A-T16C	UN	17.8	21.8	1.0	16	5.0	28.8	13.8
CD214A-T16A	IP	CD214A-T16CA	UP	17.8	19.7	1.0	16	5.0	26.0	15.3
CD214A-T17	IQ	CD214A-T17C	UQ	18.9	23.1	1.0	17	5.0	30.5	13.1
CD214A-T17A	IR	CD214A-T17CA	UR	18.9	20.9	1.0	17	5.0	27.6	14.5
CD214A-T18	IS	CD214A-T18C	US	20.0	24.4	1.0	18	5.0	32.2	12.4
CD214A-T18A	IT	CD214A-T18CA	UT	20.0	22.1	1.0	18	5.0	29.2	13.7
CD214A-T20	IU	CD214A-T20C	UU	22.2	27.1	1.0	20	5.0	35.8	11.1
CD214A-T20A	IV	CD214A-T20CA	UV	22.2	24.5	1.0	20	5.0	32.4	12.3
CD214A-T22	IW	CD214A-T22C	UW	24.4	29.8	1.0	22	5.0	39.4	10.1
CD214A-T22A	IX	CD214A-T22CA	UX	24.4	26.9	1.0	22	5.0	35.5	11.2
CD214A-T24	IY	CD214A-T24C	UY	26.7	32.6	1.0	24	5.0	43.0	9.3
CD214A-T24A	IZ	CD214A-T24CA	UZ	26.7	29.5	1.0	24	5.0	38.9	10.3
CD214A-T26	JD	CD214A-T26C	VD	28.9	35.3	1.0	26	5.0	46.6	8.6
CD214A-T26A	JE	CD214A-T26CA	VE	28.9	31.9	1.0	26	5.0	42.1	9.5
CD214A-T28	JF	CD214A-T28C	VF	31.1	38	1.0	28	5.0	50.0	8.0
CD214A-T28A	JG	CD214A-T28CA	VG	31.1	34.4	1.0	28	5.0	45.4	8.8
CD214A-T30	JH	CD214A-T30C	VH	33.3	40.7	1.0	30	5.0	53.5	7.5
CD214A-T30A	JK	CD214A-T30CA	VK	33.3	36.8	1.0	30	5.0	48.4	8.3
CD214A-T33	JL	CD214A-T33C	VL	36.7	44.9	1.0	33	5.0	59.0	6.8
CD214A-T33A	JM	CD214A-T33CA	VM	36.7	40.6	1.0	33	5.0	53.3	7.5

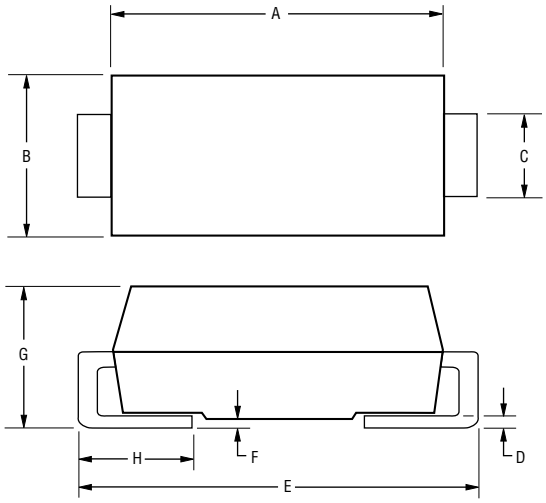
Notes:
1. Suffix 'A' denotes a 5 % tolerance device.
2. Suffix 'C' denotes a bidirectional device.
3. Suffix 'CA' denotes a 5 % tolerance bidirectional device.
4. No suffix denotes a 10 % tolerance unidirectional device.
5. For bidirectional devices with a V_R of 10 volts or less, the I_R limit is double.
6. For unidirectional devices with a V_F max. of 3.5 V at an I_F of 35 A, 0.5 Sine Wave of 8.3 ms Pulse Width.

Electrical Characteristics (@T_A = 25 °C unless otherwise noted)

Unidirectional Device		Bidirectional Device		Breakdown Voltage V_{BR} (Volts)			Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{RWM}	Maximum Reverse Voltage @IRSM	Maximum Reverse Surge Current
Part Number	Part Marking	Part Number	Part Marking	Min.	Max.	@ I_T (mA)	V_{RWM} (Volts)	I_R (uA)	V_{RSM} (Volts)	I_{RSM} (Amps)
CD214A-T36	JN	CD214A-T36C	VN	40	48.9	1.0	36	5.0	64.3	6.2
CD214A-T36A	JP	CD214A-T36CA	VP	40	44.2	1.0	36	5.0	58.1	6.9
CD214A-T40	JQ	CD214A-T40C	VQ	44.4	54.3	1.0	40	5.0	71.4	5.6
CD214A-T40A	JR	CD214A-T40CA	VR	44.4	49.1	1.0	40	5.0	64.5	6.2
CD214A-T43	JS	CD214A-T43C	VS	47.8	58.4	1.0	43	5.0	76.7	5.2
CD214A-T43A	JT	CD214A-T43CA	VT	47.8	52.8	1.0	43	5.0	69.4	5.7
CD214A-T45	JU	CD214A-T45C	VU	50	61.1	1.0	45	5.0	80.3	5.0
CD214A-T45A	JV	CD214A-T45CA	VV	50	55.3	1.0	45	5.0	72.7	5.5
CD214A-T48	JW	CD214A-T48C	VW	53.3	65.1	1.0	48	5.0	85.5	4.7
CD214A-T48A	JX	CD214A-T48CA	VX	53.3	58.9	1.0	48	5.0	77.4	5.2
CD214A-T51	JY	CD214A-T51C	VY	56.7	69.3	1.0	51	5.0	91.1	4.4
CD214A-T51A	JZ	CD214A-T51CA	VZ	56.7	62.7	1.0	51	5.0	82.4	4.9
CD214A-T54	RD	CD214A-T54C	WD	60	73.3	1.0	54	5.0	96.3	4.2
CD214A-T54A	RE	CD214A-T54CA	WE	60	66.3	1.0	54	5.0	87.1	4.6
CD214A-T58	RF	CD214A-T58C	WF	64.4	78.7	1.0	58	5.0	103	3.9
CD214A-T58A	RG	CD214A-T58CA	WG	64.4	71.2	1.0	58	5.0	93.6	4.3
CD214A-T60	RH	CD214A-T60C	WH	66.7	81.5	1.0	60	5.0	107	3.7
CD214A-T60A	RK	CD214A-T60CA	WK	66.7	73.7	1.0	60	5.0	96.8	4.1
CD214A-T64	RL	CD214A-T64C	WL	71.1	86.4	1.0	64	5.0	114	3.5
CD214A-T64A	RM	CD214A-T64CA	WM	71.1	78.6	1.0	64	5.0	103	3.9
CD214A-T70	RN	CD214A-T70C	WN	77.8	95.1	1.0	70	5.0	125	3.2
CD214A-T70A	RP	CD214A-T70CA	WP	77.8	86.0	1.0	70	5.0	113	3.5
CD214A-T75	RQ	CD214A-T75C	WQ	83.3	102	1.0	75	5.0	134	3.0
CD214A-T75A	RR	CD214A-T75CA	WR	83.3	92.1	1.0	75	5.0	121	3.3
CD214A-T78	RS	CD214A-T78C	WS	86.7	106	1.0	78	5.0	139	2.9
CD214A-T78A	RT	CD214A-T78CA	WT	86.7	95.8	1.0	78	5.0	126	3.2
CD214A-T85	RU	CD214A-T85C	WU	94.4	115	1.0	85	5.0	151	2.6
CD214A-T85A	RV	CD214A-T85CA	WV	94.4	104	1.0	85	5.0	137	2.9
CD214A-T90	RW	CD214A-T90C	WW	100	122	1.0	90	5.0	160	2.5
CD214A-T90A	RX	CD214A-T90CA	WX	100	111	1.0	90	5.0	146	2.7
CD214A-T100	RY	CD214A-T100C	WY	111	136	1.0	100	5.0	179	2.2
CD214A-T100A	RZ	CD214A-T100CA	WZ	111	123	1.0	100	5.0	162	2.5
CD214A-T110	SD	CD214A-T110C	XD	122	149	1.0	110	5.0	196	2.0
CD214A-T110A	SE	CD214A-T110CA	XE	122	135	1.0	110	5.0	177	2.3
CD214A-T120	SF	CD214A-T120C	XF	133	163	1.0	120	5.0	214	1.9
CD214A-T120A	SG	CD214A-T120CA	XG	133	147	1.0	120	5.0	193	2.0
CD214A-T130	SH	CD214A-T130C	XH	144	176	1.0	130	5.0	231	1.7
CD214A-T130A	SK	CD214A-T130CA	XK	144	159	1.0	130	5.0	209	1.9
CD214A-T150	SL	CD214A-T150C	XL	167	204	1.0	150	5.0	268	1.5
CD214A-T150A	SM	CD214A-T150CA	XM	167	185	1.0	150	5.0	243	1.6
CD214A-T160	SN	CD214A-T160C	XN	178	218	1.0	160	5.0	287	1.4
CD214A-T160A	SP	CD214A-T160CA	XP	178	197	1.0	160	5.0	259	1.5
CD214A-T170	SQ	CD214A-T170C	XQ	189	231	1.0	170	5.0	304	1.3
CD214A-T170A	SR	CD214A-T170CA	XR	189	209	1.0	170	5.0	275	1.4

Notes:
1. Suffix 'A' denotes a 5 % tolerance device.
2. Suffix 'C' denotes a bidirectional device.
3. Suffix 'CA' denotes a 5 % tolerance bidirectional device.
4. No suffix denotes a 10 % tolerance unidirectional device.
5. For bidirectional devices with a V_R of 10 volts or less, the I_R limit is double.
6. For unidirectional devices with a V_F max. of 3.5 V at an I_F of 35 A, 0.5 Sine Wave of 8.3 ms Pulse Width.

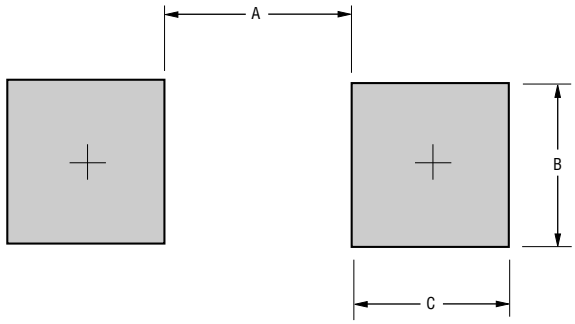
Product Dimensions



Dimension	SMA (DO-214AC)
A	4.06 - 4.57 (0.160 - 0.180)
B	2.29 - 2.92 (0.090 - 0.115)
C	1.27 - 1.63 (0.050 - 0.064)
D	0.15 - 0.31 (0.006 - 0.112)
E	4.83 - 5.59 (0.190 - 0.220)
F	0.05 - 0.20 (0.002 - 0.008)
G	2.01 - 2.62 (0.080 - 0.103)
H	0.76 - 1.52 (0.030 - 0.060)

DIMENSIONS: MM (INCHES)

Recommended Pad Layout



Dimension	SMA (DO-214AC)
A (Max.)	2.70 (0.106)
B (Min.)	2.10 (0.083)
C (Min.)	1.27 (0.050)

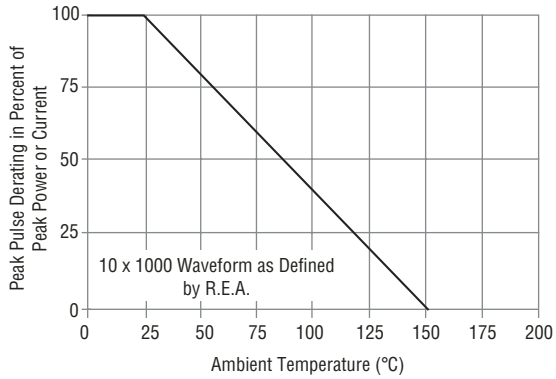
DIMENSIONS: MM (INCHES)

Physical Specifications

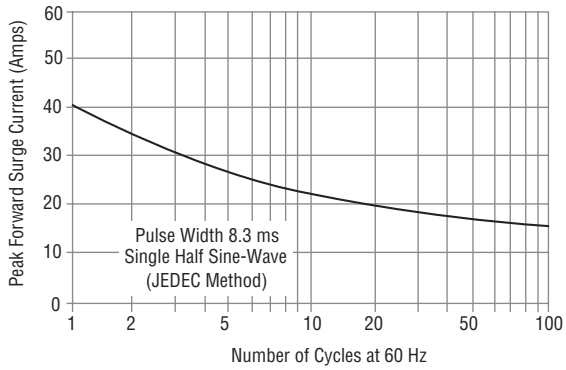
Case .....Molded plastic per UL Class 94V-0
Polarity .....Cathode band indicates unidirectional device
No cathode band indicates bidirectional device
Weight .....0.002 ounces / 0.064 grams

Rating and Characteristic Curves

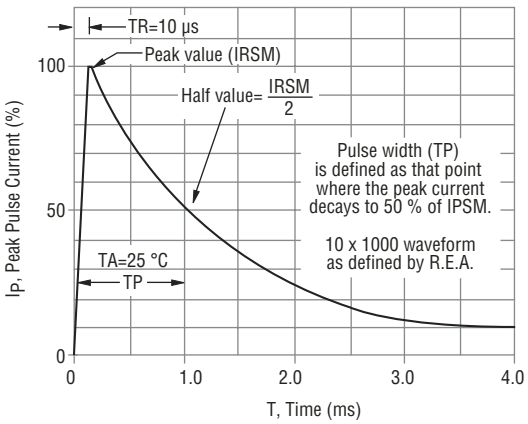
Pulse Derating Curve



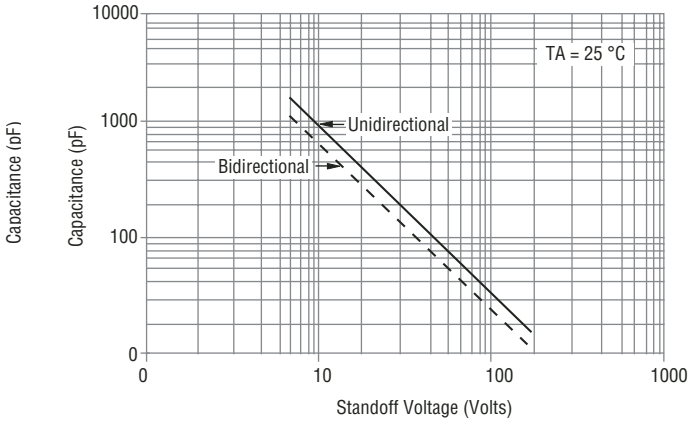
Maximum Non-Repetitive Surge Current



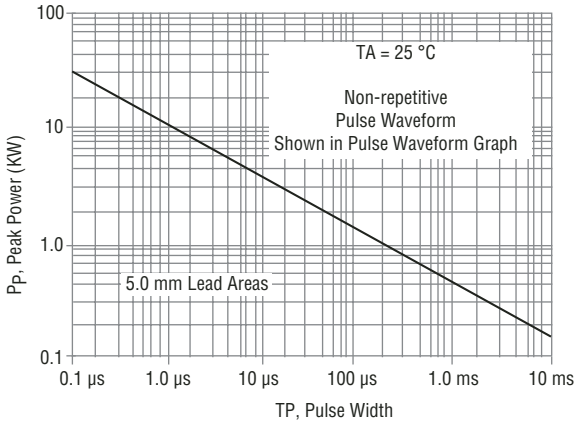
Pulse Waveform



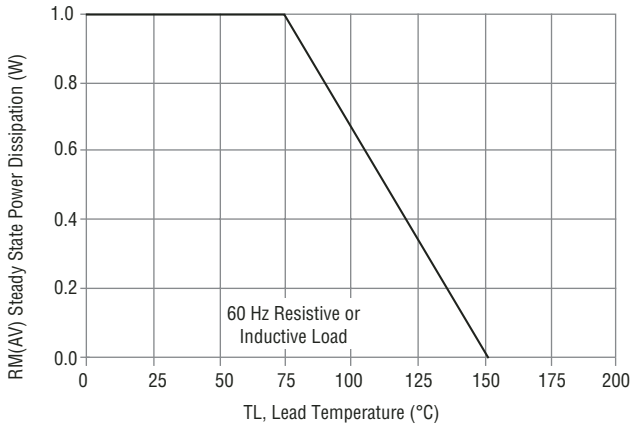
Typical Junction Capacitance



Pulse Rating Curve

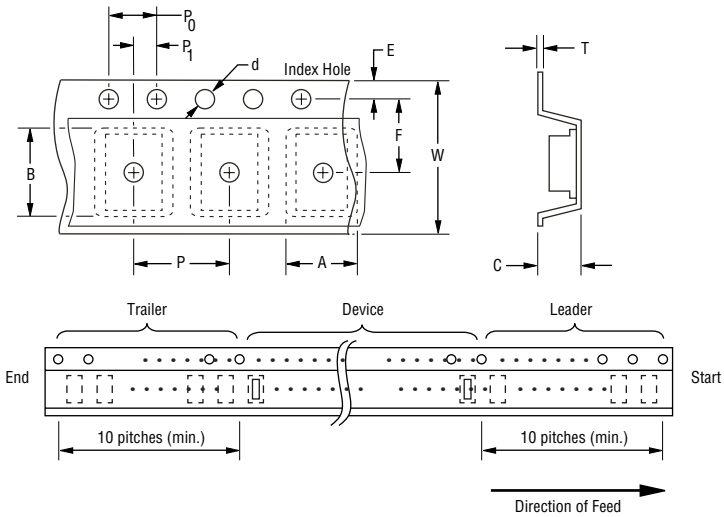


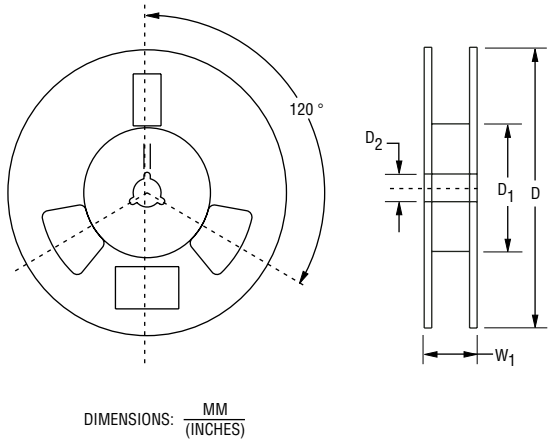
Steady State Power Derating Curve



Packaging Information

The product will be dispensed in Tape and Reel format (see diagram below).

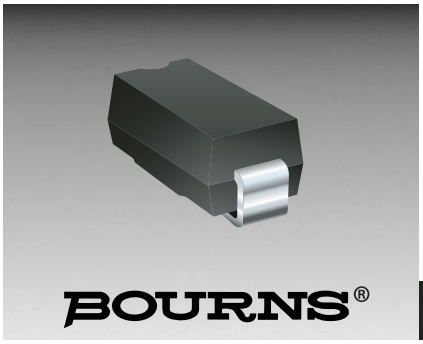




DIMENSIONS: MM / (INCHES)

Devices are packed in accordance with EIA standard RS-481-A and specifications shown here.

Item	Symbol	SMA (DO-214AC)
Carrier Width	A	2.90 ± 0.10 (0.114 - 0.004)
Carrier Length	B	5.59 ± 0.10 (0.220 - 0.004)
Carrier Depth	C	2.36 ± 0.10 (0.093 - 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 ± 0.20 (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	0.30 ± 0.10 (0.012 - 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	--	5,000



BOURNS®

Features

- Surface Mount SMB package
- Standoff Voltage: 5.0 to 170 volts
- Power Dissipation: 600 watts

CD214B Transient Voltage Suppressor Diode Series

General Information

The markets of portable communications, computing and video equipment are challenging the semiconductor industry to develop increasingly smaller electronic components.

Bourns offers Transient Voltage Suppressor Diodes for surge and ESD protection applications, in compact chip package DO-214AA (SMB) size format. The Transient Voltage Suppressor series offers a choice of Working Peak Reverse Voltage from 5 V up to 170 V and Breakdown Voltage up to 200 V. Typical fast response times are less than 1.0 ns for unidirectional devices and less than 5.0 ns for bidirectional devices from 0 V to Minimum Breakdown Voltage.

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

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

Parameter	Symbol	Value	Unit
Minimum Peak Pulse Power Dissipation (T_P = 1 ms) (Note 1,2)	P_{PK}	600	Watts
Peak Forward Surge Current 8.3ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) (Note 3)	I_{FSM}	100	Amps
Steady State Power Dissipation @ T_L = 75 °C	$P_{M(AV)}$	5.0	Watts
Maximum Instantaneous Forward Voltage @ I_{PP} = 50 A (For Unidirectional Units Only)	V_F	(Note 5)	Volts
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C

1. Non-repetitive current pulse, per Pulse Waveform graph and derated above TA = 25 °C per Pulse Derating Curve.
2. Thermal Resistance Junction to Lead.
3. 8.3 ms Single Half-Sine Wave duty cycle = 4 pulses maximum per minute (unidirectional units only).
4. Single Phase, Half Wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20 %.
5. V_F = 3.5 V on CD214B-T5.0 through CD214B-T90A and V_F = 5.0 V on CD214B-T100 through CD214B-T170A.

How To Order

CD 214B - T 5.0 CA

Common Code
Chip Diode

Package
214A = SMA/DO-214AC
214B = SMB/DO-214AA
214C = SMC/DO-214AB

Model
T = Transient Voltage Suppressor Series

Working Peak Reverse Voltage
5.0 = 5.0 V_{RWM} (Volts)
170 = 170 V_{RWM} (Volts)

Suffix
A = 5 % Tolerance Device
C = Bidirectional Device
CA = 5 % Tolerance Bidirectional Device
__ = 10 % Tolerance Unidirectional Device

BOURNS®
Reliable Electronic Solutions

Asia-Pacific:
Tel: +886-2 2562-4117 • Fax: +886-2 2562-4116
Europe:
Tel: +41-41 768 5555 • Fax: +41-41 768 5510
North America:
Tel: +1-909 781-5500 • Fax: +1-909 781-5700
Tel: +1-951 781-5500 • Fax: +1-951 781-5700 *(after 7/17/04)*
www.bourns.com

Electrical Characteristics (@T_A = 25 °C unless otherwise noted)

Unidirectional Device		Bidirectional Device		Breakdown Voltage V_{BR} (Volts)			Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{RWM}	Maximum Reverse Voltage @IRSM	Maximum Reverse Surge Current
Part Number	Part Marking	Part Number	Part Marking	Min.	Max.	@ I_T (mA)	V_{RWM} (Volts)	I_R (uA)	V_{RSM} (Volts)	I_{RSM} (Amps)
CD214B-T5.0	KD	CD214B-T5.0C	AD	6.40	7.55	10	5.0	800	9.6	62.5
CD214B-T5.0A	KE	CD214B-T5.0CA	AE	6.40	7.25	10	5.0	800	9.2	65.2
CD214B-T6.0	KF	CD214B-T6.0C	AF	6.67	8.45	10	6.0	800	11.4	52.6
CD214B-T6.0A	KG	CD214B-T6.0CA	AG	6.67	7.67	10	6.0	800	10.3	58.3
CD214B-T6.5	KH	CD214B-T6.5C	AH	7.22	9.14	10	6.5	500	12.3	48.7
CD214B-T6.5A	KK	CD214B-T6.5CA	AK	7.22	8.30	10	6.5	500	11.2	53.6
CD214B-T7.0	KL	CD214B-T7.0C	AL	7.78	9.86	10	7.0	200	13.3	45.1
CD214B-T7.0A	KM	CD214B-T7.0CA	AM	7.78	8.95	10	7.0	200	12.0	50.0
CD214B-T7.5	KN	CD214B-T7.5C	AN	8.33	10.8	1.0	7.5	100	14.3	42.0
CD214B-T7.5A	KP	CD214B-T7.5CA	AP	8.33	9.58	1.0	7.5	100	12.9	46.5
CD214B-T8.0	KQ	CD214B-T8.0C	AQ	8.89	11.3	1.0	8.0	50	15.0	40.0
CD214B-T8.0A	KR	CD214B-T8.0CA	AR	8.89	10.2	1.0	8.0	50	13.6	44.1
CD214B-T8.5	KS	CD214B-T8.5C	AS	9.44	11.9	1.0	8.5	20	15.9	37.7
CD214B-T8.5A	KT	CD214B-T8.5CA	AT	9.44	10.8	1.0	8.5	20	14.4	41.7
CD214B-T9.0	KU	CD214B-T9.0C	AU	10.0	12.8	1.0	9.0	10	16.9	35.5
CD214B-T9.0A	KV	CD214B-T9.0CA	AV	10.0	11.5	1.0	9.0	10	15.4	39.0
CD214B-T10	KW	CD214B-T10C	AW	11.1	14.1	1.0	10	5.0	18.8	31.9
CD214B-T10A	KX	CD214B-T10CA	AX	11.1	12.8	1.0	10	5.0	17.0	35.3
CD214B-T11	KY	CD214B-T11C	AY	12.2	15.4	1.0	11	5.0	20.1	29.9
CD214B-T11A	KZ	CD214B-T11CA	AZ	12.2	14.4	1.0	11	5.0	18.2	33.0
CD214B-T12	LD	CD214B-T12C	BD	13.3	16.9	1.0	12	5.0	22.0	27.3
CD214B-T12A	LE	CD214B-T12CA	BE	13.3	15.3	1.0	12	5.0	19.9	30.2
CD214B-T13	LF	CD214B-T13C	BF	14.4	18.2	1.0	13	5.0	23.8	25.2
CD214B-T13A	LG	CD214B-T13CA	BG	14.4	16.5	1.0	13	5.0	21.5	27.9
CD214B-T14	LH	CD214B-T14C	BH	15.6	19.8	1.0	14	5.0	25.8	23.3
CD214B-T14A	LK	CD214B-T14CA	BK	15.6	17.9	1.0	14	5.0	23.2	25.8
CD214B-T15	LL	CD214B-T15C	BL	16.7	21.1	1.0	15	5.0	26.9	22.3
CD214B-T15A	LM	CD214B-T15CA	BM	16.7	19.2	1.0	15	5.0	24.4	24.0
CD214B-T16	LN	CD214B-T16C	BN	17.8	22.6	1.0	16	5.0	28.8	20.8
CD214B-T16A	LP	CD214B-T16CA	BP	17.8	20.5	1.0	16	5.0	26.0	23.1
CD214B-T17	LQ	CD214B-T17C	BQ	18.9	23.9	1.0	17	5.0	30.5	19.7
CD214B-T17A	LR	CD214B-T17CA	BR	18.9	21.7	1.0	17	5.0	27.6	21.7
CD214B-T18	LS	CD214B-T18C	BS	20.0	25.3	1.0	18	5.0	32.2	18.6
CD214B-T18A	LT	CD214B-T18CA	BT	20.0	23.3	1.0	18	5.0	29.2	20.5
CD214B-T20	LU	CD214B-T20C	BU	22.2	28.1	1.0	20	5.0	35.8	16.7
CD214B-T20A	LV	CD214B-T20CA	BV	22.2	25.5	1.0	20	5.0	32.4	18.5
CD214B-T22	LW	CD214B-T22C	BW	24.4	30.9	1.0	22	5.0	39.4	15.2
CD214B-T22A	LX	CD214B-T22CA	BX	24.4	28.0	1.0	22	5.0	35.5	16.9
CD214B-T24	LY	CD214B-T24C	BY	26.7	33.8	1.0	24	5.0	43.0	14.0
CD214B-T24A	LZ	CD214B-T24CA	BZ	26.7	30.7	1.0	24	5.0	38.9	15.4
CD214B-T26	MD	CD214B-T26C	CD	28.9	36.8	1.0	26	5.0	46.6	12.4
CD214B-T26A	ME	CD214B-T26CA	CE	28.9	32.2	1.0	26	5.0	42.1	14.2
CD214B-T28	MF	CD214B-T28C	CF	31.1	39.4	1.0	28	5.0	50.0	12.0
CD214B-T28A	MG	CD214B-T28CA	CG	31.1	35.8	1.0	28	5.0	45.4	13.2
CD214B-T30	MH	CD214B-T30C	CH	33.3	42.4	1.0	30	5.0	53.5	11.2
CD214B-T30A	MK	CD214B-T30CA	CK	33.3	38.3	1.0	30	5.0	48.4	12.4
CD214B-T33	ML	CD214B-T33C	CL	36.7	46.9	1.0	33	5.0	59.0	10.2
CD214B-T33A	MM	CD214B-T33CA	CM	36.7	42.2	1.0	33	5.0	53.3	11.3

Notes:
1. Suffix 'A' denotes a 5 % tolerance device.
2. Suffix 'C' denotes a bidirectional device.
3. Suffix 'CA' denotes a 5 % tolerance bidirectional device.
4. No suffix denotes a 10 % tolerance unidirectional device.
5. For bidirectional devices with a V_R of 10 volts or less, the I_R limit is double.
6. For unidirectional devices with a V_F max. of 3.5 V at an I_F of 35 A, 0.5 Sine Wave of 8.3 ms Pulse Width.

Electrical Characteristics (@T_A = 25 °C unless otherwise noted)

Unidirectional Device		Bidirectional Device		Breakdown Voltage V_{BR} (Volts)			Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{RWM}	Maximum Reverse Voltage @IRSM	Maximum Reverse Surge Current
Part Number	Part Marking	Part Number	Part Marking	Min.	Max.	@ I_T (mA)	V_{RWM} (Volts)	I_R (uA)	V_{RSM} (Volts)	I_{RSM} (Amps)
CD214B-T36	MN	CD214B-T36C	CN	40	50.7	1.0	36	5.0	64.3	9.3
CD214B-T36A	MP	CD214B-T36CA	CP	40	46.0	1.0	36	5.0	58.1	10.3
CD214B-T40	MQ	CD214B-T40C	CQ	44.4	56.3	1.0	40	5.0	71.4	8.4
CD214B-T40A	MR	CD214B-T40CA	CR	44.4	51.1	1.0	40	5.0	64.5	9.3
CD214B-T43	MS	CD214B-T43C	CS	47.8	60.5	1.0	43	5.0	76.7	7.8
CD214B-T43A	MT	CD214B-T43CA	CT	47.8	54.9	1.0	43	5.0	69.4	8.6
CD214B-T45	MU	CD214B-T45C	CU	50	63.3	1.0	45	5.0	80.3	7.5
CD214B-T45A	MV	CD214B-T45CA	CV	50	57.5	1.0	45	5.0	72.7	8.3
CD214B-T48	MW	CD214B-T48C	CW	53.3	67.5	1.0	48	5.0	85.5	7.0
CD214B-T48A	MX	CD214B-T48CA	CX	53.3	61.3	1.0	48	5.0	77.4	7.7
CD214B-T51	MY	CD214B-T51C	CY	56.7	71.8	1.0	51	5.0	91.1	6.6
CD214B-T51A	MZ	CD214B-T51CA	CZ	56.7	65.2	1.0	51	5.0	82.4	7.3
CD214B-T54	ND	CD214B-T54C	DD	60	76.0	1.0	54	5.0	96.3	6.2
CD214B-T54A	NE	CD214B-T54CA	DE	60	69	1.0	54	5.0	87.1	6.9
CD214B-T58	NF	CD214B-T58C	DF	64.4	81.6	1.0	58	5.0	103	5.8
CD214B-T58A	NG	CD214B-T58CA	DG	64.4	74.6	1.0	58	5.0	93.6	6.4
CD214B-T60	NH	CD214B-T60C	DH	66.7	84.5	1.0	60	5.0	107	5.6
CD214B-T60A	NK	CD214B-T60CA	DK	66.7	76.7	1.0	60	5.0	96.8	6.2
CD214B-T64	NL	CD214B-T64C	DL	71.1	90.1	1.0	64	5.0	114	5.3
CD214B-T64A	NM	CD214B-T64CA	DM	71.1	81.8	1.0	64	5.0	103	5.8
CD214B-T70	NN	CD214B-T70C	DN	77.8	98.6	1.0	70	5.0	125	4.8
CD214B-T70A	NP	CD214B-T70CA	DP	77.8	89.5	1.0	70	5.0	113	5.3
CD214B-T75	NQ	CD214B-T75C	DQ	83.3	106	1.0	75	5.0	134	4.5
CD214B-T75A	NR	CD214B-T75CA	DR	83.3	95.8	1.0	75	5.0	121	4.9
CD214B-T78	NS	CD214B-T78C	DS	86.7	110	1.0	78	5.0	139	4.3
CD214B-T78A	NT	CD214B-T78CA	DT	86.7	99.7	1.0	78	5.0	126	4.7
CD214B-T85	NU	CD214B-T85C	DU	94.4	120	1.0	85	5.0	151	3.9
CD214B-T85A	NV	CD214B-T85CA	DV	94.4	109	1.0	85	5.0	137	4.4
CD214B-T90	NW	CD214B-T90C	DW	100	127	1.0	90	5.0	160	3.8
CD214B-T90A	NX	CD214B-T90CA	DX	100	116	1.0	90	5.0	146	4.1
CD214B-T100	NY	CD214B-T100C	DY	111	141	1.0	100	5.0	179	3.4
CD214B-T100A	NZ	CD214B-T100CA	DZ	111	128	1.0	100	5.0	162	3.7
CD214B-T110	PD	CD214B-T110C	ED	122	154	1.0	110	5.0	196	3.0
CD214B-T110A	PE	CD214B-T110CA	EE	122	140	1.0	110	5.0	177	3.4
CD214B-T120	PF	CD214B-T120C	EF	133	169	1.0	120	5.0	214	2.8
CD214B-T120A	PG	CD214B-T120CA	EG	133	153	1.0	120	5.0	193	3.1
CD214B-T130	PH	CD214B-T130C	EH	144	182	1.0	130	5.0	231	2.6
CD214B-T130A	PK	CD214B-T130CA	EK	144	165	1.0	130	5.0	209	2.9
CD214B-T150	PL	CD214B-T150C	EL	167	212	1.0	150	5.0	268	2.2
CD214B-T150A	PM	CD214B-T150CA	EM	167	192	1.0	150	5.0	243	2.5
CD214B-T160	PN	CD214B-T160C	EN	178	226	1.0	160	5.0	287	2.1
CD214B-T160A	PP	CD214B-T160CA	EP	178	205	1.0	160	5.0	259	2.3
CD214B-T170	PQ	CD214B-T170C	EQ	189	239	1.0	170	5.0	304	2.0
CD214B-T170A	PR	CD214B-T170CA	ER	189	218	1.0	170	5.0	275	2.2

Notes:
1. Suffix 'A' denotes a 5 % tolerance device.
2. Suffix 'C' denotes a bidirectional device.
3. Suffix 'CA' denotes a 5 % tolerance bidirectional device.
4. No suffix denotes a 10 % tolerance unidirectional device.
5. For bidirectional devices with a V_R of 10 volts or less, the I_R limit is double.
6. For unidirectional devices with a V_F max. of 3.5 V at an I_F of 35 A, 0.5 Sine Wave of 8.3 ms Pulse Width.

CD214B Transient Voltage Suppressor Diode Series

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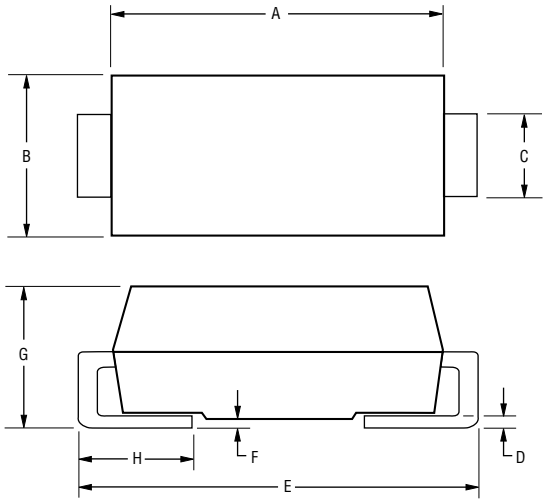
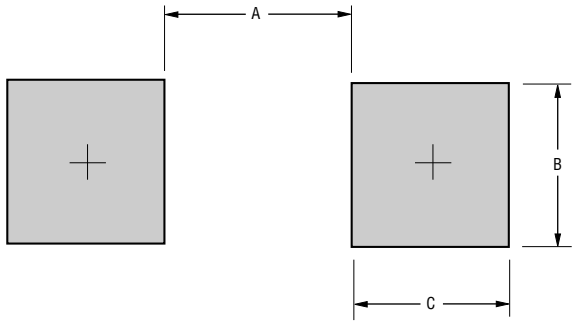
Product Dimensions



Dimension	SMB (DO-214AA)
A	4.06 - 4.57 (0.160 - 0.180)
B	3.30 - 3.94 (0.130 - 0.155)
C	1.96 - 2.21 (0.077 - 0.087)
D	0.15 - 0.31 (0.006 - 0.112)
E	5.21 - 5.59 (0.205 - 0.220)
F	0.05 - 0.20 (0.002 - 0.008)
G	2.01 - 2.62 (0.080 - 0.103)
H	0.76 - 1.52 (0.030 - 0.060)

DIMENSIONS: MM (INCHES)

Recommended Pad Layout



Dimension	SMB (DO-214AA)
A (Max.)	2.69 (0.106)
B (Min.)	2.10 (0.083)
C (Min.)	1.27 (0.050)

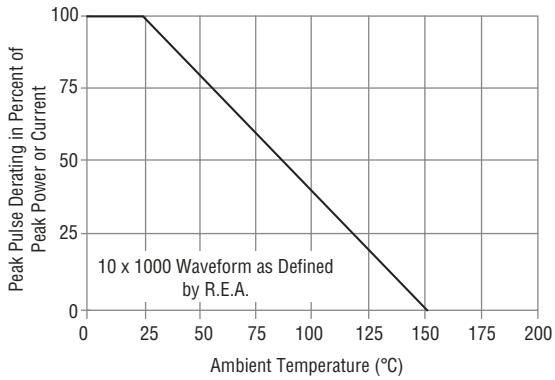
DIMENSIONS: MM (INCHES)

Physical Specifications

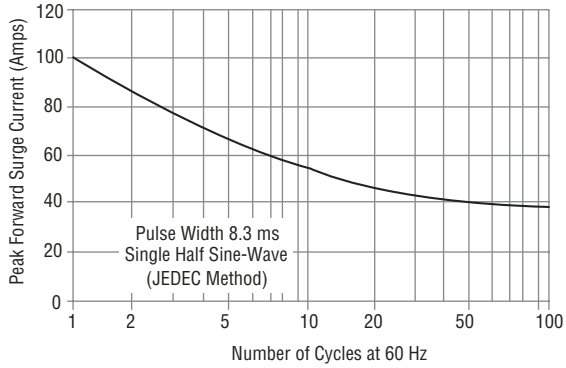
Case .....Molded plastic per UL Class 94V-0
Polarity .....Cathode band indicates unidirectional device
No cathode band indicates bidirectional device
Weight .....0.003 ounces / 0.093 grams

Rating and Characteristic Curves

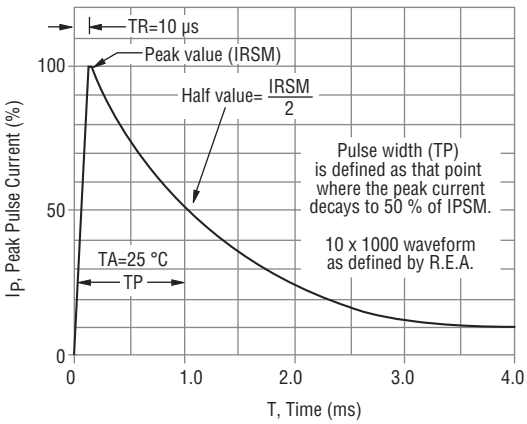
Pulse Derating Curve



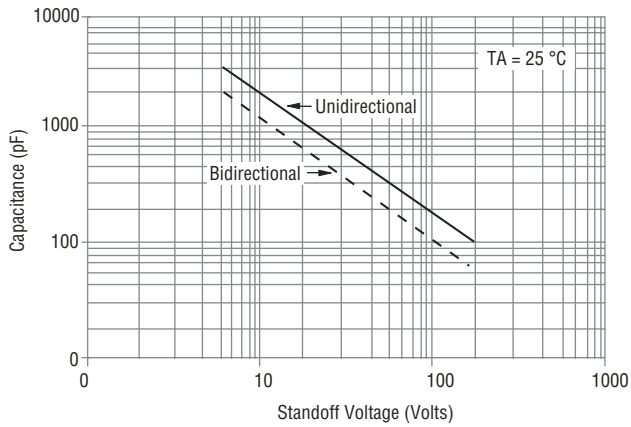
Maximum Non-Repetitive Surge Current



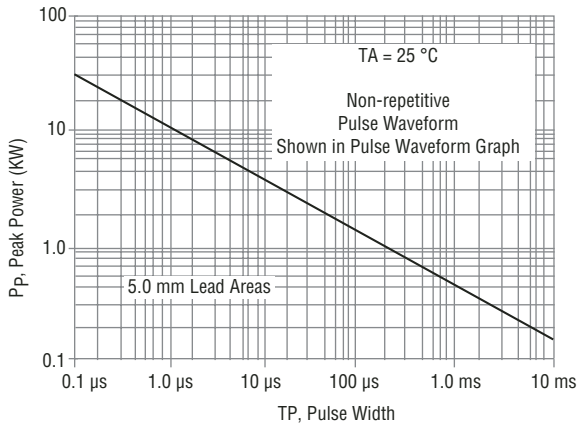
Pulse Waveform



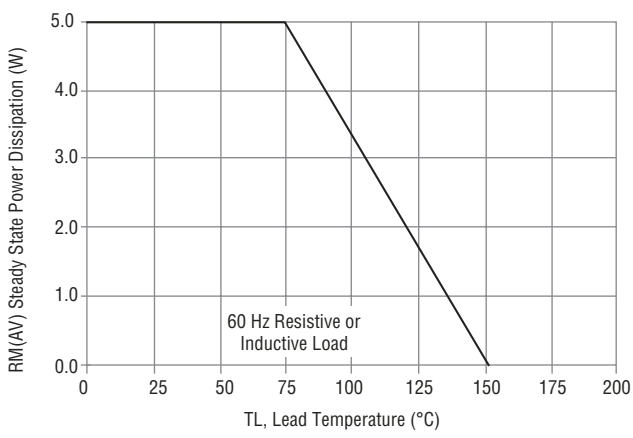
Typical Junction Capacitance



Pulse Rating Curve

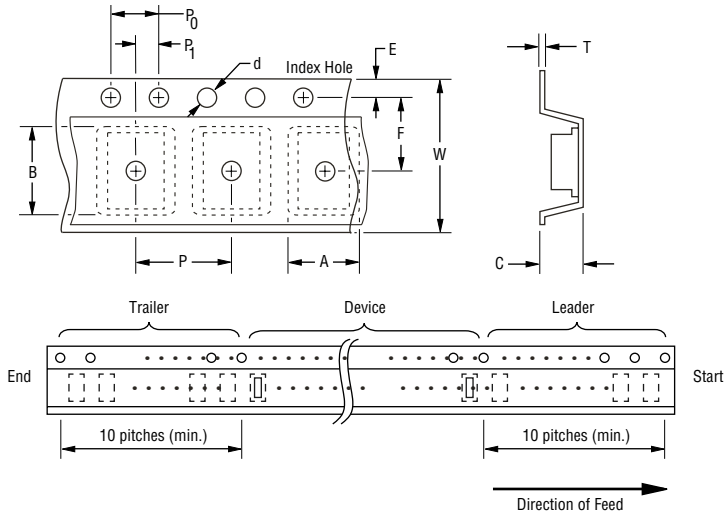


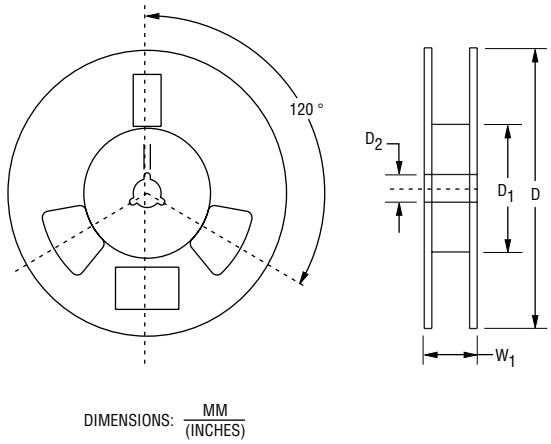
Steady State Power Derating Curve



Packaging Information

The product will be dispensed in Tape and Reel format (see diagram below).

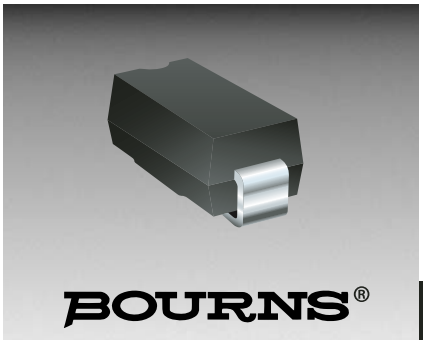




DIMENSIONS: MM / (INCHES)

Devices are packed in accordance with EIA standard RS-481-A and specifications shown here.

Item	Symbol	SMB (DO-214AA)
Carrier Width	A	4.94 ± 0.10 (0.194 - 0.004)
Carrier Length	B	5.57 ± 0.10 (0.210 - 0.004)
Carrier Depth	C	2.36 ± 0.10 (0.093 - 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 ± 0.20 (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	0.30 ± 0.10 (0.012 - 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



BOURNS®

Features

- Surface Mount SMC package
- Standoff Voltage: 5.0 to 170 volts
- Power Dissipation: 1500 watts

CD214C Transient Voltage Suppressor Diode Series

General Information

The markets of portable communications, computing and video equipment are challenging the semiconductor industry to develop increasingly smaller electronic components.

Bourns offers Transient Voltage Suppressor Diodes for surge and ESD protection applications, in compact chip package DO-214AB (SMC) size format. The Transient Voltage Suppressor series offers a choice of Working Peak Reverse Voltage from 5 V up to 170 V and Breakdown Voltage up to 200 V. Typical fast response times are less than 1.0 ns for unidirectional devices and less than 5.0 ns for bidirectional devices from 0 V to Minimum Breakdown Voltage.

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

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

Parameter	Symbol	Value	Unit
Minimum Peak Pulse Power Dissipation (T_P = 1 ms) (Note 1,2)	P_{PK}	1500	Watts
Peak Forward Surge Current 8.3ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) (Note 3)	I_{FSM}	200	Amps
Steady State Power Dissipation @ T_L = 75 °C	$P_{M(AV)}$	5.0	Watts
Maximum Instantaneous Forward Voltage @ I_{PP} = 100 A (For Unidirectional Units Only)	V_F	(Note 5)	Volts
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C

1. Non-repetitive current pulse, per Pulse Waveform graph and derated above TA = 25 °C per Pulse Derating Curve.
2. Thermal Resistance Junction to Lead.
3. 8.3 ms Single Half-Sine Wave duty cycle = 4 pulses maximum per minute (unidirectional units only).
4. Single Phase, Half Wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20 %.
5. V_F = 3.5 V on CD214C-T5.0 through CD214C-T90A and V_F = 5.0 V on CD214C-T100 through CD214C-T170A.

How To Order

CD 214C - T 5.0 CA

Common Code
Chip Diode

Package
214A = SMA/DO-214AC
214B = SMB/DO-214AA
214C = SMC/DO-214AB

Model
T = Transient Voltage Suppressor Series

Working Peak Reverse Voltage
5.0 = 5.0 V_{RWM} (Volts)
170 = 170 V_{RWM} (Volts)

Suffix
A = 5 % Tolerance Device
C = Bidirectional Device
CA = 5 % Tolerance Bidirectional Device
__ = 10 % Tolerance Unidirectional Device

BOURNS®
Reliable Electronic Solutions

Asia-Pacific:
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Europe:
Tel: +41-41 768 5555 • Fax: +41-41 768 5510
North America:
Tel: +1-951 781-5500 • Fax: +1-951 781-5700
www.bourns.com

Electrical Characteristics (@T_A = 25 °C unless otherwise noted)

Unidirectional Device		Bidirectional Device		Breakdown Voltage V_{BR} (Volts)			Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{RWM}	Maximum Reverse Voltage @IRSM	Maximum Reverse Surge Current
Part Number	Part Marking	Part Number	Part Marking	Min.	Max.	@ I_T (mA)	V_{RWM} (Volts)	I_R (uA)	V_{RSM} (Volts)	I_{RSM} (Amps)
CD214C-T5.0	GDD	CD214C-T5.0C	BDD	6.4	7.55	10	5	1000	9.6	156.3
CD214C-T5.0A	GDE	CD214C-T5.0CA	BDE	6.4	7.23	10	5	1000	9.2	163
CD214C-T6.0	GDF	CD214C-T6.0C	BDF	6.67	8.45	10	6	1000	11.4	131.6
CD214C-T6.0A	GDG	CD214C-T6.0CA	BDG	6.67	7.67	10	6	1000	10.3	145.6
CD214C-T6.5	GDH	CD214C-T6.5C	BDH	7.22	9.14	10	6.5	500	12.3	122
CD214C-T6.5A	GDK	CD214C-T6.5CA	BDK	7.22	8.3	10	6.5	500	11.2	133.9
CD214C-T7.0	GDL	CD214C-T7.0C	BDL	7.78	9.86	10	7	200	13.3	112.8
CD214C-T7.0A	GDM	CD214C-T7.0CA	BDM	7.78	8.95	10	7	200	12	125
CD214C-T7.5	GDN	CD214C-T7.5C	BDN	8.33	10.8	1	7.5	100	14.3	104.9
CD214C-T7.5A	GDP	CD214C-T7.5CA	BDP	8.33	9.58	1	7.5	100	12.9	116.3
CD214C-T8.0	GDQ	CD214C-T8.0C	BDQ	8.89	11.3	1	8	50	15	100
CD214C-T8.0A	GDR	CD214C-T8.0CA	BDR	8.89	10.2	1	8	50	13.6	110.3
CD214C-T8.5	GDS	CD214C-T8.5C	BDS	9.44	11.9	1	8.5	20	15.9	95.3
CD214C-T8.5A	GDT	CD214C-T8.5CA	BDT	9.44	10.8	1	8.5	20	14.4	104.2
CD214C-T9.0	GDU	CD214C-T9.0C	BDU	10	12.8	1	9	10	16.9	88.7
CD214C-T9.0A	GDV	CD214C-T9.0CA	BDV	10	11.5	1	9	10	15.4	97.4
CD214C-T10	GDW	CD214C-T10C	BDW	11.1	14.1	1	10	5	18.8	79.8
CD214C-T10A	GDX	CD214C-T10CA	BDX	11.1	12.8	1	10	5	17	88.2
CD214C-T11	GDY	CD214C-T11C	BDY	12.2	15.4	1	11	5	20.1	74.6
CD214C-T11A	GDZ	CD214C-T11CA	BDZ	12.2	14.4	1	11	5	18.2	82.4
CD214C-T12	GED	CD214C-T12C	BED	13.3	16.9	1	12	5	22	68.2
CD214C-T12A	GEE	CD214C-T12CA	BEE	13.3	15.3	1	12	5	19.9	75.3
CD214C-T13	GEF	CD214C-T13C	BEF	14.4	18.2	1	13	5	23.8	63
CD214C-T13A	GEG	CD214C-T13CA	BEG	14.4	16.5	1	13	5	21.5	69.7
CD214C-T14	GEH	CD214C-T14C	BEH	15.6	19.8	1	14	5	25.8	58.1
CD214C-T14A	GEK	CD214C-T14CA	BEK	15.6	17.9	1	14	5	23.2	64.7
CD214C-T15	GEL	CD214C-T15C	BEL	16.7	21.1	1	15	5	26.9	55.8
CD214C-T15A	GEM	CD214C-T15CA	BEM	16.7	19.2	1	15	5	24.4	61.5
CD214C-T16	GEN	CD214C-T16C	BEN	17.8	22.6	1	16	5	28.8	52.1
CD214C-T16A	GEP	CD214C-T16CA	BEP	17.8	20.5	1	16	5	26	57.7
CD214C-T17	GEQ	CD214C-T17C	BEQ	18.9	23.9	1	17	5	30.5	49.2
CD214C-T17A	GER	CD214C-T17CA	BER	18.9	21.7	1	17	5	27.6	53.3
CD214C-T18	GES	CD214C-T18C	BES	20	25.3	1	18	5	32.2	46.6
CD214C-T18A	GET	CD214C-T18CA	BET	20	23.3	1	18	5	29.2	51.4
CD214C-T20	GEU	CD214C-T20C	BEU	22.2	28.1	1	20	5	35.8	41.9
CD214C-T20A	GEV	CD214C-T20CA	BEV	22.2	25.5	1	20	5	32.4	46.3
CD214C-T22	GEW	CD214C-T22C	BEW	24.4	30.9	1	22	5	39.4	38.1
CD214C-T22A	GEX	CD214C-T22CA	BEX	24.4	28	1	22	5	35.5	42.2
CD214C-T24	GEY	CD214C-T24C	BEY	26.7	33.8	1	24	5	43	34.9
CD214C-T24A	GEZ	CD214C-T24CA	BEZ	26.7	30.7	1	24	5	38.9	38.6
CD214C-T26	GFD	CD214C-T26C	BFD	28.9	36.8	1	26	5	46.6	32.2
CD214C-T26A	GFE	CD214C-T26CA	BFE	28.9	32.2	1	26	5	42.1	35.6
CD214C-T28	GFF	CD214C-T28C	BFF	31.1	39.4	1	28	5	50	30
CD214C-T28A	GFG	CD214C-T28CA	BFG	31.1	35.8	1	28	5	45.4	33
CD214C-T30	GFH	CD214C-T30C	BFH	33.3	42.4	1	30	5	53.5	28
CD214C-T30A	GFK	CD214C-T30CA	BFK	33.3	38.3	1	30	5	48.4	31
CD214C-T33	GFL	CD214C-T33C	BFL	36.7	46.9	1	33	5	59	25.4
CD214C-T33A	GFM	CD214C-T33CA	BFM	36.7	42.2	1	33	5	53.3	28.1

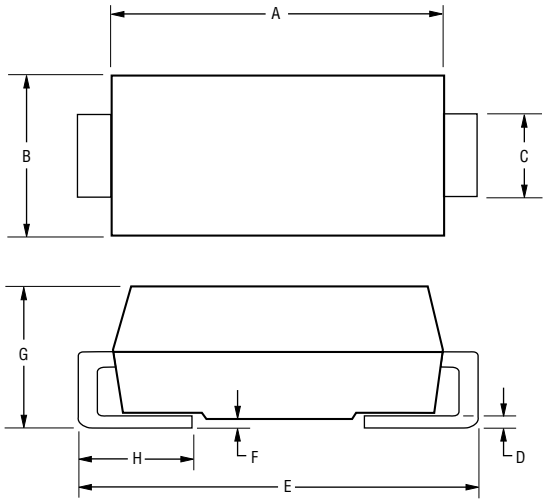
Notes:
1. Suffix 'A' denotes a 5 % tolerance device.
2. Suffix 'C' denotes a bidirectional device.
3. Suffix 'CA' denotes a 5 % tolerance bidirectional device.
4. No suffix denotes a 10 % tolerance unidirectional device.
5. For bidirectional devices with a V_R of 10 volts or less, the I_R limit is double.
6. For unidirectional devices with a V_F max. of 3.5 V at an I_F of 35 A, 0.5 Sine Wave of 8.3 ms Pulse Width.

Electrical Characteristics (@T_A = 25 °C unless otherwise noted)

Unidirectional Device		Bidirectional Device		Breakdown Voltage V_{BR} (Volts)			Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{RWM}	Maximum Reverse Voltage @IRSM	Maximum Reverse Surge Current
Part Number	Part Marking	Part Number	Part Marking	Min.	Max.	@ I_T (mA)	V_{RWM} (Volts)	I_R (uA)	V_{RSM} (Volts)	I_{RSM} (Amps)
CD214C-T36	GFN	CD214C-T36C	BFN	40	50.7	1	36	5	64.3	23.3
CD214C-T36A	GFP	CD214C-T36CA	BFP	40	46	1	36	5	58.1	25.8
CD214C-T40	GFQ	CD214C-T40C	BFQ	44.4	56.3	1	40	5	71.4	21
CD214C-T40A	GFR	CD214C-T40CA	BFR	44.4	51.1	1	40	5	64.5	23.3
CD214C-T43	GFS	CD214C-T43C	BFS	47.8	60.5	1	43	5	76.7	19.6
CD214C-T43A	GFT	CD214C-T43CA	BFT	47.8	54.9	1	43	5	69.4	21.6
CD214C-T45	GFU	CD214C-T45C	BFU	50	63.3	1	45	5	80.3	18.7
CD214C-T45A	GFV	CD214C-T45CA	BFV	50	57.5	1	45	5	72.7	20.6
CD214C-T48	GFW	CD214C-T48C	BFW	53.3	67.5	1	48	5	85.5	17.5
CD214C-T48A	GFX	CD214C-T48CA	BFX	53.3	61.3	1	48	5	77.4	19.4
CD214C-T51	GFY	CD214C-T51C	BFY	56.7	71.8	1	51	5	91.1	16.5
CD214C-T51A	GFZ	CD214C-T51CA	BFZ	56.7	65.2	1	51	5	82.4	18.2
CD214C-T54	GGD	CD214C-T54C	BGD	60	76	1	54	5	96.3	15.6
CD214C-T54A	GGE	CD214C-T54CA	BGE	60	69	1	54	5	87.1	17.2
CD214C-T58	GGF	CD214C-T58C	BGF	64.4	81.6	1	58	5	103	14.6
CD214C-T58A	GGG	CD214C-T58CA	BGG	64.4	74.6	1	58	5	93.6	16
CD214C-T60	GGH	CD214C-T60C	BGH	66.7	84.5	1	60	5	107	14
CD214C-T60A	GGK	CD214C-T60CA	BGK	66.7	76.7	1	60	5	96.8	15.5
CD214C-T64	GGL	CD214C-T64C	BGL	71.1	90.1	1	64	5	114	13.2
CD214C-T64A	GGM	CD214C-T64CA	BGM	71.1	81.8	1	64	5	103	14.6
CD214C-T70	GGN	CD214C-T70C	BGN	77.8	98.6	1	70	5	125	12
CD214C-T70A	GGP	CD214C-T70CA	BGP	77.8	89.5	1	70	5	113	13.3
CD214C-T75	GGQ	CD214C-T75C	BGQ	83.3	106	1	75	5	134	11.2
CD214C-T75A	GGR	CD214C-T75CA	BGR	83.3	95.8	1	75	5	121	12.4
CD214C-T78	GGS	CD214C-T78C	BGS	86.7	110	1	78	5	139	10.8
CD214C-T78A	GGT	CD214C-T78CA	BGT	86.7	99.7	1	78	5	126	11.4
CD214C-T85	GGU	CD214C-T85C	BGU	94.4	119.2	1	85	5	151	9.9
CD214C-T85A	GGV	CD214C-T85CA	BGV	94.4	108.2	1	85	5	137	10.4
CD214C-T90	GGW	CD214C-T90C	BGW	100	126.5	1	90	5	160	9.4
CD214C-T90A	GGX	CD214C-T90CA	BGX	100	115.5	1	90	5	146	10.3
CD214C-T100	GGY	CD214C-T100C	BGY	111	141	1	100	5	179	8.4
CD214C-T100A	GGZ	CD214C-T100CA	BGZ	111	128	1	100	5	162	9.3
CD214C-T110	GHD	CD214C-T110C	BHD	122	154	1	110	5	196	7.7
CD214C-T110A	GHE	CD214C-T110CA	BHE	122	140	1	110	5	177	8.4
CD214C-T120	GHF	CD214C-T120C	BHF	133	169	1	120	5	214	7
CD214C-T120A	GHG	CD214C-T120CA	BHG	133	153	1	120	5	193	7.9
CD214C-T130	GHH	CD214C-T130C	BHH	144	182	1	130	5	231	6.5
CD214C-T130A	GHK	CD214C-T130CA	BHK	144	165	1	130	5	209	7.2
CD214C-T150	GHL	CD214C-T150C	BHL	167	211.5	1	150	5	268	5.6
CD214C-T150A	GHM	CD214C-T150CA	BHM	167	192	1	150	5	243	6.2
CD214C-T160	GHN	CD214C-T160C	BHN	178	226	1	160	5	287	5.2
CD214C-T160A	GHP	CD214C-T160CA	BHP	178	205	1	160	5	259	5.8
CD214C-T170	GHQ	CD214C-T170C	BHQ	189	239.5	1	170	5	304	4.9
CD214C-T170A	GHR	CD214C-T170CA	BHR	189	217.5	1	170	5	275	5.5

Notes:
1. Suffix ‘A’ denotes a 5 % tolerance device.
2. Suffix ‘C’ denotes a bidirectional device.
3. Suffix ‘CA’ denotes a 5 % tolerance bidirectional device.
4. No suffix denotes a 10 % tolerance unidirectional device.
5. For bidirectional devices with a V_R of 10 volts or less, the I_R limit is double.
6. For unidirectional devices with a V_F max. of 3.5 V at an I_F of 35 A, 0.5 Sine Wave of 8.3 ms Pulse Width.

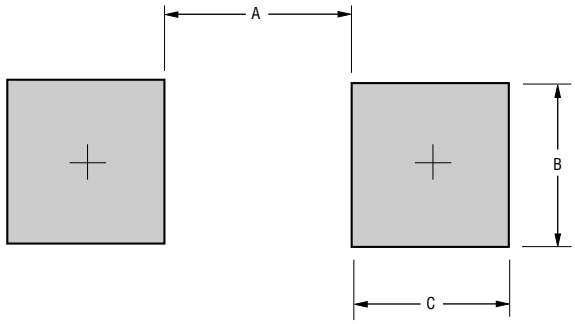
Product Dimensions



Dimension	SMC (DO-214AB)
A	6.60 - 7.11 (0.260 - 0.280)
B	5.59 - 6.22 (0.220 - 0.245)
C	2.92 - 3.18 (0.115 - 0.125)
D	0.15 - 0.31 (0.006 - 0.112)
E	7.75 - 8.13 (0.305 - 0.320)
F	0.05 - 0.20 (0.002 - 0.008)
G	2.01 - 2.62 (0.080 - 0.103)
H	0.76 - 1.52 (0.030 - 0.060)

DIMENSIONS: MM (INCHES)

Recommended Pad Layout



Dimension	SMC (DO-214AB)
A (Max.)	4.69 (0.185)
B (Min.)	3.07 (0.121)
C (Min.)	1.52 (0.060)

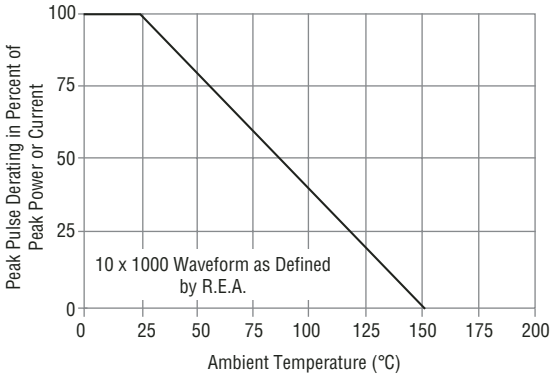
DIMENSIONS: MM (INCHES)

Physical Specifications

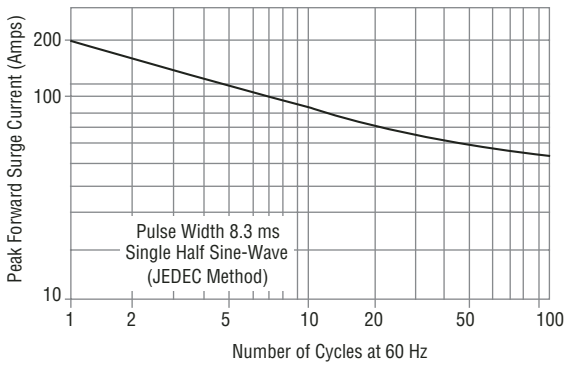
Case .....Molded plastic per UL Class 94V-0
Polarity .....Cathode band indicates unidirectional device
No cathode band indicates bidirectional device
Weight .....0.007 ounces / 0.21 grams

Rating and Characteristic Curves

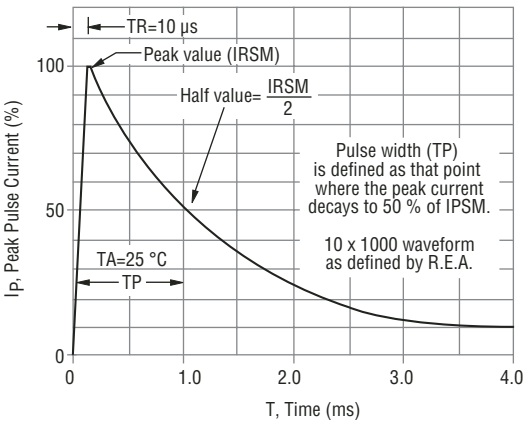
Pulse Derating Curve



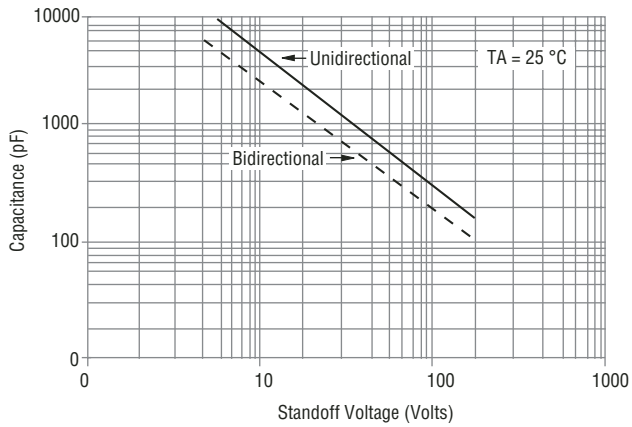
Maximum Non-Repetitive Surge Current



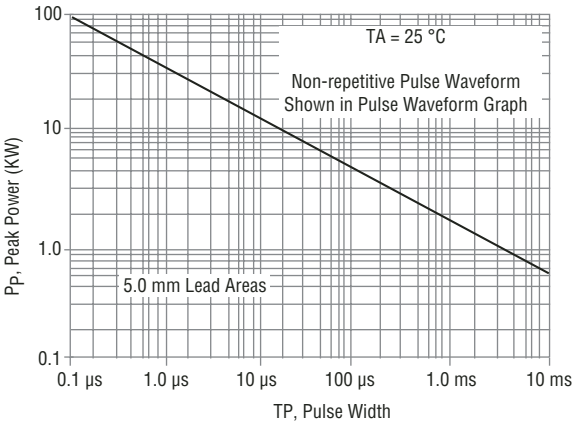
Pulse Waveform



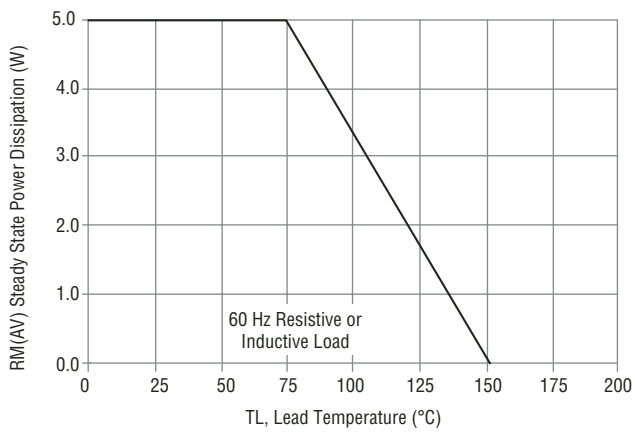
Typical Junction Capacitance



Pulse Rating Curve

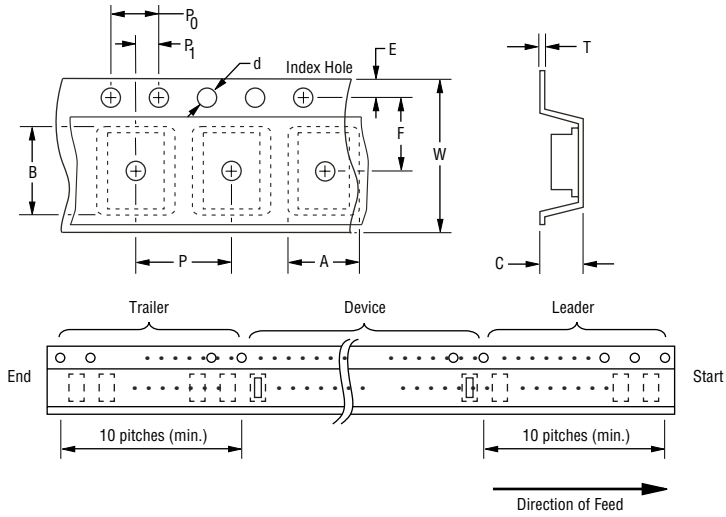


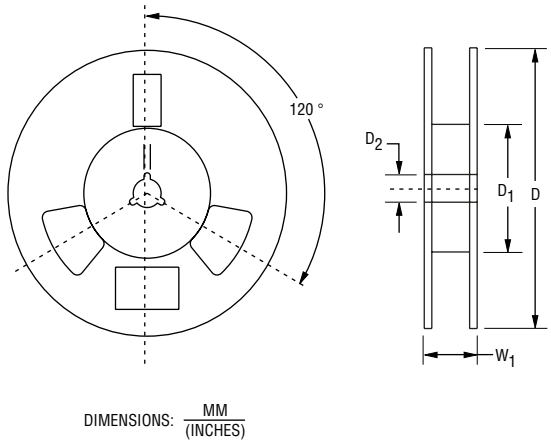
Steady State Power Derating Curve



Packaging Information

The product will be dispensed in Tape and Reel format (see diagram below).





DIMENSIONS: MM (INCHES)

Devices are packed in accordance with EIA standard RS-481-A and specifications shown here.

Item	Symbol	SMC (DO-214AB)
Carrier Width	A	7.22 ± 0.10 (0.284 - 0.004)
Carrier Length	B	8.11 ± 0.10 (0.319 - 0.004)
Carrier Depth	C	2.36 ± 0.10 (0.093 - 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 ± 0.20 (0.512 - 0.008)
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	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 ± 0.10 (0.079 - 0.004)
Overall Tape Thickness	T	0.30 ± 0.10 (0.012 - 0.004)
Tape Width	W	16.00 ± 0.20 (0.630 - 0.008)
Reel Width	W_1	22.4 (0.882) MAX.
Quantity per Reel	--	3,000

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