THE DATASHEET OF

CD0603-Z8V2

Features

- RoHS compliant*
- Zener voltages 2.0 V to 39 V
- Fits SOD323 and SOD523

This series is currently available, but not recommended for new designs.

CD0603/1005-Z Surface Mount Zener 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 Zener Diodes for voltage reference applications, in compact chip package 0603 and 1005 size format, which offer PCB real estate savings and are considerably smaller than most competitive parts. The Zener Diodes have a zener voltage range between 2.0 V and 39 V.

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

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

Parameter	Symbol	CD1005-Z	CD0603-Z	Unit
Power Dissipation @ T=25 °C	P_D	200	150	mW
Peak Forward Surge Current 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC Method)	I_{FSM}	2.0	2.0	A
Operating and Storage Temperature Range	T_J	-55 to +125	-55 to +125	°C

Notes:
1. Pulse test width PW=300 μsec, 1 % duty cycle.
2. Mounted on P.C. board with 0.2 x 0.2 " (5.0 x 5.0 mm) copper pad areas.

How To Order

CD 0603 - Z 2V2

Common Code
Chip Diode

Package
- 0603
- 1005

Model
Z = Zener Diode

Nominal Zener Voltage
2V2 = 2.2 Volts
39 = 39 Volts

BOURNS®

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www.bourns.com

Applications

- DC-DC converters
- Portable electronics
- Industrial controllers
- Desktop PCs and notebooks

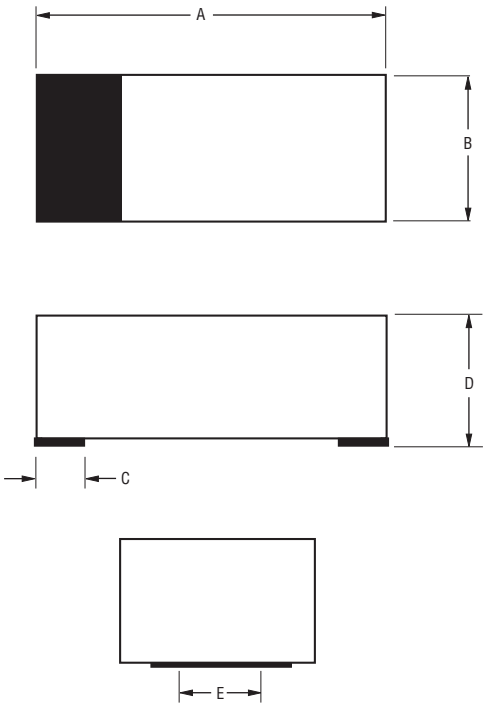
CD0603/1005-Z Surface Mount Zener Diode Series BOURNS®

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

Part Number		Part Marking	Zener Voltage			Zener Impedance				Reverse Current	
			VZ			Z_{ZT}	I_Z	Z_{ZK}	I_Z	I_R	
CD0603	CD1005		Min. V	Max. V	I_Z (mA)	Ohms	mA	Ohms	mA	μA	VR
-Z2	-Z2	Z0	1.90	2.1	5	100	5	600	1	100	1
-Z2V2	-Z2V2	Z1	2.09	2.31	5	100	5	600	1	100	1
-Z2V4	-Z2V4	Z2	2.28	2.52	5	85	5	600	1	100	1
-Z2V7	-Z2V7	Z3	2.57	2.84	5	83	5	500	1	75	1
-Z3	-Z3	Z4	2.85	3.15	5	95	5	500	1	50	1
-Z3V3	-Z3V3	Z5	3.14	3.47	5	95	5	500	1	25	1
-Z3V6	-Z3V6	Z6	3.42	3.78	5	95	5	500	1	15	1
-Z3V9	-Z3V9	Z7	3.71	4.10	5	95	5	500	1	10	1
-Z4V3	-Z4V3	Z8	4.09	4.52	5	95	5	500	1	5	1
-Z4V7	-Z4V7	Z9	4.47	4.94	5	78	5	500	1	5	2
-Z5V1	-Z5V1	ZA	4.85	5.36	5	60	5	480	1	0.1	0.8
-Z5V6	-Z5V6	ZB	5.32	5.88	5	40	5	400	1	0.1	1
-Z6V2	-Z6V2	ZC	5.89	6.51	5	10	5	200	1	0.1	2
-Z6V8	-Z6V8	ZE	6.46	7.14	5	8	5	150	1	0.1	3
-Z7V5	-Z7V5	ZF	7.13	7.88	5	7	5	50	1	0.1	5
-Z8V2	-Z8V2	ZG	7.79	8.61	5	7	5	50	1	0.1	6
-Z9V1	-Z9V1	ZH	8.65	9.56	5	10	5	50	1	0.1	7
-Z10	-Z10	ZJ	9.50	10.50	5	15	5	70	1	0.1	7.5
-Z11	-Z11	ZK	10.45	11.55	5	20	5	70	1	0.1	8.5
-Z12	-Z12	ZM	11.40	12.60	5	20	5	90	1	0.1	9
-Z13	-Z13	ZN	12.35	13.65	5	25	5	110	1	0.1	10
-Z15	-Z15	ZP	14.25	15.75	5	30	5	110	1	0.1	11
-Z16	-Z16	ZQ	15.20	16.80	5	40	5	170	1	0.1	12
-Z18	-Z18	ZR	17.10	18.90	5	50	5	170	1	0.1	14
-Z20	-Z20	ZS	19.00	21.00	5	50	5	220	1	0.1	15
-Z22	-Z22	ZT	20.90	23.10	5	55	5	220	1	0.1	17
-Z24	-Z24	ZU	22.80	25.20	5	80	5	220	1	0.1	18
-Z27	-Z27	ZV	25.65	28.35	5	80	5	250	1	0.1	20
-Z30	-Z30	ZW	28.50	31.50	5	80	5	250	1	0.1	23
-Z33	-Z33	ZX	31.35	34.65	5	80	5	250	1	0.1	25
-Z36	-Z36	ZY	34.20	37.80	5	90	5	250	1	0.1	27
-Z39	-Z39	ZZ	37.05	40.95	5	90	5	300	1	0.1	39

CD0603/1005-Z Surface Mount Zener Diode Series BOURNS®

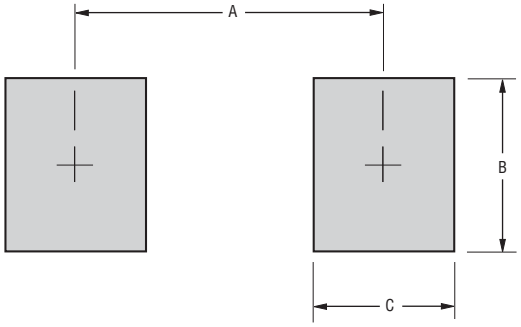
Product Dimensions



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	0.45 (0.018) Typ.	0.50 (0.020) Typ.
D	0.70 - 0.85 (0.027 - 0.033)	0.70 - 0.90 (0.027 - 0.035)
E	0.70 (0.028) Typ.	1.00 (0.039) Typ.

DIMENSIONS: MM (INCHES)

Recommended Pad Layout



Dimension	0603	1005
A (Max.)	1.25 (0.049)	2.00 (0.079)
B (Min.)	1.00 (0.039)	1.3 (0.051)
C (Min.)	0.6 (0.024)	0.7 (0.028)

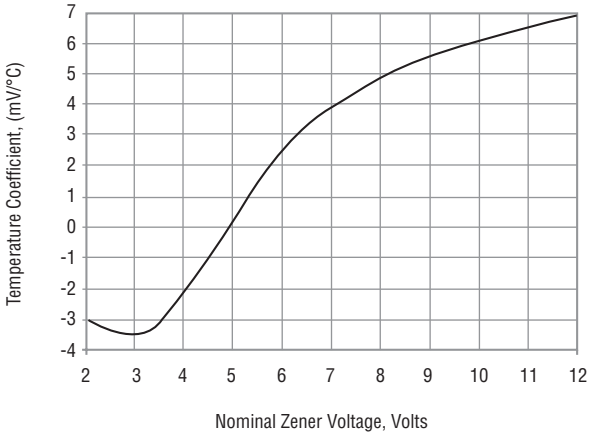
DIMENSIONS: MM (INCHES)

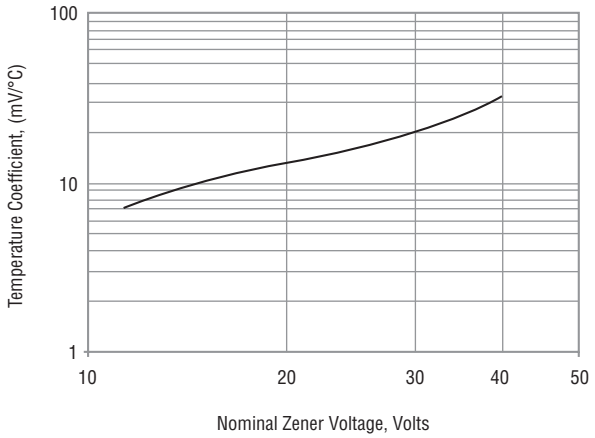
Physical Specifications

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

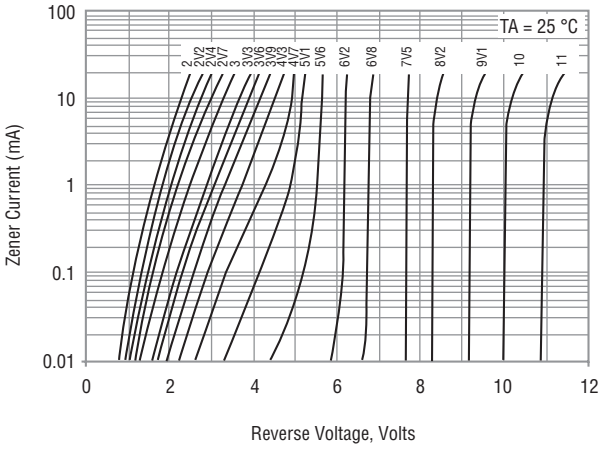
Rating and Characteristic Curves

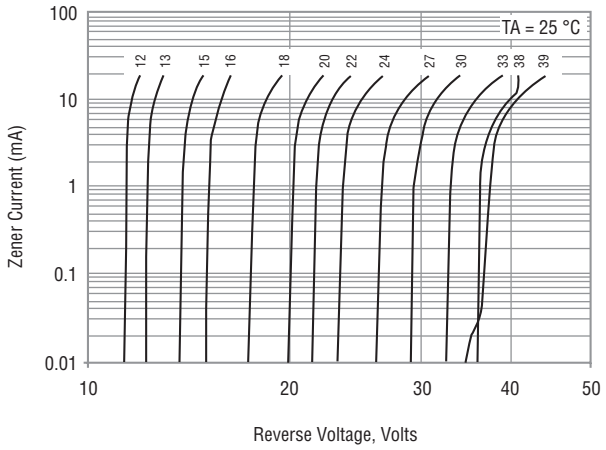
Temperature Sensitivity



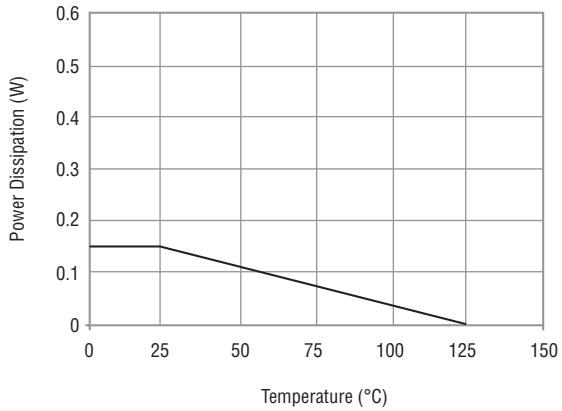


Zener Current vs. Zener Voltage Characteristics

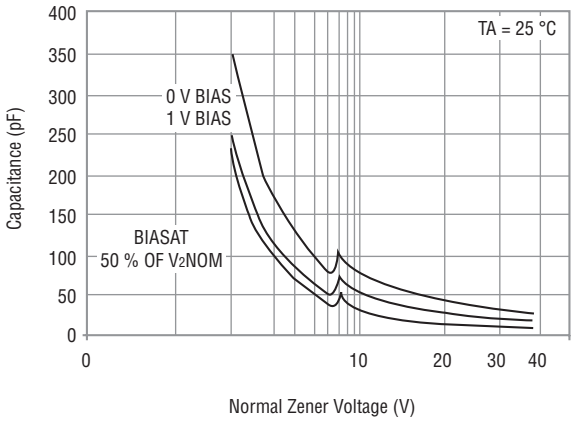




Derating Curve

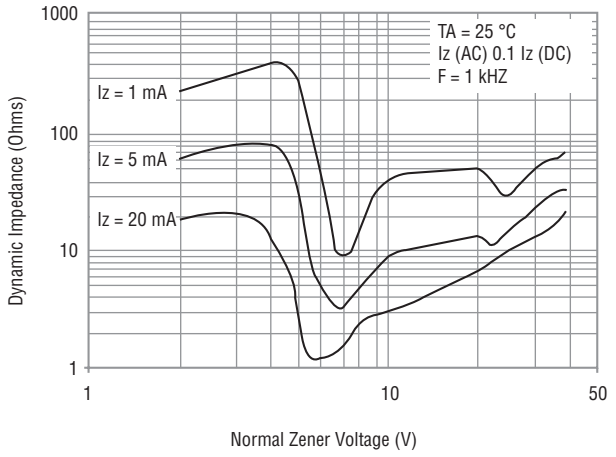


Typical Junction Capacitance

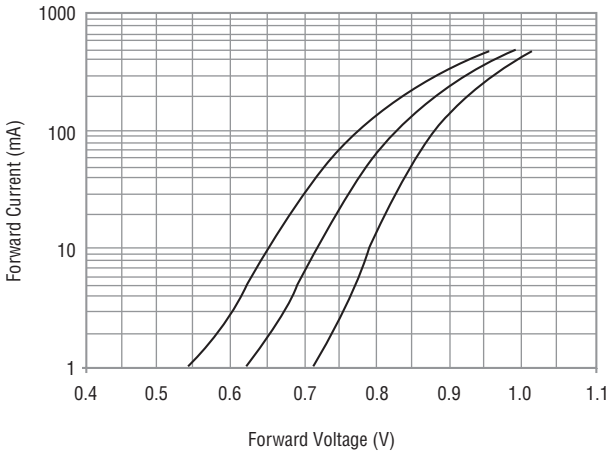


Rating and Characteristic Curves:

Zener Impedance vs. Voltage

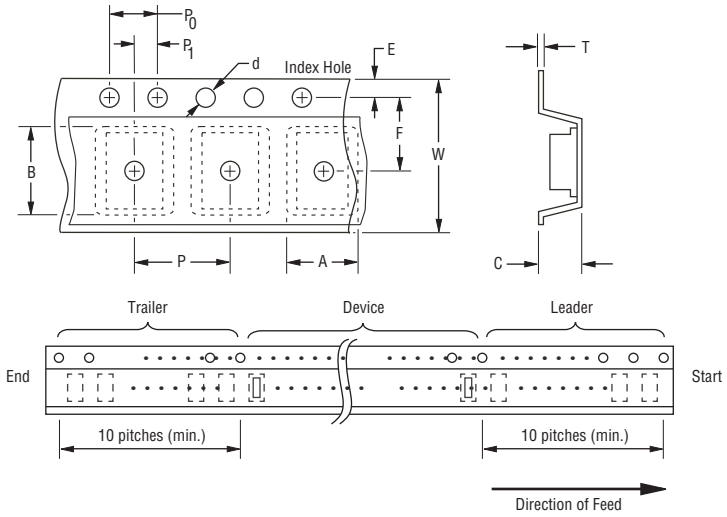


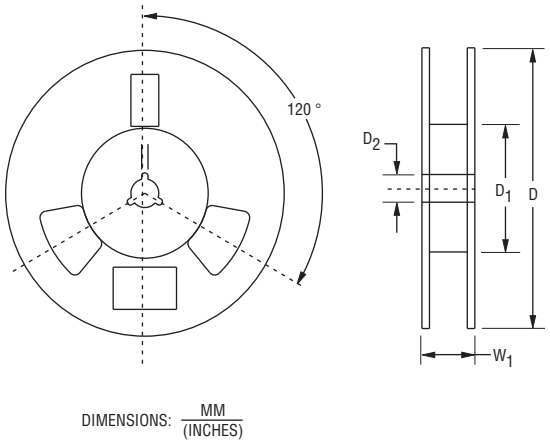
Forward Current vs. Voltage



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	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

Looking for pricing, stock, or lifecycle information?

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- Excess Inventory Management