

## Applications

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

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

Electrical Characteristics (@ T<sub>A</sub> = 25 °C Unless Otherwise Noted)

Part Number		Part Marking	Zener Voltage			Zener Impedance				Reverse Current	
			VZ			Z <sub>ZT</sub>	I <sub>Z</sub>	Z <sub>ZK</sub>	I <sub>Z</sub>	I <sub>R</sub>	
CD0603	CD1005		Min. V	Max. V	I <sub>Z</sub> (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

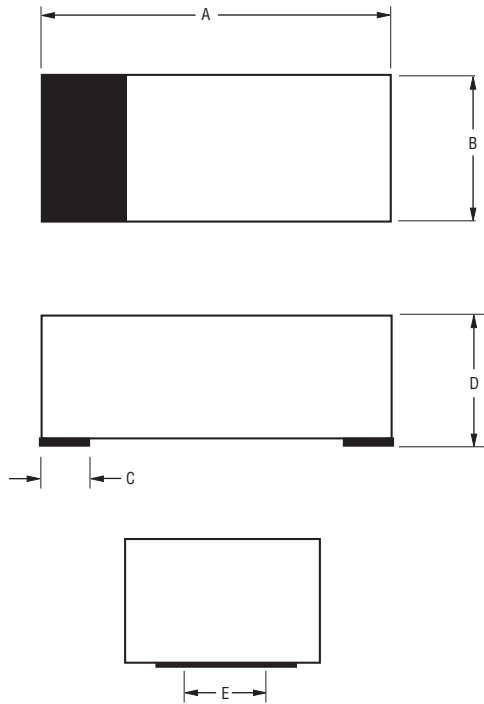
Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

# CD0603/1005-Z Surface Mount Zener Diode Series



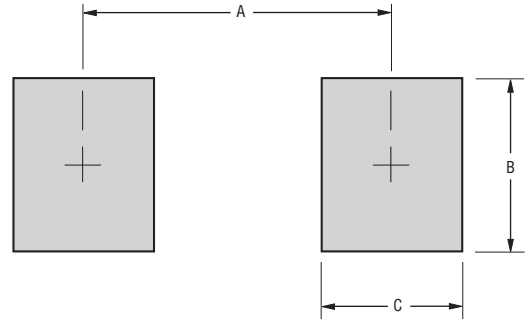
## Product Dimensions



Dimension	0603	1005
A	$\frac{1.60 - 1.80}{(0.063 - 0.071)}$	$\frac{2.40 - 2.60}{(0.095 - 0.102)}$
B	$\frac{0.80 - 1.00}{(0.031 - 0.039)}$	$\frac{1.10 - 1.30}{(0.043 - 0.051)}$
C	$\frac{0.45}{(0.018)}$ Typ.	$\frac{0.50}{(0.020)}$ Typ.
D	$\frac{0.70 - 0.85}{(0.027 - 0.033)}$	$\frac{0.70 - 0.90}{(0.027 - 0.035)}$
E	$\frac{0.70}{(0.028)}$ Typ.	$\frac{1.00}{(0.039)}$ Typ.

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

## Recommended Pad Layout



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

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

## 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

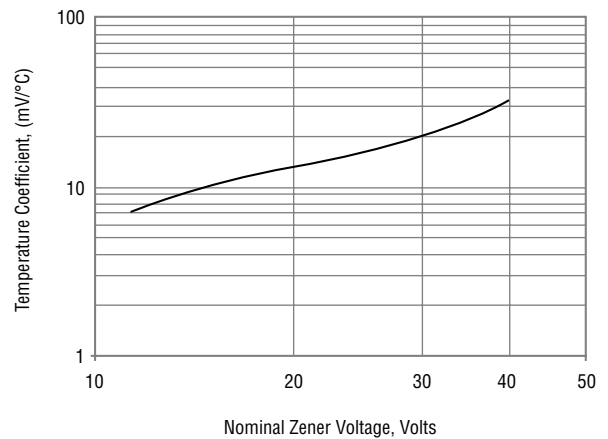
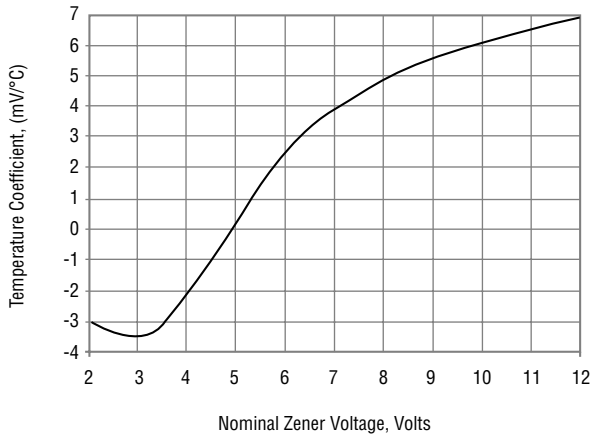
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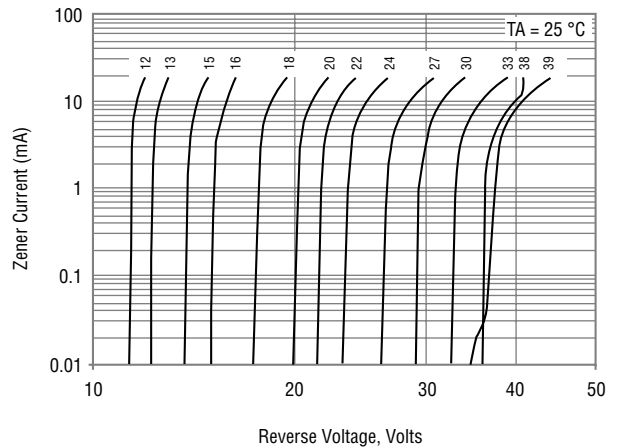
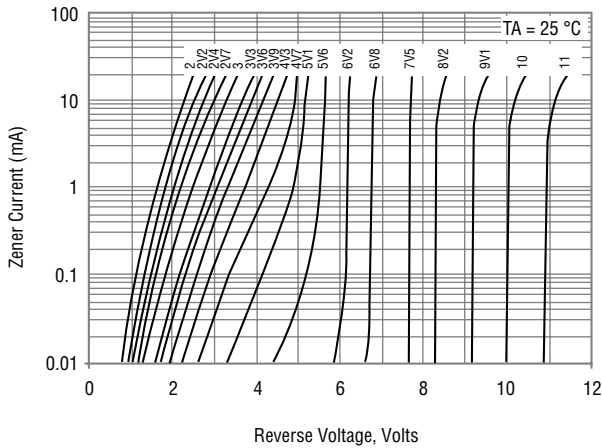


## Rating and Characteristic Curves

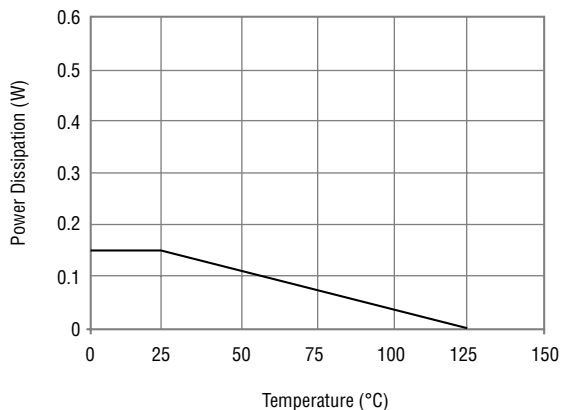
### Temperature Sensitivity



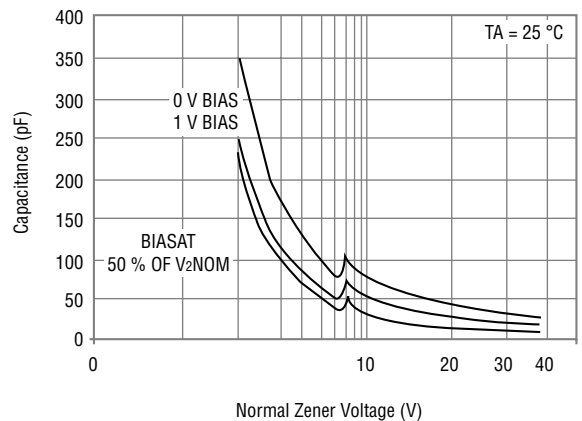
### Zener Current vs. Zener Voltage Characteristics



### Derating Curve



### Typical Junction Capacitance



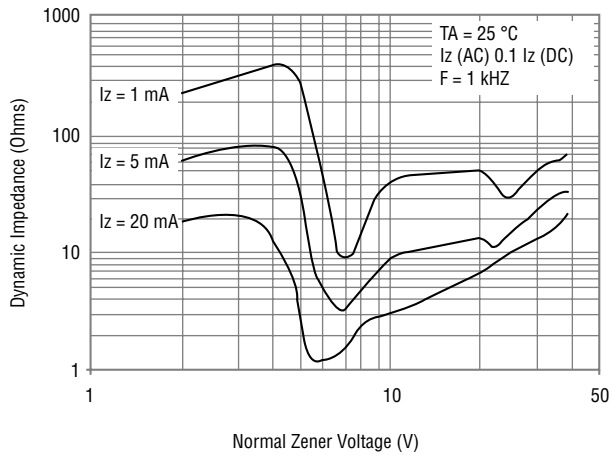
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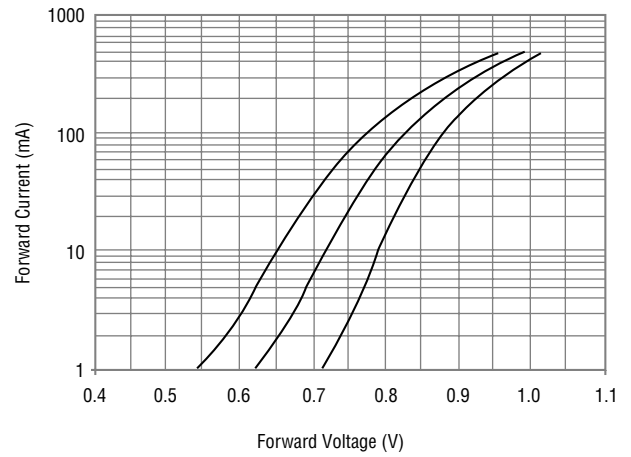


## Rating and Characteristic Curves:

### Zener Impedance vs. Voltage



### Forward Current vs. Voltage



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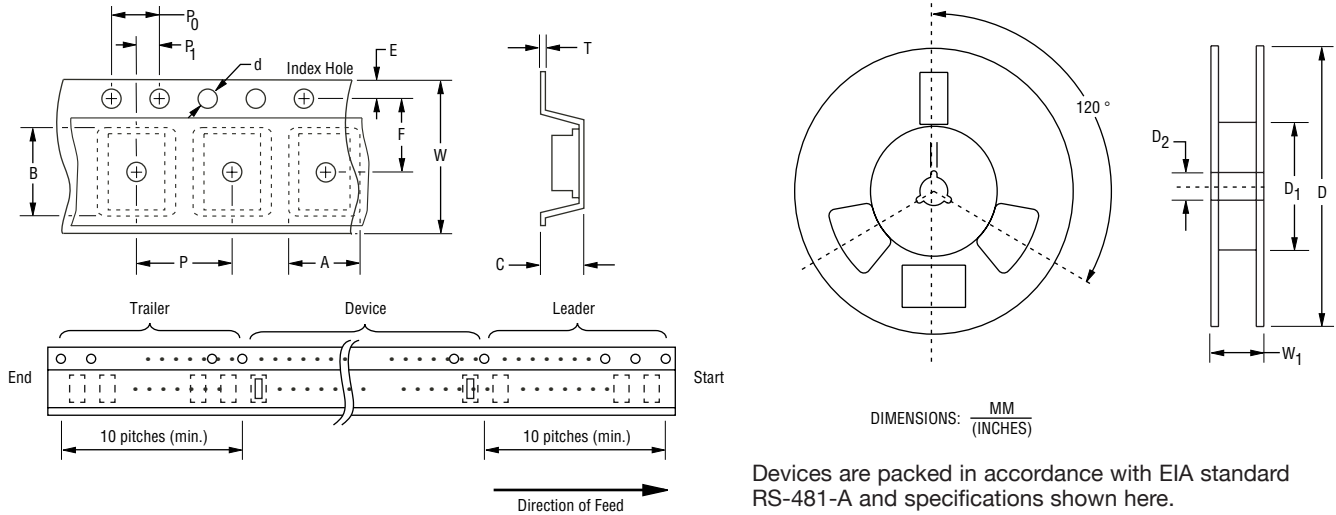
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# CD0603/1005-Z Surface Mount Zener Diode Series

# BOURNS®

## Packaging Information

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



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

Item	Symbol	0603	1005
Carrier Width	A	$\frac{1.00 \pm 0.10}{(0.039 - 0.004)}$	$\frac{1.55 \pm 0.10}{(0.061 - 0.004)}$
Carrier Length	B	$\frac{1.85 \pm 0.10}{(0.073 - 0.004)}$	$\frac{2.65 \pm 0.10}{(0.104 - 0.004)}$
Carrier Depth	C	$\frac{1.00 \pm 0.10}{(0.039 - 0.004)}$	$\frac{1.05 \pm 0.10}{(0.041 - 0.004)}$
Sprocket Hole	d	$\frac{1.55 \pm 0.05}{(0.061 - 0.002)}$	$\frac{1.55 \pm 0.10}{(0.061 - 0.004)}$
Reel Outside Diameter	D	$\frac{178}{(7.008)}$	$\frac{178}{(7.008)}$
Reel Inner Diameter	D <sub>1</sub>	$\frac{60.0}{(2.362)} \text{ MIN.}$	$\frac{60.0}{(2.362)} \text{ MIN.}$
Feed Hole Diameter	D <sub>2</sub>	$\frac{13.0 \pm 0.20}{(0.512 - 0.008)}$	$\frac{13.0 \pm 0.20}{(0.512 - 0.008)}$
Sprocket Hole Position	E	$\frac{1.75 \pm 0.10}{(0.069 - 0.004)}$	$\frac{1.75 \pm 0.10}{(0.069 - 0.004)}$
Punch Hole Position	F	$\frac{3.50 \pm 0.05}{(0.138 - 0.002)}$	$\frac{3.50 \pm 0.05}{(0.138 - 0.002)}$
Punch Hole Pitch	P	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$
Sprocket Hole Pitch	P <sub>0</sub>	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$
Embossment Center	P <sub>1</sub>	$\frac{2.00 \pm 0.05}{(0.079 - 0.002)}$	$\frac{2.00 \pm 0.05}{(0.079 - 0.002)}$
Overall Tape Thickness	T	$\frac{0.20 \pm 0.05}{(0.008 - 0.002)}$	$\frac{0.25 \pm 0.05}{(0.010 - 0.002)}$
Tape Width	W	$\frac{8.00 \pm 0.20}{(0.315 - 0.008)}$	$\frac{8.00 \pm 0.20}{(0.315 - 0.008)}$
Reel Width	W <sub>1</sub>	$\frac{13.5}{(0.531)} \text{ MAX.}$	$\frac{13.5}{(0.531)} \text{ MAX.}$
Quantity per Reel	--	4,000	4,000

REV. 10/15

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# Mouser Electronics

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