

**CMZ5334B THRU CMZ5388B**  
**SURFACE MOUNT SILICON**  
**HIGH POWER ZENER DIODES**  
**5.0 WATT, 3.6 THRU 200 VOLT**  
**±5% TOLERANCE**



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**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMZ5334B series silicon Zener diodes are voltage regulators, manufactured in an epoxy molded surface mount package, and designed for use in industrial, commercial, entertainment and computer applications.

**MARKING: SEE MARKING CODE ON ELECTRICAL CHARACTERISTICS TABLE**



**SMC CASE**

**MAXIMUM RATINGS:**

Power Dissipation ( $T_L=50^\circ\text{C}$ ) (Note 1)  
 Power Dissipation ( $T_L=100^\circ\text{C}$ ) (Note 1)  
 Operating Junction Temperature  
 Storage Temperature  
 Thermal Resistance (Note 1)

**SYMBOL**

$P_D$  10  
 $P_D$  5.0  
 $T_J$  -65 to +175  
 $T_{stg}$  -65 to +200  
 $\theta_{JL}$  12.5

**UNITS**

W  
 W  
 $^\circ\text{C}$   
 $^\circ\text{C}$   
 $^\circ\text{C/W}$

Note 1: Mounted on 2 inch square FR-4 PCB with minimum recommended SMC copper pad area.

**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$ )  $V_F=1.2\text{V MAX @ } I_F=1.0\text{A}$  (for all types)

TYPE	ZENER VOLTAGE $V_Z @ I_{ZT}$			TEST CURRENT $I_{ZT}$	MAXIMUM ZENER IMPEDANCE			MAXIMUM REVERSE CURRENT		MAXIMUM SURGE CURRENT (Note 2) $i_r$	MAXIMUM REGULATOR CURRENT ( $T_L=75^\circ\text{C}$ ) $I_{ZM}$	MARKING CODE
	MIN	NOM	MAX		$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	$I_R @ V_R$					
	V	V	V				$\mu\text{A}$	V				
CMZ5334B*	3.420	3.6	3.780	350	3.0	500	1.0	150	1.0	18.7	1320	C5334B
CMZ5335B*	3.705	3.9	4.095	320	2.0	500	1.0	50	1.0	17.6	1220	C5335B
CMZ5336B*	4.085	4.3	4.515	290	2.0	500	1.0	10	1.0	16.4	1100	C5336B
CMZ5337B*	4.465	4.7	4.935	264	2.0	450	1.0	10	1.0	15.3	1010	C5337B
CMZ5338B*	4.845	5.1	5.355	240	2.0	400	1.0	10	1.0	14.4	930	C5338B
CMZ5339B	5.320	5.6	5.880	220	1.0	400	1.0	10	2.0	13.4	865	C5339B
CMZ5340B	5.700	6.0	6.300	200	1.0	300	1.0	10	3.0	12.7	790	C5340B
CMZ5342B	6.460	6.8	7.140	175	1.0	200	1.0	100	5.2	11.5	700	C5342B
CMZ5343B	7.125	7.5	7.875	175	1.5	200	1.0	100	5.7	10.7	630	C5343B
CMZ5344B	7.790	8.2	8.610	150	1.5	200	1.0	100	6.2	10.0	580	C5344B
CMZ5345B	8.265	8.7	9.135	150	2.0	200	1.0	100	6.6	7.5	545	C5345B
CMZ5346B	8.645	9.1	9.555	150	2.0	150	1.0	7.5	6.9	9.2	520	C5346B
CMZ5347B	9.500	10	10.50	125	2.0	125	1.0	5.0	7.6	8.6	475	C5347B
CMZ5348B	10.45	11	11.55	125	2.5	125	1.0	5.0	8.4	8.0	430	C5348B
CMZ5349B	11.40	12	12.60	100	2.5	125	1.0	2.0	9.1	7.5	395	C5349B
CMZ5350B	12.35	13	13.65	100	2.5	100	1.0	1.0	9.9	7.0	365	C5350B
CMZ5351B	13.30	14	14.70	100	2.5	75	1.0	1.0	10.6	6.7	340	C5351B
CMZ5352B	14.25	15	15.75	75	2.5	75	1.0	1.0	11.5	6.3	315	C5352B
CMZ5353B	15.20	16	16.80	75	2.5	75	1.0	1.0	12.2	6.0	295	C5353B
CMZ5354B	16.15	17	17.85	70	2.5	75	1.0	0.5	12.9	5.8	280	C5354B
CMZ5355B	17.10	18	18.90	65	2.5	75	1.0	0.5	13.7	5.5	264	C5355B
CMZ5356B	18.05	19	19.95	65	3.0	75	1.0	0.5	14.4	5.3	250	C5356B

Note 2: Surge Current ( $i_r$ ) - Maximum allowable peak, non-recurrent square wave current ( $t_p=8.3\text{ms}$ ).

\*Available on special order; minimum quantity may apply; consult factory.

R19 (21-February 2023)

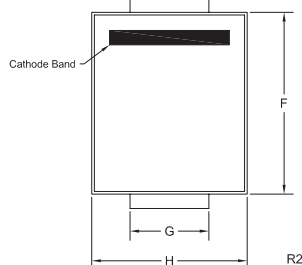
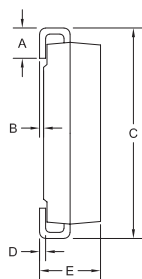
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**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^\circ\text{C}$ )  $V_F=1.2\text{V MAX @ } I_F=1.0\text{A}$  (for all types)

TYPE	ZENER VOLTAGE $V_Z @ I_{ZT}$			TEST CURRENT $I_{ZT}$	MAXIMUM ZENER IMPEDANCE			MAXIMUM REVERSE CURRENT		MAXIMUM SURGE CURRENT (Note 2) $i_r$	MAXIMUM REGULATOR CURRENT ( $T_L=75^\circ\text{C}$ ) $I_{ZM}$	MARKING CODE
	MIN	NOM	MAX		$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	$I_R @ V_R$					
	V	V	V				$\Omega$	mA	$\mu\text{A}$			
CMZ5357B	19.00	20	21.00	65	3.0	75	1.0	0.5	15.2	5.1	237	C5357B
CMZ5358B	20.90	22	23.10	50	3.5	75	1.0	0.5	16.7	4.7	216	C5358B
CMZ5359B	22.80	24	25.20	50	3.5	100	1.0	0.5	18.2	4.4	198	C5359B
CMZ5360B	23.75	25	26.25	50	4.0	110	1.0	0.5	19.0	4.3	190	C5360B
CMZ5361B	25.65	27	28.35	50	5.0	120	1.0	0.5	20.6	4.1	176	C5361B
CMZ5362B	26.60	28	29.40	50	6.0	130	1.0	0.5	21.2	3.9	170	C5362B
CMZ5363B	28.50	30	31.50	40	8.0	140	1.0	0.5	22.8	3.7	158	C5363B
CMZ5364B	31.35	33	34.65	40	10	150	1.0	0.5	25.1	3.5	144	C5364B
CMZ5365B	34.20	36	37.80	30	11	160	1.0	0.5	27.4	3.3	132	C5365B
CMZ5366B	37.05	39	40.95	30	14	170	1.0	0.5	29.7	3.1	122	C5366B
CMZ5367B	40.85	43	45.15	30	20	190	1.0	0.5	32.7	2.8	110	C5367B
CMZ5368B	44.65	47	49.35	25	25	210	1.0	0.5	35.8	2.7	100	C5368B
CMZ5369B	48.45	51	53.55	25	27	230	1.0	0.5	38.8	2.5	93.0	C5369B
CMZ5370B	53.20	56	58.80	20	35	280	1.0	0.5	42.6	2.3	86.0	C5370B
CMZ5371B	57.00	60	63.00	20	40	350	1.0	0.5	45.5	2.2	79.0	C5371B
CMZ5372B	58.90	62	65.10	20	42	400	1.0	0.5	47.1	2.1	76.0	C5372B
CMZ5373B	64.60	68	71.40	20	44	500	1.0	0.5	51.7	2.0	70.0	C5373B
CMZ5374B	71.25	75	78.75	20	45	620	1.0	0.5	56.0	1.9	63.0	C5374B
CMZ5375B	77.90	82	86.10	15	65	720	1.0	0.5	62.2	1.8	58.0	C5375B
CMZ5376B	82.65	87	91.35	15	75	760	1.0	0.5	66.0	1.7	54.5	C5376B
CMZ5377B	86.45	91	95.55	15	75	760	1.0	0.5	69.2	1.6	52.5	C5377B
CMZ5378B	95.00	100	105.0	12	90	800	1.0	0.5	76.0	1.5	47.5	C5378B
CMZ5379B	104.5	110	115.5	12	125	1000	1.0	0.5	83.6	1.4	43.0	C5379B
CMZ5380B	114.0	120	126.0	10	170	1150	1.0	0.5	91.2	1.3	39.5	C5380B
CMZ5381B	123.5	130	136.5	10	190	1250	1.0	0.5	98.8	1.2	36.6	C5381B
CMZ5382B	133.0	140	147.0	8.0	230	1500	1.0	0.5	106	1.2	34.0	C5382B
CMZ5383B	142.5	150	157.5	8.0	330	1500	1.0	0.5	114	1.1	31.6	C5383B
CMZ5384B	152.0	160	168.0	8.0	350	1650	1.0	0.5	122	1.1	29.4	C5384B
CMZ5385B	161.5	170	178.5	8.0	380	1750	1.0	0.5	129	1.0	28.0	C5385B
CMZ5386B	171.0	180	189.0	5.0	430	1750	1.0	0.5	137	1.0	26.4	C5386B
CMZ5387B	180.5	190	199.5	5.0	450	1850	1.0	0.5	144	0.9	25.0	C5387B
CMZ5388B	190.0	200	210.0	5.0	480	1850	1.0	0.5	152	0.9	23.6	C5388B

**SMC CASE - MECHANICAL OUTLINE**



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.030	0.060	0.76	1.52
B	0.002	0.008	0.05	0.20
C	0.305	0.320	7.75	8.13
D	0.006	0.012	0.15	0.31
E	0.079	0.103	2.00	2.62
F	0.260	0.280	6.60	7.11
G	0.108	0.128	2.75	3.25
H	0.220	0.245	5.59	6.22

SMC (REV: R2)

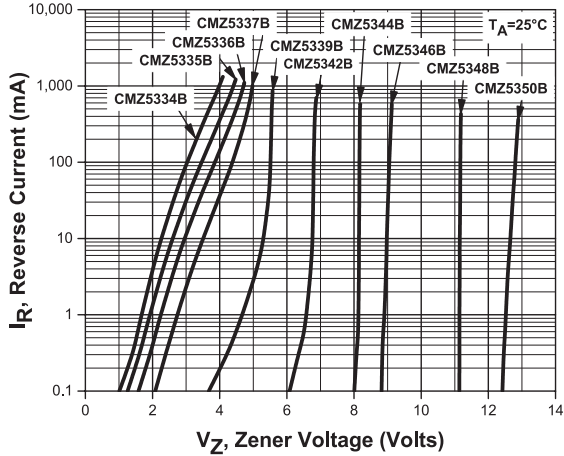
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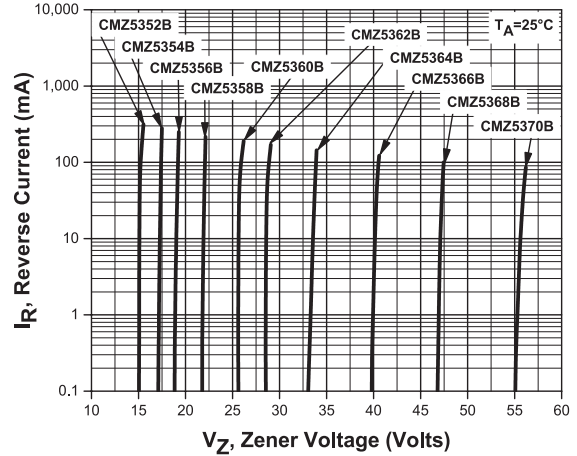


TYPICAL ELECTRICAL CHARACTERISTICS

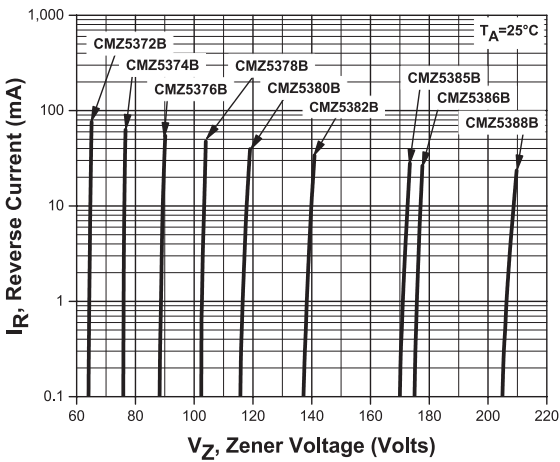
Zener Voltage CMZ5334B thru CMZ5350B



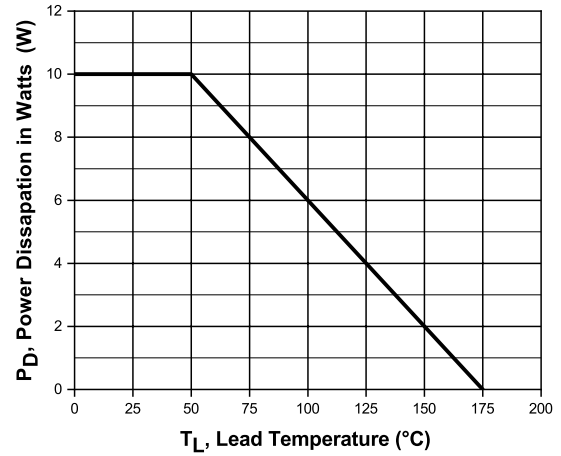
Zener Voltage CMZ5352B thru CMZ5370B



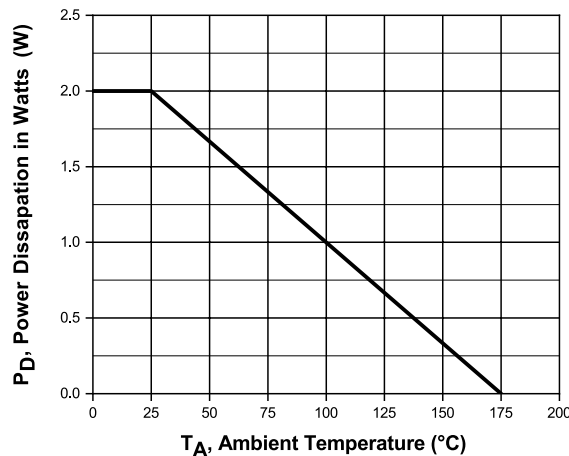
Zener Voltage CMZ5372B thru CMZ5388B



Power Derating



Power Derating



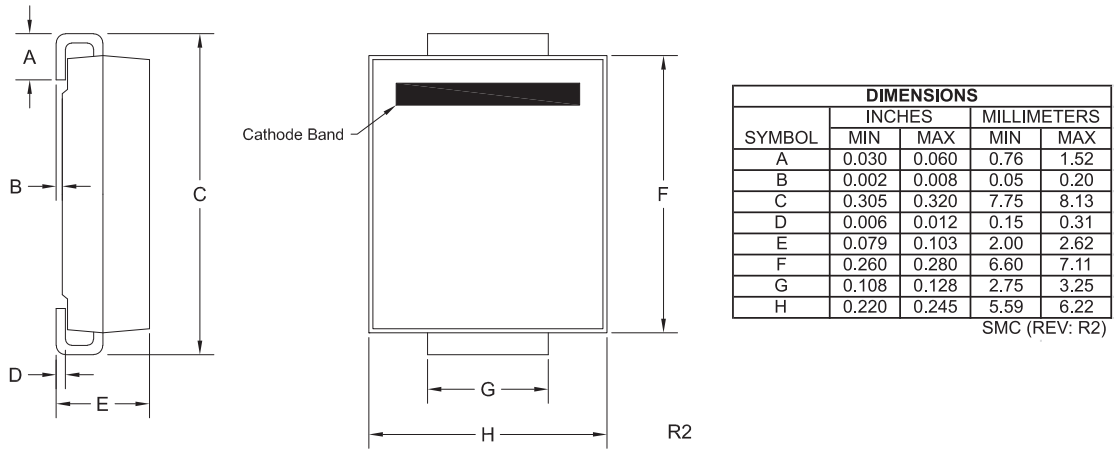
Note: Mounted on 2 inch square FR-4 PCB with minimum recommended SMC copper pad area.

# Package Details

## SMC Case



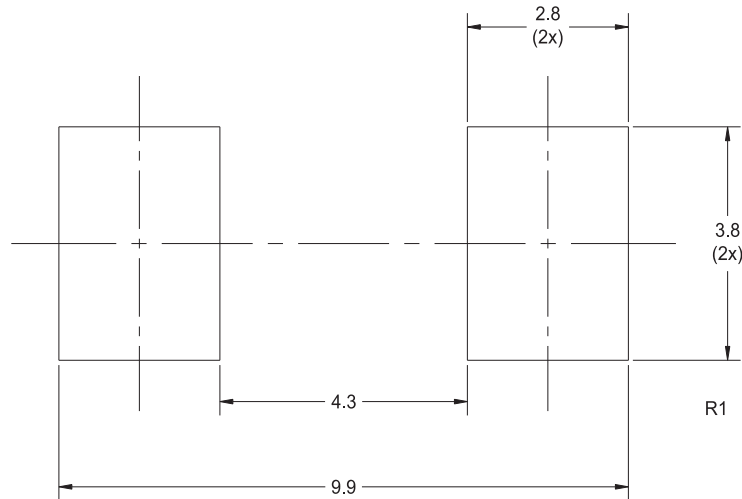
### Mechanical Drawing



**Lead Code:**  
Reference individual device datasheet.

**Part Marking:** 3-6 Character Alpha/Numeric Code

### Mounting Pad Geometry (Dimensions in mm)



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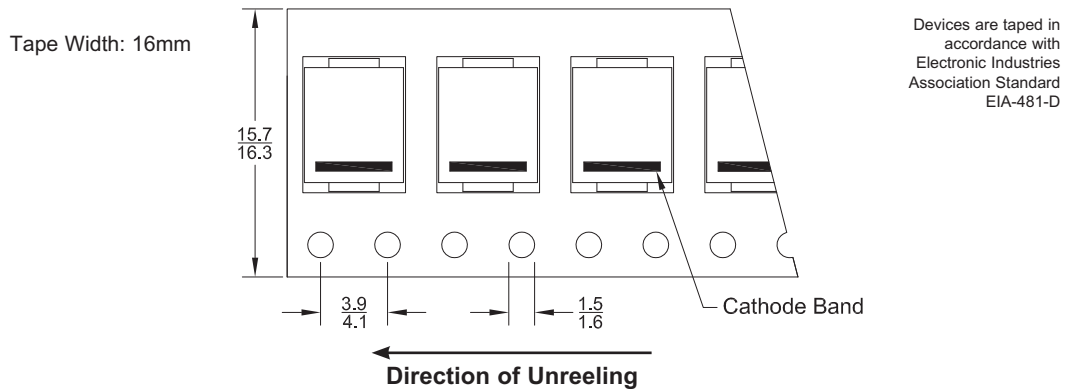
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# Package Details

## SMC Case



### Tape Dimensions and Orientation (Dimensions in mm)



### Packaging Base

13" Reel = 3,000 pcs.

### Reel Labeling Information

Each reel is labeled with the following information:

Central Part Number, Customer Part Number, Purchase Order Number, Quantity, Lot Number, Date Code and Ship Date.

### Reel Packing Information

Reel Size	Reels per Box (Maximum)	Parts per Box (Maximum)	Box Dimensions		Shipping Weight (Max.)	
			INCH	CM	LB	KG
13"	4	12,000	15x4x15	38x10x38	12	6
	11	33,000	15x15x9	38x38x23	30	14
	24	72,000	15x15x18	38x38x46	64	29

### Ordering Information

- For devices taped and reeled on 13" reels, add TR13 suffix to part number.
- All SMDs are available in small quantities for prototype and manual placement applications.

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# Material Composition Specification

## SMC Case



Device average mass . . . . . 232.5 mg  
 Fluctuation margin . . . . . +/-10%

Component	Material	Material		Substance	CAS No.	Substance		
		(%wt)	(mg)			(%wt)	(mg)	(ppm)
active device	doped Si	1.63%	3.8	Si	7440-21-3	1.63%	3.8	16,344
leadframe	copper	39.11%	90.92	Cu	7440-50-8	39.11%	90.92	391,054
die attach	high temperature solder paste	1.88%	4.36	Pb	7439-92-1	1.73%	4.033	17,346
				Sn	7440-31-5	0.09%	0.218	938
				Ag	7440-22-4	0.05%	0.109	469
encapsulation*	EMC	56.77%	132	silica	7631-86-9	38.61%	89.76	386,065
				epoxy resin	29690-82-2	11.35%	26.4	113,548
				phenol resin	9003-35-4	5.68%	13.2	56,774
				Sb <sub>2</sub> O <sub>3</sub>	1309-64-4	0.57%	1.32	5,677
				Br	7726-95-6	0.57%	1.32	5,677
	EMC GREEN	56.77%	132	silica (fused)	60676-86-0	43.72%	101.64	437,161
				epoxy resin	29690-82-2	5.68%	13.2	56,774
				phenol resin	9003-35-4	5.51%	12.804	55,071
				carbon black	1333-86-4	0.17%	0.396	1,703
				metal hydroxide	1309-42-8	1.7%	3.96	17,032
plating**	tin/lead process	0.61%	1.42	Sn	7440-31-5	0.49%	1.136	4,886
				Pb	7439-92-1	0.12%	0.284	1,222
	matte tin	0.61%	1.42	Sn	7440-31-5	0.61%	1.42	6,108

\*EMC GREEN molding compound is Halogen-Free.

\*\*For Lead Free plating, add suffix "PB FREE" to part number.

For Tin/Lead plating, add suffix "TIN/LEAD" to part number.

No suffix designation allows for the supply of either lead-free or tin/lead plated product depending on availability.

### Disclaimer

The information provided in this Material Composition data sheet is, to the best of our knowledge, correct. However, there is no guarantee to completeness or accuracy, as some information is derived from data sources outside the company.

R6 (16-July 2018)

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# Material Composition Specification

## SMC Case



Device average mass . . . . . 232.5 mg  
 Fluctuation margin . . . . . +/-10%

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	EMC GREEN	56.77%	132	silica (fused)	60676-86-0	43.72%	101.64	437,161
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	matte tin	0.61%	1.42	Sn	7440-31-5	0.61%	1.42	6,108

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