

CMZ5339BQ THRU CMZ5373BQ

**SURFACE MOUNT SILICON
AUTOMOTIVE ZENER DIODES
5.0 WATT, 5.6 THRU 68 VOLT
±5% TOLERANCE**

www.centrasemi.com**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMZ5339BQ series silicon Zener diodes are voltage regulators, in an epoxy molded surface mount package, manufactured and qualified to AEC-Q101.

**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
 θ_{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°C) I _{ZM}	MARKING CODE
	MIN	NOM	MAX		I _{ZT}	Z _{ZT} @ I _{ZT}	Z _{ZK} @ I _{ZK}	I _R @ V _R				
	V	V	V		mA	Ω	Ω	mA	μA			
CMZ5339BQ	5.320	5.6	5.880	220	1.0	400	1.0	10	2.0	13.4	865	C5339B
CMZ5340BQ	5.700	6.0	6.300	200	1.0	300	1.0	10	3.0	12.7	790	C5340B
CMZ5342BQ	6.460	6.8	7.140	175	1.0	200	1.0	100	5.2	11.5	700	C5342B
CMZ5343BQ	7.125	7.5	7.875	175	1.5	200	1.0	100	5.7	10.7	630	C5343B
CMZ5344BQ	7.790	8.2	8.610	150	1.5	200	1.0	100	6.2	10.0	580	C5344B
CMZ5345BQ	8.265	8.7	9.135	150	2.0	200	1.0	100	6.6	7.5	545	C5345B
CMZ5346BQ	8.645	9.1	9.555	150	2.0	150	1.0	7.5	6.9	9.2	520	C5346B
CMZ5347BQ	9.500	10	10.50	125	2.0	125	1.0	5.0	7.6	8.6	475	C5347B
CMZ5348BQ	10.45	11	11.55	125	2.5	125	1.0	5.0	8.4	8.0	430	C5348B
CMZ5349BQ	11.40	12	12.60	100	2.5	125	1.0	2.0	9.1	7.5	395	C5349B
CMZ5350BQ	12.35	13	13.65	100	2.5	100	1.0	1.0	9.9	7.0	365	C5350B
CMZ5351BQ	13.30	14	14.70	100	2.5	75	1.0	1.0	10.6	6.7	340	C5351B
CMZ5352BQ	14.25	15	15.75	75	2.5	75	1.0	1.0	11.5	6.3	315	C5352B
CMZ5353BQ	15.20	16	16.80	75	2.5	75	1.0	1.0	12.2	6.0	295	C5353B
CMZ5354BQ	16.15	17	17.85	70	2.5	75	1.0	0.5	12.9	5.8	280	C5354B
CMZ5355BQ	17.10	18	18.90	65	2.5	75	1.0	0.5	13.7	5.5	264	C5355B
CMZ5356BQ	18.05	19	19.95	65	3.0	75	1.0	0.5	14.4	5.3	250	C5356B
CMZ5357BQ	19.00	20	21.00	65	3.0	75	1.0	0.5	15.2	5.1	237	C5357B
CMZ5358BQ	20.90	22	23.10	50	3.5	75	1.0	0.5	16.7	4.7	216	C5358B
CMZ5359BQ	22.80	24	25.20	50	3.5	100	1.0	0.5	18.2	4.4	198	C5359B
CMZ5360BQ	23.75	25	26.25	50	4.0	110	1.0	0.5	19.0	4.3	190	C5360B
CMZ5361BQ	25.65	27	28.35	50	5.0	120	1.0	0.5	20.6	4.1	176	C5361B

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

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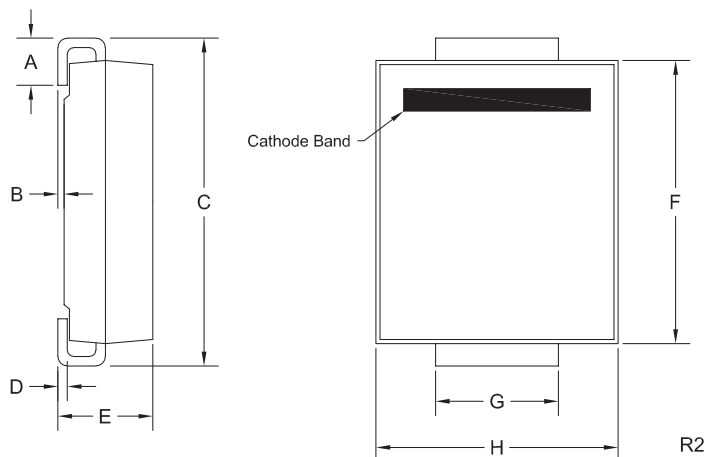
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ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^{\circ}\text{C}$) $V_F=1.2\text{V MAX @ } I_F=1.0\text{A}$ (for all types)

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°C) I _{ZM}	MARKING CODE
	MIN	NOM	MAX		Z _{ZT} @ I _{ZT}	Z _{ZK} @ I _{ZK}		I _R @ V _R				
	V	V	V		Ω	Ω	mA	μA	V			
CMZ5362BQ	26.60	28	29.40	50	6.0	130	1.0	0.5	21.2	3.9	170	C5362B
CMZ5363BQ	28.50	30	31.50	40	8.0	140	1.0	0.5	22.8	3.7	158	C5363B
CMZ5364BQ	31.35	33	34.65	40	10	150	1.0	0.5	25.1	3.5	144	C5364B
CMZ5365BQ	34.20	36	37.80	30	11	160	1.0	0.5	27.4	3.3	132	C5365B
CMZ5366BQ	37.05	39	40.95	30	14	170	1.0	0.5	29.7	3.1	122	C5366B
CMZ5367BQ	40.85	43	45.15	30	20	190	1.0	0.5	32.7	2.8	110	C5367B
CMZ5368BQ	44.65	47	49.35	25	25	210	1.0	0.5	35.8	2.7	100	C5368B
CMZ5369BQ	48.45	51	53.55	25	27	230	1.0	0.5	38.8	2.5	93.0	C5369B
CMZ5370BQ	53.20	56	58.80	20	35	280	1.0	0.5	42.6	2.3	86.0	C5370B
CMZ5371BQ	57.00	60	63.00	20	40	350	1.0	0.5	45.5	2.2	79.0	C5371B
CMZ5372BQ	58.90	62	65.10	20	42	400	1.0	0.5	47.1	2.1	76.0	C5372B
CMZ5373BQ	64.60	68	71.40	20	44	500	1.0	0.5	51.7	2.0	70.0	C5373B

SMC CASE - MECHANICAL OUTLINE



SYMBOL	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

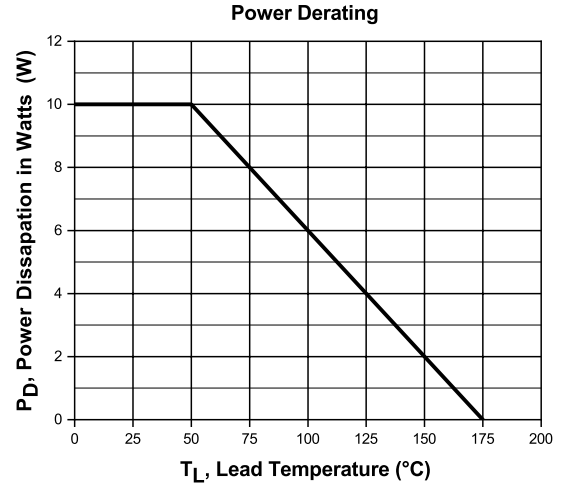
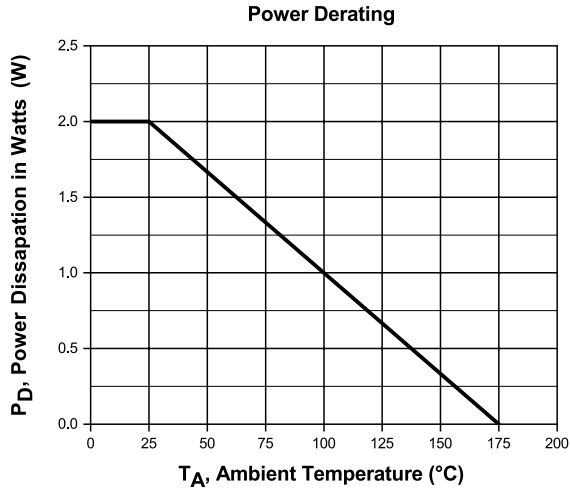
SMC (REV: R2)

R1 (11-March 2025)

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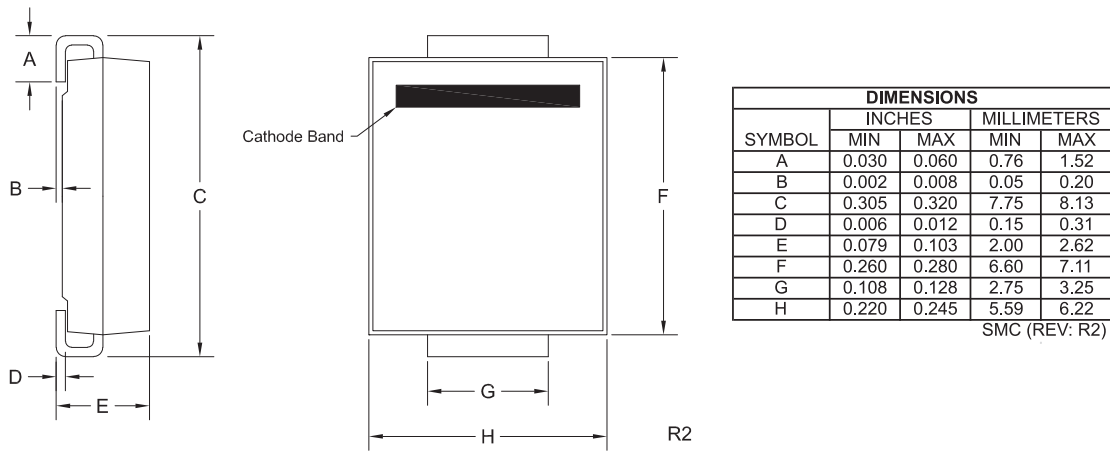
TYPICAL ELECTRICAL CHARACTERISTICS



Package Details
SMC Case



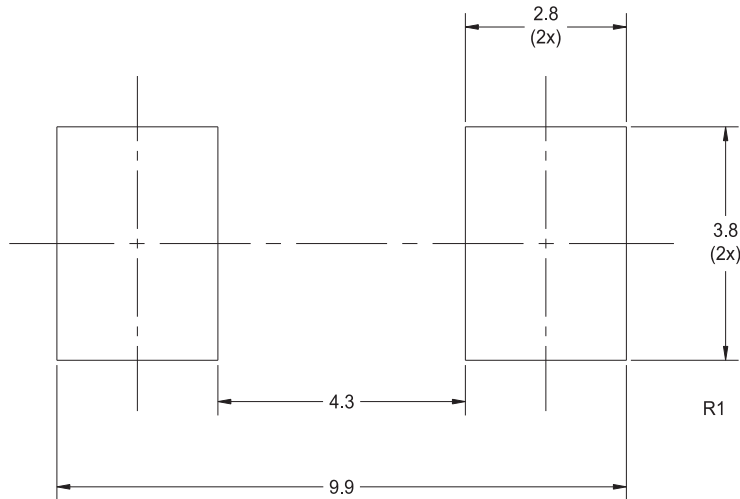
Mechanical Drawing



Lead Code:
Reference individual
device datasheet.

Part Marking: 3-6 Character Alpha/Numeric Code

Mounting Pad Geometry (Dimensions in mm)



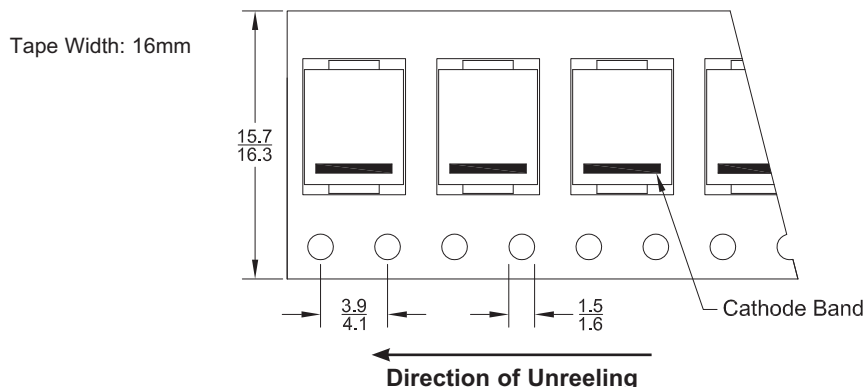
R4 (18-February 2021)

Package Details

SMC Case



Tape Dimensions and Orientation (Dimensions in mm)



Devices are taped in accordance with Electronic Industries Association Standard EIA-481-D

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.

R4 (18-February 2021)

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 ₂ O ₃	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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