

## Zener Diodes

## BZG05C-SERIES

### Features

- High reliability
- Voltage range 3.3 V to 100 V
- Fits onto 5 mm SMD footpads
- RoHS compliant with Halogen-free

HF



### Mechanical Data

- Case: SMA molded plastic
- Molding compound, UL flammability classification rating 94V-0
- Terminals: Solder plated, solderable per MIL-STD-202, Method 208
- Polarity: Color band denotes cathode end

### Absolute Maximum Ratings (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Test condition	Symbol	Value	Unit
Power dissipation	$R_{thJA} < 30 \text{ K/W}$ , $T_{amb} = 60^\circ\text{C}$ $P_{diss} 3 \text{ W}$ $R_{thJA} < 100 \text{ K/W}$ , $T_{amb} = 25^\circ\text{C}$	$P_{diss}$	3	W
Non repetitive peak surge power dissipation	$t_p = 100 \mu\text{s sq.pulse}$ , $T_j = 25^\circ\text{C}$ prior to surge	$P_{diss}$	1.25	W
Junction temperature		$P_{ZSM}$	60	W
Storage temperature range		$T_j$	150	$^\circ\text{C}$

### Thermal Characteristics

Parameter	Test condition	Symbol	Value	Unit
Junction lead		$R_{thJL}$	30	K/W
Junction ambient	mounted on epoxy-glass hard tissue, Fig. 1a	$R_{thJA}$	150	K/W
	mounted on epoxy-glass hard tissue, Fig. 1b	$R_{thJA}$	125	K/W
	mounted on Al-oxid-ceramic ( $\text{Al}_2\text{O}_3$ ), Fig. 1b	$R_{thJA}$	100	K/W

### Electrical Characteristics

Parameter	Test condition	Symbol	Min	Typ	Max	Unit
Forward voltage	$I_F = 0.2 \text{ A}$	$V_F$			1.2	V

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**Electrical Characteristics** (@T<sub>A</sub> = 25°C unless otherwise specified)

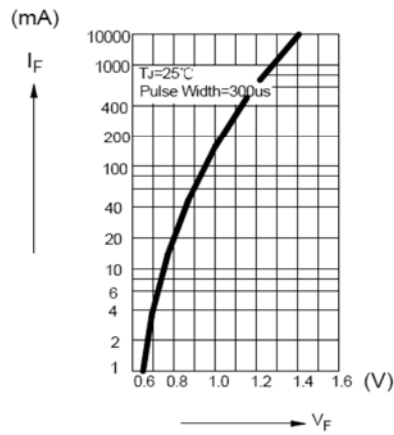
Type	Device marking code	Zener Voltage Range(Note 1)			Leakage Current			Max DC. Current I <sub>ZM</sub> mA
		V <sub>Z</sub> (V)			@I <sub>ZT</sub>	I <sub>R</sub> @ V <sub>R</sub>		
		Min	typ	Max	mA	μA	V	
BZG05C3V3	ZG3.3	3.1	3.3	3.5	80	40	1.0	968
BZG05C3V6	ZG3.6	3.4	3.6	3.8	60	20	1.0	882
BZG05C3V9	ZG3.9	3.7	3.9	4.1	60	10	1.0	811
BZG05C4V3	ZG4.3	4.0	4.3	4.6	50	3.0	1.0	750
BZG05C4V7	ZG4.7	4.4	4.7	5	45	3.0	1.0	682
BZG05C5V1	ZG5.1	4.8	5.1	5.4	45	1.0	1.5	625
BZG05C5V6	ZG5.6	5.2	5.6	6.0	45	1.0	2.0	577
BZG05C6V2	ZG6.2	5.8	6.2	6.6	35	1.0	3.0	517
BZG05C6V8	ZG6.8	6.4	6.8	7.2	35	1.0	4.0	469
BZG05C7V5	ZG7.5	7.0	7.5	7.9	35	0.5	4.5	429
BZG05C8V2	ZG8.2	7.7	8.2	8.7	25	0.5	6.2	390
BZG05C9V1	ZG9.1	8.5	9.1	9.6	25	0.5	6.8	353
BZG05C10	ZG10	9.4	10	10.6	25	0.5	7.0	319
BZG05C11	ZG11	10.4	11	11.6	20	0.5	8.2	288
BZG05C12	ZG12	11.4	12	12.7	20	0.5	9.1	263
BZG05C13	ZG13	12.4	13	14.1	20	0.5	10	242
BZG05C15	ZG15	13.8	15	15.6	15	0.5	11	217
BZG05C16	ZG16	15.3	16	17.1	15	0.5	12	196
BZG05C18	ZG18	16.8	18	19.1	15	0.5	13	179
BZG05C20	ZG20	18.8	20	21.2	10	0.5	15	160
BZG05C22	ZG22	20.8	22	23.3	10	0.5	16	144
BZG05C24	ZG24	22.8	24	25.6	10	0.5	18	132
BZG05C27	ZG27	25.1	27	28.9	8.0	0.5	20	120
BZG05C30	ZG30	28	30	32	8.0	0.5	22	107
BZG05C33	ZG33	31	33	35	8.0	0.5	24	97
BZG05C36	ZG36	34	36	38	8.0	0.5	27	88
BZG05C39	ZG39	37	39	41	6.0	0.5	30	81
BZG05C43	ZG43	40	43	46	6.0	0.5	33	75
BZG05C47	ZG47	44	47	50	4.0	0.5	36	68
BZG05C51	ZG51	48	51	54	4.0	0.5	39	63
BZG05C56	ZG56	52	56	60	4.0	0.5	43	58
BZG05C62	ZG62	58	62	66	4.0	0.5	47	52
BZG05C68	ZG68	64	68	72	4.0	0.5	51	47
BZG05C75	ZG75	70	75	79	4.0	0.5	56	43
BZG05C82	ZG82	77	82	87	2.7	0.5	62	39
BZG05C91	ZG91	85	91	96	2.7	0.5	68	35
BZG05C100	ZG100	95	105	100	2.7	0.5	75	32

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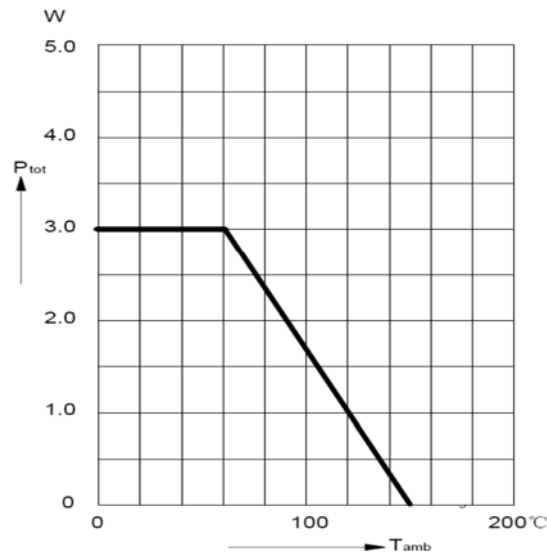
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Ratings and Characteristic Curves (@ $T_A=25^\circ\text{C}$  unless otherwise noted)

**FIG.1 – TYPICAL FORWARD CHARACTERISTIC**



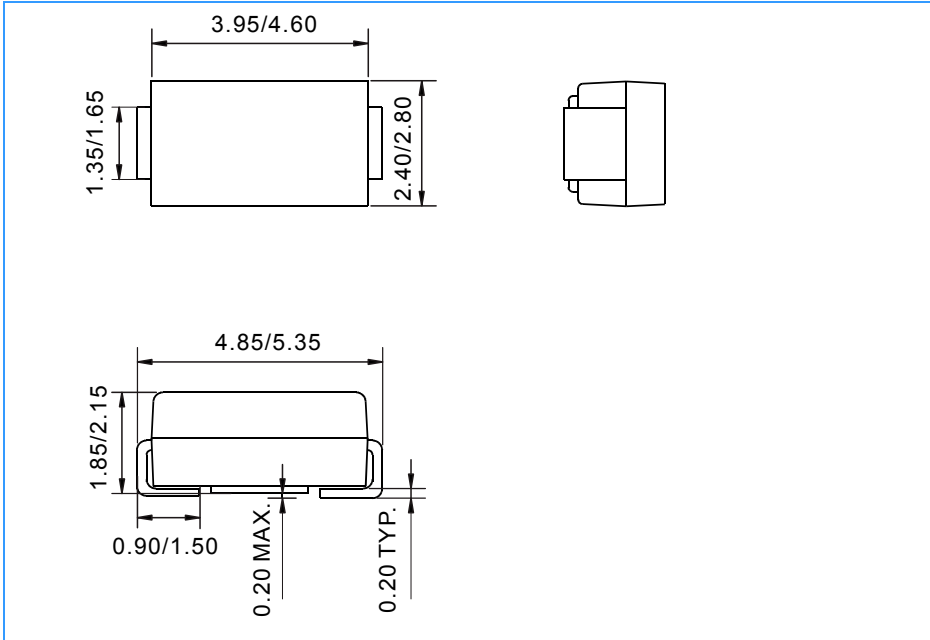
**FIG.2 – ADMISSIBLE POWER DISSIPATION VERSUS AMBIENT TEMPERATURE**



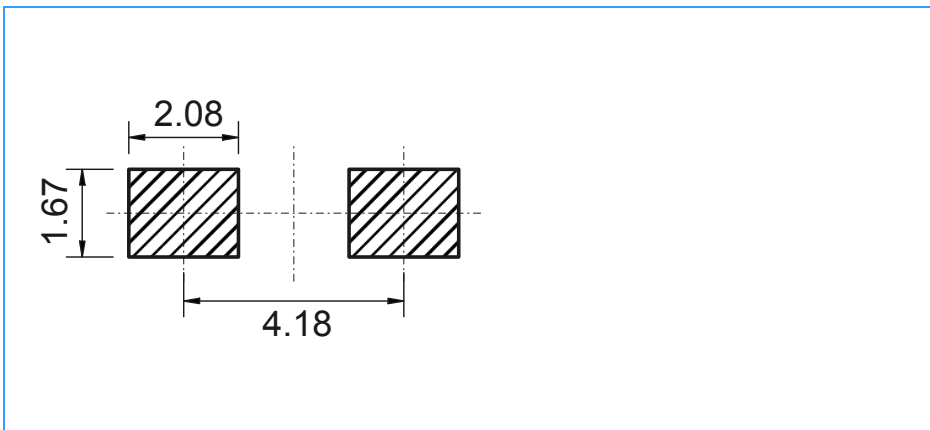
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### Package Outline Dimensions (Unit: mm)



### Mounting Pad Layout (Unit: mm)



### Ordering Information

Part Number	Package	Shipping Quantity
BZG05C- SERIES	SMA	5000 / Tape & Reel