

Zener Diodes

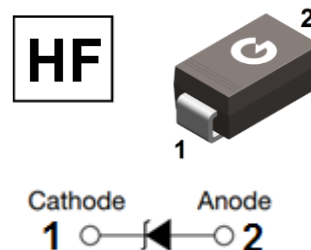
TBZG05C-SERIES

Features

- High reliability
- Voltage range 3.3 V to 100 V
- Fits onto 5 mm SMD footpads
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards

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°C unless otherwise specified)

Parameter	Test condition	Symbol	Value	Unit
Power dissipation	R _{thJA} < 30 K/W, T _{amb} = 60 °C P _{diss} 3 W R _{thJA} < 100 K/W, T _{amb} = 25 °C	P _{diss}	3	W
Non repetitive peak surge power dissipation	tp = 100 μs sq.pulse, T _j = 25 °C prior to surge	P _{diss}	1.25	W
Peak reverse power dissipation(non-repetitive) tp=100μs square wave		P _{ZSM}	60	W
Junction temperature		T _j	-55 ~ +150	°C
Storage temperature range		T _{STG}	-55 ~ +150	°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 (Al ₂ O ₃), Fig. 1b	R _{thJA}	100	K/W

Electrical Characteristics

Parameter	Test condition	Symbo	Min	Typ	Max	Unit
Forward voltage	I _F = 0.2 A	V _F			1.2	V

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Electrical Characteristics (@T_A = 25°C unless otherwise specified)

Type	Device marking code	Zener Voltage Range(Note 1)				Leakage Current	
		V _Z (V)			@I _{ZT}	I _R @ V _R	
		Min	typ	Max	mA	μA	V
TBZG05C3V3	ZG3.3	3.1	3.3	3.5	80	40	1.0
TBZG05C3V6	ZG3.6	3.4	3.6	3.8	60	20	1.0
TBZG05C3V9	ZG3.9	3.7	3.9	4.1	60	10	1.0
TBZG05C4V3	ZG4.3	4.0	4.3	4.6	50	3.0	1.0
TBZG05C4V7	ZG4.7	4.4	4.7	5	45	3.0	1.0
TBZG05C5V1	ZG5.1	4.8	5.1	5.4	45	1.0	1.5
TBZG05C5V6	ZG5.6	5.2	5.6	6.0	45	1.0	2.0
TBZG05C6V2	ZG6.2	5.8	6.2	6.6	35	1.0	3.0
TBZG05C6V8	ZG6.8	6.4	6.8	7.2	35	1.0	4.0
TBZG05C7V5	ZG7.5	7.0	7.5	7.9	35	0.5	4.5
TBZG05C8V2	ZG8.2	7.7	8.2	8.7	25	0.5	6.2
TBZG05C9V1	ZG9.1	8.5	9.1	9.6	25	0.5	6.8
TBZG05C10	ZG10	9.4	10	10.6	25	0.5	7.0
TBZG05C11	ZG11	10.4	11	11.6	20	0.5	8.2
TBZG05C12	ZG12	11.4	12	12.7	20	0.5	9.1
TBZG05C13	ZG13	12.4	13	14.1	20	0.5	10
TBZG05C15	ZG15	13.8	15	15.6	15	0.5	11
TBZG05C16	ZG16	15.3	16	17.1	15	0.5	12
TBZG05C18	ZG18	16.8	18	19.1	15	0.5	13
TBZG05C20	ZG20	18.8	20	21.2	10	0.5	15
TBZG05C22	ZG22	20.8	22	23.3	10	0.5	16
TBZG05C24	ZG24	22.8	24	25.6	10	0.5	18
TBZG05C27	ZG27	25.1	27	28.9	8.0	0.5	20
TBZG05C30	ZG30	28	30	32	8.0	0.5	22
TBZG05C33	ZG33	31	33	35	8.0	0.5	24
TBZG05C36	ZG36	34	36	38	8.0	0.5	27
TBZG05C39	ZG39	37	39	41	6.0	0.5	30
TBZG05C43	ZG43	40	43	46	6.0	0.5	33
TBZG05C47	ZG47	44	47	50	4.0	0.5	36
TBZG05C51	ZG51	48	51	54	4.0	0.5	39
TBZG05C56	ZG56	52	56	60	4.0	0.5	43
TBZG05C62	ZG62	58	62	66	4.0	0.5	47
TBZG05C68	ZG68	64	68	72	4.0	0.5	51
TBZG05C75	ZG75	70	75	79	4.0	0.5	56
TBZG05C82	ZG82	77	82	87	2.7	0.5	62
TBZG05C91	ZG91	85	91	96	2.7	0.5	68
TBZG05C100	ZG100	95	100	105	2.7	0.5	75

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

FIG.1 – TYPICAL FORWARD CHARACTERISTIC

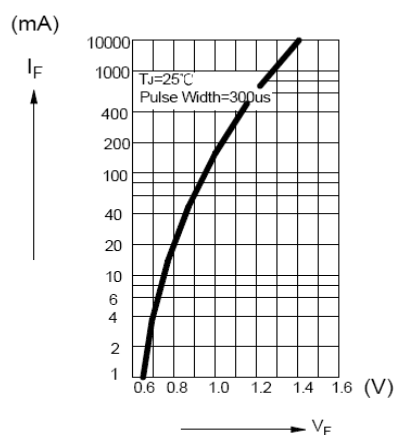
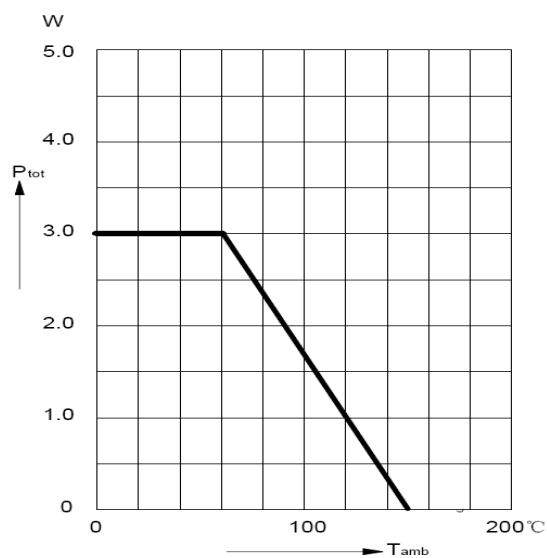


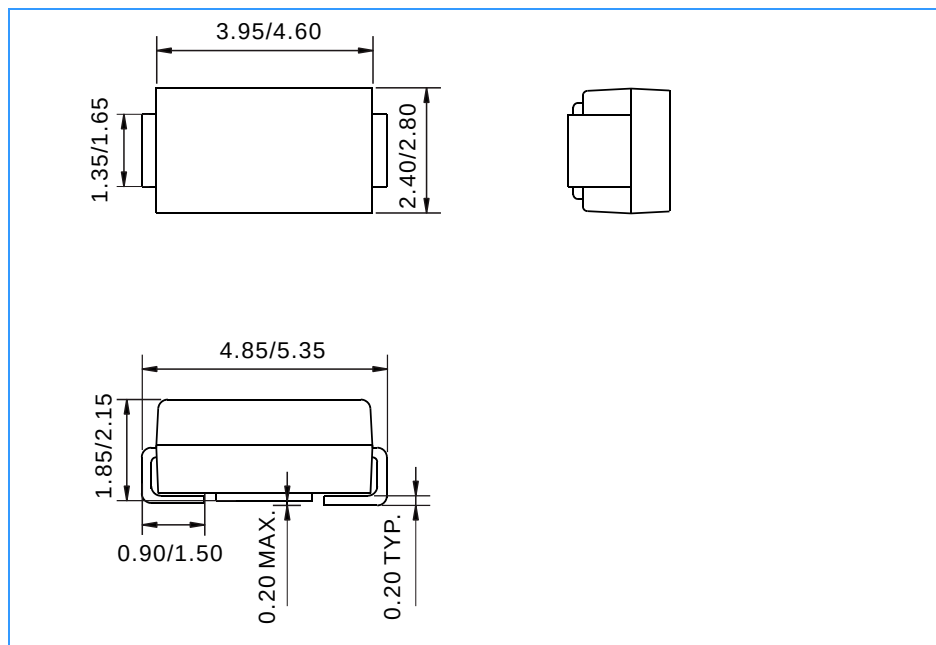
FIG.2 – ADMISSIBLE POWER DISSIPATION VERSUS AMBIENT TEMPERATURE



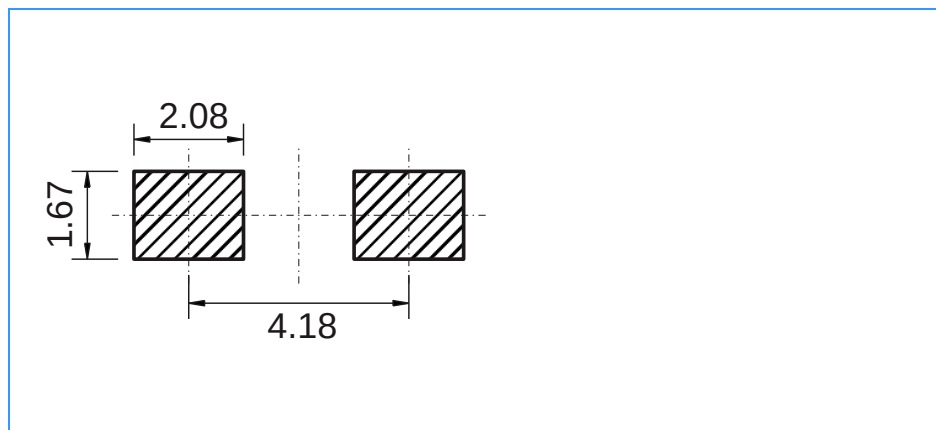
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Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)



Ordering Information

Part Number	Package	Shipping Quantity
TBZG05C- SERIES	SMA	5000 pcs / Tape & Reel