

# Transient Voltage Suppressor

# BZG04--SERIES

## Features

- Plastic package has underwriters laboratory
- flammability classification 94V-0
- Optimized for LAN protection applications
- Low profile package with built-in strain relief for
- surface mounted applications
- Glass passivated junction
- Low incremental surge resistance, excellent clamping capability
- 300W peak pulse power capability with a 10/1000 $\mu$ s wave form,
- repetition rate (duty cycle): 0.01%
- Very fast response time
- High temperature soldering guaranteed: 250°C/10 seconds at terminals



## Mechanical Data

- Case: SMA molded plastic
- Molding compound, UL flammability classification rating 94V-0
- Polarity: Color band denotes cathode end

## Devices for Bidirectional Applications

- For bi-directional devices, use suffix C (e.g. BZG04-10C). Electrical characteristics apply in both directions.

## Maximum Ratings (@T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Value	Units
Non-repetitive peak reverse power dissipation 10/1000s exponential pulse(see Fig.3); T <sub>J</sub> =25°C prior to surge; see also Fig.1	P <sub>RSM</sub>	300	W
Typical thermal resistance, junction to ambient	R <sub>θJA</sub>	100(NOTE1) 150(NOTE2)	°C/W
Forward voltage @I <sub>F</sub> =0.5A; see Fig.2	V <sub>F</sub>	1.2	V
Operating junction temperature range	R <sub>θJL</sub>	-55---+175	°C
Operating storage temperature range	T <sub>J</sub>	-55---+175	°C

### NOTES:

1. Device mounted on an Al<sub>2</sub>O<sub>3</sub> printed-circuit board, 0.7mm thick; thickness of Cu-layer ≥35 $\mu$ m, see Fig.4.
2. Device mounted on an epoxy-glass printed-circuit board, 1.5mm thick; thickness of Cu-layer ≥40  $\mu$ m

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

Part number	Marking code	Breakdown Voltage V <sub>BR</sub> @I <sub>T</sub>	Test Current	Max. Clamping Voltage @I <sub>PP</sub>	Max. Peak Pulse Current	Max. Reverse Leakage @ V <sub>RWM</sub>	Reverse Standoff Voltage
		V	I <sub>T</sub>	V <sub>C</sub>	I <sub>PP</sub>	I <sub>R</sub>	V <sub>RWM</sub>
		MIN	m A	V	A	u A	V
BZG04-8V2	D8V2	9.4	50	14.8	20.3	20	8.2
BZG04-9V1	D9V1	10.4	50	15.7	19.1	5.0	9.1
BZG04-10	D10	11.4	50	17.0	17.7	5.0	10
BZG04-11	D11	12.4	50	18.9	15.9	5.0	11
BZG04-12	D12	13.8	50	20.9	14.4	5.0	12
BZG04-13	D13	15.3	25	22.9	13.1	5.0	13
BZG04-15	D15	16.8	25	25.6	11.7	5.0	15
BZG04-16	D16	18.8	25	28.4	10.6	5.0	16
BZG04-18	D18	20.8	25	31.0	9.7	5.0	18
BZG04-20	D20	22.8	25	33.8	8.9	5.0	20
BZG04-22	D22	25.1	25	38.1	7.9	5.0	22
BZG04-24	D24	28	25	42.2	7.1	5.0	24
BZG04-27	D27	31	25	46.2	6.5	5.0	27
BZG04-30	D30	34	10	50.1	6.0	5.0	30
BZG04-33	D33	37	10	54.1	5.5	5.0	33
BZG04-36	D36	40	10	60.7	4.9	5.0	36
BZG04-39	D39	44	10	65.5	4.6	5.0	39
BZG04-43	D43	48	10	70.8	4.2	5.0	43
BZG04-47	D47	52	10	78.6	3.8	5.0	47
BZG04-51	D51	58	10	86.5	3.5	5.0	51
BZG04-56	D56	64	10	94.4	3.2	5.0	56
BZG04-62	D62	70	10	103.5	2.9	5.0	62
BZG04-68	D68	77	10	114	2.6	5.0	68
BZG04-75	D75	85	5.0	126	2.4	5.0	75
BZG04-82	D82	94	5.0	139	2.2	5.0	82
BZG04-91	D91	104	5.0	152	2.0	5.0	91
BZG04-100	D100	114	5.0	167	1.8	5.0	100
BZG04-110	D110	124	5.0	185	1.6	5.0	110
BZG04-120	D120	138	5.0	204	1.5	5.0	120
BZG04-130	D130	153	5.0	224	1.3	5.0	130
BZG04-150	D150	168	5.0	249	1.2	5.0	150
BZG04-160	D160	188	5.0	276	1.1	5.0	160
BZG04-180	D180	208	2.0	305	1.0	5.0	180
BZG04-200	D200	228	2.0	336	0.9	5.0	200
BZG04-220	D220	251	2.0	380	0.8	5.0	220

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

Fig.1 Maximum non-repetitive peak reverse power dissipation as a function of pulse duration (square pulse).

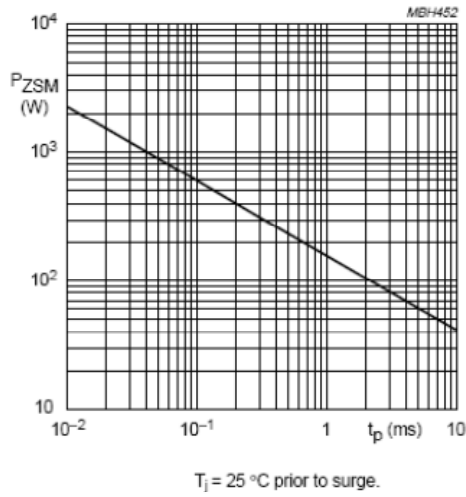


Fig.2 Forward current as a function of forward voltage; typical values.

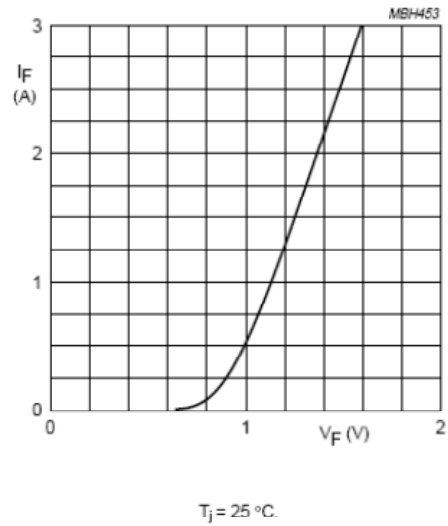
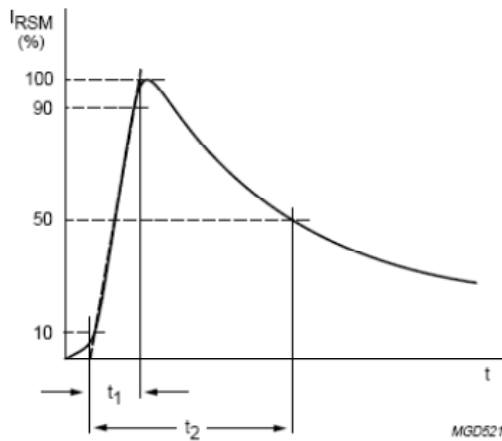


Fig.3 Non-repetitive peak reverse current pulse definition.

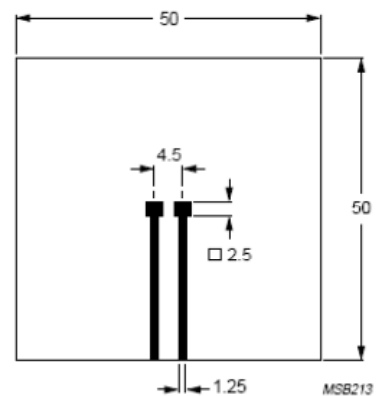


In accordance with "IEC 60-1, Section 8".

$t_1 = 10 \mu\text{s}$ .

$t_2 = 1000 \mu\text{s}$ .

Fig.4 Printed-circuit board for surface mounting.

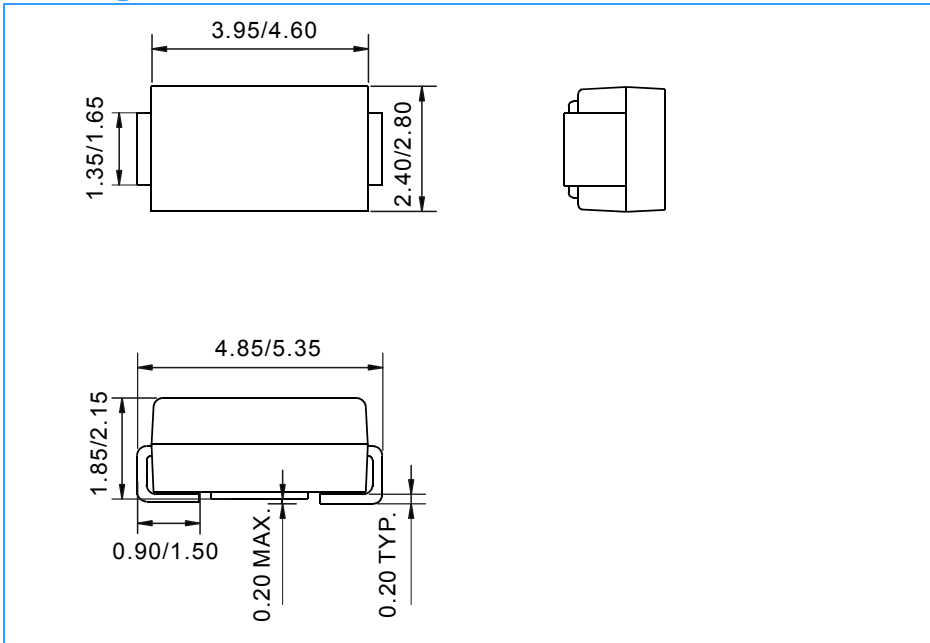


Dimensions in mm.

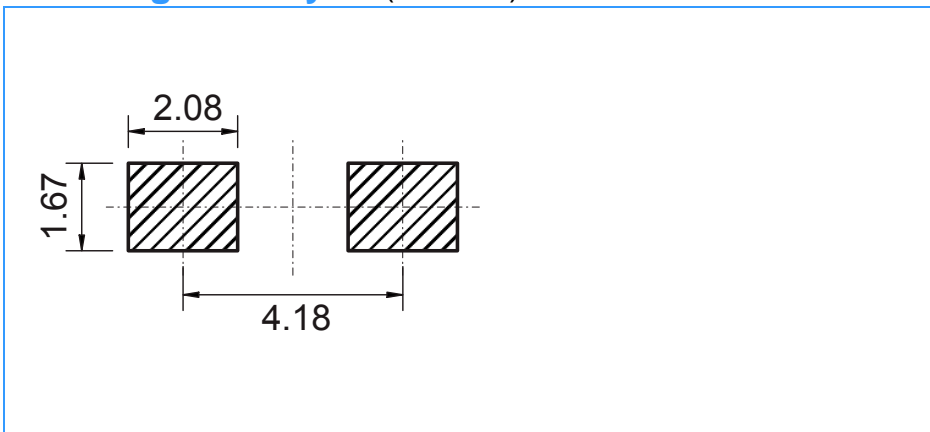
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## Package Outline Dimensions(unit:mm)



## Mounting Pad Layout(unit:mm)



## Ordering Information

Part No.	Package	Shipping
BZG04-SERIES	SMA	5000 /Tape&Reel