

# BZW04 SERIES

## GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR VOLTAGE - 6.8 to 440 Volts 400 Watts Peak 1.0 Watt Steady State

BZW04 PART NUMBER		REVERSE STAND- OFF VOLTAGE $V_{RWM}(V)$	BREAKDOWN VOLTAGE $V_{BR}(V)$ MIN.@ $I_T$	BREAKDOWN VOLTAGE $V_{BR}(V)$ MAX.@ $I_T$	TEST CURRENT $I_T$ (mA)	MAXIMUM CLAMPING VOLTAGE @ $I_{pp}$ $V_c(V)$	PEAK PULSE CURRENT $I_{pp}$ (A)	REVERSE LEAKAGE @ $V_{RWM}$ $I_R(\mu A)$
UNI- POLAR	BI-POLAR							
BZW 04P5V8	BZW 04P5V8B	5.80	6.45	7.48	10.0	10.5	38.00	900
BZW 04-5V8	BZW 04-5V8B	5.90	6.45	7.14	10.0	10.5	38.00	900
BZW 04P6V4	BZW 04P6V4B	6.40	7.13	8.25	10.0	11.3	35.00	500
BZW 04-6V4	BZW 04-6V4B	6.40	7.13	7.88	10.0	11.3	35.00	500
BZW 04P7V0	BZW 04P7V0B	7.02	7.79	9.02	1.0	12.1	33.00	200
BZW 04-7V0	BZW 04-7V0B	7.02	7.79	8.61	1.0	12.1	33.00	200
BZW 04P7V8	BZW 04P7V8B	7.78	8.65	10.00	1.0	13.4	30.00	50
BZW 04-7V8	BZW 04-7V8B	7.78	8.65	9.55	1.0	13.4	30.00	50
BZW 04P8V5	BZW 04P8V5B	8.55	9.50	11.00	1.0	14.5	28.00	10.0
BZW04-8V5	BZW04-8V5B	8.55	9.50	10.50	1.0	14.5	28.00	10.0
BZW 04P9V4	BZW 04P9V4B	9.40	10.50	12.10	1.0	15.6	25.70	5.0
BZW 04-9V4	BZW 04-9V4B	9.40	10.50	11.60	1.0	15.6	25.70	5.0
BZW 04P10	BZW 04P10B	10.86	11.40	13.20	1.0	16.7	24.00	5.0
BZW 04-10	BZW 04-10B	10.86	11.40	12.60	1.0	16.7	24.00	5.0
BZW 04P11	BZW 04P11B	11.82	12.40	14.30	1.0	18.2	22.00	5.0
BZW 04-11	BZW 04-11B	11.82	12.40	13.70	1.0	18.2	22.00	5.0
BZW 04P13	BZW 04P13B	13.63	14.30	16.50	1.0	21.2	19.00	5.0
BZW 04-13	BZW 04-13B	13.63	14.30	15.80	1.0	21.2	19.00	5.0
BZW 04P14	BZW 04P14B	14.48	15.20	17.60	1.0	22.5	17.80	5.0
BZW 04-14	BZW 04-14B	14.48	15.20	16.80	1.0	22.5	17.80	5.0
BZW 04P15	BZW 04P15B	16.29	17.10	19.80	1.0	25.2	16.00	5.0
BZW 04-15	BZW 04-15B	16.29	17.10	18.90	1.0	25.2	16.00	5.0
BZW 04P17	BZW 04P17B	18.10	19.00	22.00	1.0	27.7	14.50	5.0
BZW 04-17	BZW 04-17B	18.10	19.00	21.00	1.0	27.7	14.50	5.0
BZW 04P19	BZW 04P19B	19.91	20.90	24.20	1.0	30.6	13.00	5.0
BZW 04-19	BZW 04-19B	19.91	20.90	23.10	1.0	30.6	13.00	5.0
BZW 04P20	BZW 04P20B	21.72	22.80	26.40	1.0	33.2	12.00	5.0
BZW 04-20	BZW 04-20B	21.72	22.80	25.20	1.0	33.2	12.00	5.0
BZW 04P23	BZW 04P23B	24.49	25.70	29.70	1.0	37.5	10.70	5.0
BZW 04-23	BZW 04-23B	24.49	25.70	28.40	1.0	37.5	10.70	5.0
BZW 04P26	BZW 04P26B	27.16	28.50	33.00	1.0	41.5	9.60	5.0
BZW 04-26	BZW 04-26B	27.16	28.50	31.50	1.0	41.5	9.60	5.0
BZW 04 P28	BZW 04P28B	29.92	31.40	36.30	1.0	45.7	8.80	5.0
BZW 04-28	BZW 04-28B	29.92	31.40	34.70	1.0	45.7	8.80	5.0
BZW 04P31	BZW 04P31B	32.59	34.20	39.60	1.0	49.9	8.00	5.0
BZW 04-31	BZW 04-31B	32.59	34.20	37.80	1.0	49.9	8.00	5.0
BZW 04P33	BZW 04P33B	33.35	37.10	42.90	1.0	53.9	7.40	5.0
BZW 04-33	BZW 04-33B	33.35	37.10	41.00	1.0	53.9	7.40	5.0
BZW 04P37	BZW 04P37B	38.97	40.90	47.30	1.0	59.3	6.70	5.0
BZW 04-37	BZW 04-37B	38.97	40.90	45.20	1.0	59.3	6.70	5.0
BZW 04P40	BZW 04P40B	42.59	44.70	51.70	1.0	64.8	6.20	5.0
BZW 04-40	BZW 04-40B	42.59	44.70	49.40	1.0	64.8	6.20	5.0
BZW 04P44	BZW 04P44B	46.21	48.50	56.10	1.0	70.1	5.70	5.0
BZW 04-44	BZW 04-44B	46.21	48.50	53.60	1.0	70.1	5.70	5.0

For bidirectional type having  $V_{RWM}$  of 10 volts and less, the  $I_R$  limit is double.

For Part No. which use the character "p" , the  $V_{BR}$  is  $\pm 10\%$

## BZW04 SERIES

### GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR

VOLTAGE - 6.8 to 440 Volts

400 Watts Peak 1.0 Watt Steady Stae

BZW04 PART NUMBER		REVERSE STAND- OFF VOLTAGE V <sub>RWM</sub> (V)	BREAKDOWN VOLTAGE V <sub>BR</sub> (V) MIN.@I <sub>T</sub>	BREAKDOWN VOLTAGE V <sub>BR</sub> (V) MAX.@I <sub>T</sub>	TEST CURRENT I <sub>T</sub> (mA)	MAXIMUM CLAMPING VOLTAGE @I <sub>pp</sub> V <sub>c</sub> (V)	PEAK PULSE CURRENT I <sub>pp</sub> (A)	REVERSE LEAKAGE @ V <sub>RWM</sub> I <sub>R</sub> (μA)
BZW 04P48	BZW 04P48B	50.69	53.20	61.60	1.0	77.0	5.20	5.0
BZW 04-48	BZW 04-48B	50.69	53.20	58.80	1.0	77.0	5.20	5.0
BZW 04P53	BZW 04P53B	56.12	58.90	68.20	1.0	85.0	4.70	5.0
BZW 04-53	BZW 04-53B	56.12	58.90	65.10	1.0	85.0	4.70	5.0
BZW 04P58	BZW 04P58B	61.55	64.60	74.80	1.0	92.0	4.30	5.0
BZW 04-58	BZW 04-58B	61.55	64.60	71.40	1.0	92.0	4.30	5.0
BZW 04P64	BZW 04P64B	67.94	71.30	82.50	1.0	103.0	3.90	5.0
BZW 04-64	BZW 04-64B	67.94	71.30	78.80	1.0	103.0	3.90	5.0
BZW 04P70	BZW 04P70B	74.23	77.90	90.20	1.0	113.0	3.50	5.0
BZW 04-70	BZW 04-70B	74.23	77.90	86.10	1.0	113.0	3.50	5.0
BZW 04P78	BZW 04P78B	82.42	86.50	100.00	1.0	125.0	3.20	5.0
BZW 04-78	BZW 04-78B	82.42	86.50	95.50	1.0	125.0	3.20	5.0
BZW 04P85	BZW 04P85B	90.52	95.00	110.00	1.0	137.0	2.90	5.0
BZW 04-85	BZW 04-85B	90.52	95.00	105.00	1.0	137.0	2.90	5.0
BZW 04P94	BZW 04P94B	100.00	105.00	121.00	1.0	152.0	2.60	5.0
BZW 04-94	BZW 04-94B	100.00	105.00	116.00	1.0	152.0	2.60	5.0
BZW 04P102	BZW 04P102B	108.70	114.00	132.00	1.0	165.0	2.40	5.0
BZW 04-102	BZW 04-102B	108.70	114.00	126.00	1.0	165.0	2.40	5.0
BZW 04P110	BZW 04P110B	118.20	124.00	143.00	1.0	179.0	2.20	5.0
BZW 04-110	BZW 04-110B	118.20	124.00	137.00	1.0	179.0	2.20	5.0
BZW 04P128	BZW 04P128B	136.30	143.00	165.00	1.0	207.0	2.00	5.0
BZW 04-128	BZW 04-128B	136.30	143.00	158.00	1.0	207.0	2.00	5.0
BZW 04P136	BZW 04P136B	144.80	152.00	176.00	1.0	219.0	1.80	5.0
BZW 04-136	BZW 04-136B	144.80	152.00	168.00	1.0	219.0	1.80	5.0
BZW 04P145	BZW 04P145B	153.40	161.00	187.00	1.0	234.0	1.70	5.0
BZW 04-145	BZW 04-145B	153.40	161.00	179.00	1.0	234.0	1.70	5.0
BZW 04P154	BZW 04P154B	162.90	171.00	198.00	1.0	246.0	1.60	5.0
BZW 04-154	BZW 04-154B	162.90	171.00	189.00	1.0	246.0	1.60	5.0
BZW 04P171	BZW 04P171B	181.00	190.00	220.00	1.0	274.0	1.50	5.0
BZW 04-171	BZW 04-171B	181.00	190.00	210.00	1.0	274.0	1.50	5.0
BZW 04P188	BZW 04P188B	199.20	209.00	242.00	1.0	301.0	1.40	5.0
BZW 04-188	BZW 04-188B	199.20	209.00	231.00	1.0	301.0	1.40	5.0
BZW 04P213	BZW 04P213B	225.80	237.00	275.00	1.0	344.0	1.50	5.0
BZW 04-213	BZW 04-213B	225.80	237.00	263.00	1.0	344.0	1.50	5.0
BZW 04P239	BZW 04P239B	253.50	266.00	308.00	1.0	384.0	1.50	5.0
BZW 04-239	BZW 04-239B	253.50	266.00	294.00	1.0	384.0	1.50	5.0
BZW 04P256	BZW 04P256B	271.60	285.00	330.00	1.0	414.0	1.20	5.0
BZW 04-256	BZW 04-256B	271.60	285.00	315.00	1.0	414.0	1.20	5.0
BZW 04P273	BZW 04P273B	289.70	304.00	352.00	1.0	438.0	1.20	5.0
BZW 04-273	BZW 04-273B	289.70	304.00	336.00	1.0	438.0	1.20	5.0
BZW 04P299	BZW 04P299B	316.30	332.00	385.00	1.0	482.0	0.90	5.0
BZW 04-299	BZW 04-299B	316.30	332.00	368.00	1.0	482.0	0.90	5.0
BZW 04P342	BZW 04P342B	362.10	380.00	440.00	1.0	548.0	0.90	5.0
BZW 04-342	BZW 04-342B	362.10	380.00	420.00	1.0	548.0	0.90	5.0
BZW 04P376	BZW 04P376B	398.30	418.00	484.00	1.0	603.0	0.80	5.0
BZW 04-376	BZW 04-376B	398.30	418.00	462.00	1.0	603.0	0.80	5.0

For bidirectional type having Vrwm of 10 volts and less, the IR limit is double.

For Part No. which use the character "p" , the V<sub>BR</sub> is ± 10%

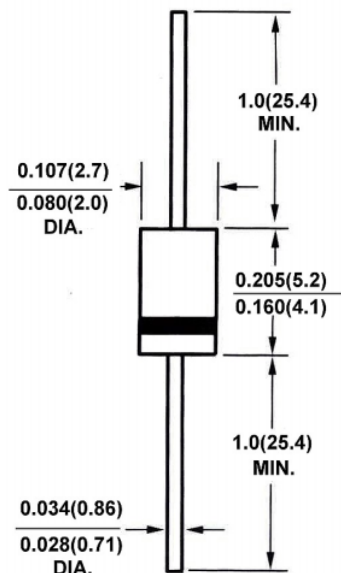
## BZW04 SERIES

### GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR VOLTAGE-6.8 to 440 Volts 400 watt Peak Power / 1.0 Watt Steady State

**DO-204AL (DO-41 Plastic)**

#### FEATURES

- Plastic package
- Glass passivated chip junction in DO-41 Package
- 400W surge capability at 10/1000  $\mu$ s wave from
- Excellent clamping capability
- Low zener impedance
- Fast response time: typically less than 1.0ps from 0 Volts to BV min.
- Typical IR less than 1mA above 10V
- High temperature soldering guaranteed: 300°C/10 seconds/.375", (9.5mm) lead length, 5lbs., (2.3kg) tension



#### MECHANICAL DATA

**Case:** JEDEC DO-41 Molded Plastic

**Terminal:** Axial leads, solderables per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode except Bipolar

**Mounting Position:** Any

**Weight:** 0.012 ounce, 0.3 grams

Dimensions in inches and (millimeters)

#### DEVICES FOR BIPOLAR APPLICATION

For Bidirectional use B Suffix for types BZW 04-5V8 thru types BZW 04-376 (e.g. BZW 04-5V8B , BZW 04-376B)

Electrical characteristics apply in both directions

#### MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25 ambient temperature unless otherwise specified.

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation at $T_A = 25$ , $T_p = 1$ ms (Note 1)	$P_{PPM}$	Minimum 400	Watts
Steady State Power Dissipation at $T_L = 75$ , Lead lengths .375", (9.5mm) (Note 2)	$P_{M(AV)}$	1	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load, (JEDEC Method) (Note 3)	$I_{FSM}$	40	Amps
Operating junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to + 175	

Notes :

1. Non-repetitive current pulse , per Fig. 3 and derated above  $T_A = 25$  per Fig. 2 .

2. Mounted on Copper Pad area of 1.6×1.6" (40×40mm) per Fig. 5.

3. 8.3ms single half sine-wave , or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

# BZW04 SERIES

## RATINGS AND CHARACTERISTIC CURVES

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

