

# EDAL INDUSTRIES, INC.

51 COMMERCE STREET\* EAST HAVEN, CONNECTICUT 06512\* TELEPHONE (203)-467-2591\* FAX (203)-469-5928

## BZW04-5V8 - BZW04-376 TRANSIENT VOLTAGE SUPPRESSOR

VBR: 6.8-440 V  
400 Watt Peak Power  
1.0 Watt Steady State

### FEATURES:

- \* 400W surge capability at 1 ms
- \* Excellent clamping capability
- \* Low zener impedance
- \* Fast response time: typically less than 1.0 ps. from 0 volts to BV min.
- \* Typical Ir less than 1 uA above 10V

### MECHANICAL DATA

- \* Case: Molded Plastic
- \* Epoxy: UL94V-O rate flame retardant
- \* Lead: Axial lead solderable per MIL-STD-202, method 208 guaranteed
- \* Polarity: Color band denotes cathode end except Bipolar
- \* Mounting position: Any
- \* Weight: 0.34 grams

### DEVICES FOR BIPOLAR APPLICATIONS

For Bi-directional use B Suffix  
Electrical characteristics apply in both directions

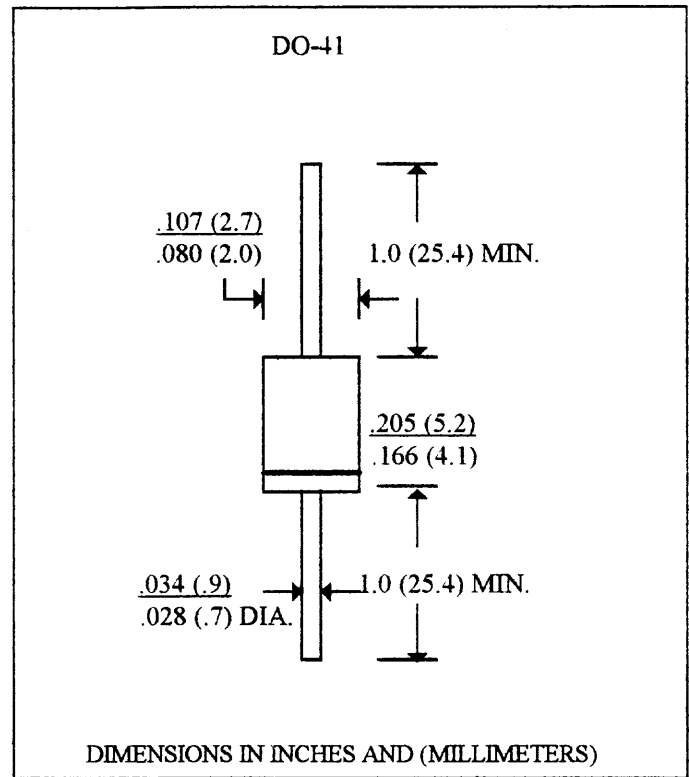
### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified.

RATING	SYMBOL	VALUE	UNITS
Peak Power Dissipation at TA=25°C, TP=1ms (Note 1)	Ppk	Minimum 400	Watts
Steady State Power Dissipation at TL=75°C Lead Lengths .375", (9.5 mm) (Note 2)	PD	1.0	Watts
Peak Forward Surge Current, 8.3 ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) (Note 3)	IFSM	40.0	Amps
Operating and Storage Temperature Range	Tj, Tstg	-65 to +175	°C

Notes:

1. Non-repetitive current pulse, per Fig. 3 and derated above TA=25°C per Fig. 2.
2. Mounted on Copper Leaf area of 1.57 in (40 mm).
3. 8.3 ms single half sine-wave, duty cycle=4 pulses per Minutes maximum.



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ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

TYPE	BREAKDOWN VOLTAGE			WORKING PEAK REVERSE VOLTAGE VRWM (V)	MAXIMUM REVERSE LEAKAGE @ VRWM IR (uA)	MAXIMUM REVERSE CURRENT IRSM (A)	MAXIMUM CLAMPING VOLT @ IRSM (V)	MAXIMUM TEMP CO-EFFICIENT OF VBR (%°C)
	VBR (V)	(D)	@ It (MA)					
Unidirectional	MIN	MAX						
BZW04 P5V8	6.45	7.48	10	5.8	1000	38	10.5	.057
BZW04-5V8	6.45	7.14	10	5.8	1000	38	10.5	.057
BZW04 P6V4	7.13	8.25	10	6.4	500	35.4	11.3	.061
BZW04-6V4	7.13	7.88	10	6.4	500	35.4	11.3	.061
BZW04 P7V0	7.79	9.02	10	7.02	200	33	12.1	.065
BZW04-7V0	7.79	8.61	10	7.02	200	33	12.1	.065
BZW04 P7V8	8.65	10.0	1	7.8	50	30	13.4	.068
BZW04-7V8	8.65	9.55	1	7.8	50	30	13.4	.073
BZW04 P8V5	9.50	11.0	1	8.55	10	27.6	14.5	.073
BZW04-8V5	9.50	10.5	1	8.55	10	27.6	14.5	.075
BZW04 P9V4	10.5	12.1	1	9.4	5	25.7	15.6	.075
BZW04 P10	11.4	13.2	1	10.2	5	24	16.7	.078
BZW04-10	11.4	12.6	1	10.2	5	24	16.7	.078
BZW04 P11	12.4	14.3	1	11.1	5	22	18.2	.081
BZW04-11	12.4	13.7	1	11.1	5	22	18.2	.081
BZW04 P13	14.3	16.5	1	12.8	5	19	21.2	.084
BZW04-13	14.3	15.8	1	12.8	5	19	21.2	.084
BZW04 P14	15.2	17.6	1	13.6	5	17.8	22.5	.086
BZW04-14	15.2	16.8	1	13.6	5	17.8	22.5	.086
BZW04 P15	17.1	19.8	1	15.3	5	16	25.2	.088
BZW04-15	17.1	18.9	1	15.3	5	16	25.2	.088
BZW04 P17	19.0	22.0	1	17.1	5	14.5	27.7	.090
BZW04-17	19.0	21.0	1	17.1	5	14.5	27.7	.090
BZW04 P19	20.9	24.2	1	18.8	5	13.0	30.6	.092
BZW04-19	20.9	23.1	1	18.8	5	13.0	30.6	.092
BZW04 P20	22.8	26.4	1	20.5	5	12.0	33.2	.094
BZW04-20	22.8	25.2	1	20.5	5	12.0	33.2	.094
BZW04 P23	25.7	29.7	1	23.1	5	10.7	37.5	.096
BZW04-23	25.7	28.4	1	23.1	5	10.7	37.5	.096
BZW04 P26	28.5	33.0	1	25.6	5	9.6	41.5	.097
BZW04-26	28.5	31.5	1	25.6	5	9.6	41.5	.097
BZW04 P28	31.4	36.3	1	28.2	5	8.8	45.7	.098
BZW04-28	31.4	34.7	1	28.2	5	8.8	45.7	.098
BZW04 P31	34.2	39.6	1	30.8	5	8.0	49.9	.099
BZW04-31	34.2	37.8	1	30.8	5	8.0	49.9	.099
BZW04 P33	37.1	42.9	1	33.3	5	7.4	53.9	.100
BZW04-33	37.1	41.0	1	33.3	5	7.4	53.9	.100
BZW04 P37	40.9	47.3	1	36.8	5	6.7	59.3	.101
BZW04-37	40.9	45.2	1	36.8	5	6.7	59.3	.101
BZW04 P40	44.7	51.7	1	40.2	5	6.2	64.8	.101
BZW04-40	44.7	49.4	1	40.2	5	6.2	64.8	.101
BZW04 P44	48.5	56.1	1	43.6	5	5.7	70.1	.102
BZW04-44	48.5	53.6	1	43.6	5	5.7	70.1	.102
BZW04 P48	53.2	61.6	1	47.8	5	5.2	77.0	.103
BZW04-48	53.2	58.8	1	47.8	5	5.2	77.0	.103
BZW04 P53	58.9	68.2	1	53.0	5	4.7	85.0	.104
BZW04-53	58.9	65.1	1	53.0	5	4.7	85.0	.104
BZW04 P58	64.6	74.8	1	58.1	5	4.3	92.0	.104
BZW04-58	64.6	71.4	1	58.1	5	4.3	92.0	.104
BZW04 P64	71.3	82.5	1	64.1	5	3.9	103.0	.105
BZW04-64	71.3	78.8	1	64.1	5	3.9	103.0	.105

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	VBR (V)	(I)	@ It (MA)					
Unidirectional	MIN	MAX						
BZW04 P70	77.9	90.2	1	70.1	5	3.5	113.0	.105
BZW04-70	77.9	86.1	1	70.1	5	3.5	113.0	.105
BZW04 P78	86.5	100	1	77.8	5	3.2	125.0	.106
BZW04-78	86.5	95.5	1	77.8	5	3.2	125.0	.106
BZW04 P85	95.0	110	1	85.5	5	2.9	137.0	.106
BZW04-85	95.0	105	1	85.5	5	2.9	137.0	.106
BZW04 P94	105	121	1	94.0	5	2.6	152.0	.107
BZW04-94	105	116	1	94.0	5	2.6	152.0	.107
BZW04 P102	114	132	1	102.0	5	2.4	165.0	.107
BZW04-102	114	126	1	102.0	5	2.4	165.0	.107
BZW04 P111	124	143	1	111.0	5	2.2	179.0	.107
BZW04-111	124	137	1	111.0	5	2.2	179.0	.107
BZW04 P128	143	165	1	128.0	5	2.0	207.0	.108
BZW04-128	143	158	1	128.0	5	2.0	207.0	.108
BZW04 P136	152	176	1	136.0	5	1.8	219.0	.108
BZW04-136	152	168	1	136.0	5	1.8	219.0	.108
BZW04 P145	161	187	1	145.0	5	1.7	234.0	.108
BZW04-145	161	179	1	145.0	5	1.7	234.0	.108
BZW04 P154	171	198	1	154.0	5	1.6	246.0	.108
BZW04-154	171	189	1	154.0	5	1.6	246.0	.108
BZW04- P171	190	220	1	171.0	5	1.5	274.0	.108
BZW04-171	190	210	1	171.0	5	1.5	274.0	.108
BZW04 P188	209	242	1	188.0	5	1.4	301.0	.108
BZW04-188	209	231	1	188.0	5	1.4	301.0	.108
BZW04 P213	237	275	1	213.0	5	1.3	344.0	.110
BZW04-213	237	263	1	213.0	5	1.3	344.0	.110
BZW04 P239	266	308	1	239.0	5	1.3	384.0	.110
BZW04-239	266	294	1	239.0	5	1.3	384.0	.110
BZW04 P256	285	330	1	256.0	5	1.2	414.0	.110
BZW04-256	285	315	1	256.0	5	1.2	414.0	.110
BZW04 P273	304	352	1	273.0	5	1.2	438.0	.110
BZW04-273	304	336	1	273.0	5	1.2	438.0	.110
BZW04 P299	332	385	1	299.0	5	0.9	482.0	.110
BZW04-299	332	368	1	299.0	5	0.9	482.0	.110
BZW04 P342	380	440	1	342.0	5	0.9	548.0	.110
BZW04-342	380	420	1	342.0	5	0.9	548.0	.110
BZW04 P376	418	484	1	376.0	5	0.8	603.0	.110
BZW04-376	418	484	1	376.0	5	0.8	603.0	.110

**NOTES:**

1. VBR measured after IT applied for 300 uS, IT=Square Wave Pulse or equivalent.
2. Surge Current Waveform per Figure 3 and Derated per Figure 2.
3. VF=3.5 V at IF=25 A (BZW04-5V8 thru BZW04-94).  
 VF=5.0 V at IF=25 A (BZW04P102 thru BZW04-376) on 1/2 Square of Equivalent Sine Wave.  
 PW=8.3 ms, Duty Cycle=4 Pulses per Minute Maximum.

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