



Certificate Number: Q10561



Certificate Number: E17276

BZW04 SERIES

V_{BR} : 6.8 - 440 Volts

P_{PK} : 400 Watts

FEATURES :

- * 400W surge capability at 1ms
- * Excellent clamping capability
- * Low zener impedance
- * Fast response time : typically less than 1.0 ps from 0 volt to V_{BR(min)}
- * Typical I_R less than 1μA above 10V

MECHANICAL DATA

- * Case : DO-41 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 : 0.339 gram

DEVICES FOR BIPOLAR APPLICATIONS

For bi-directional use B Suffix.

Electrical characteristics apply in both directions

MAXIMUM RATINGS

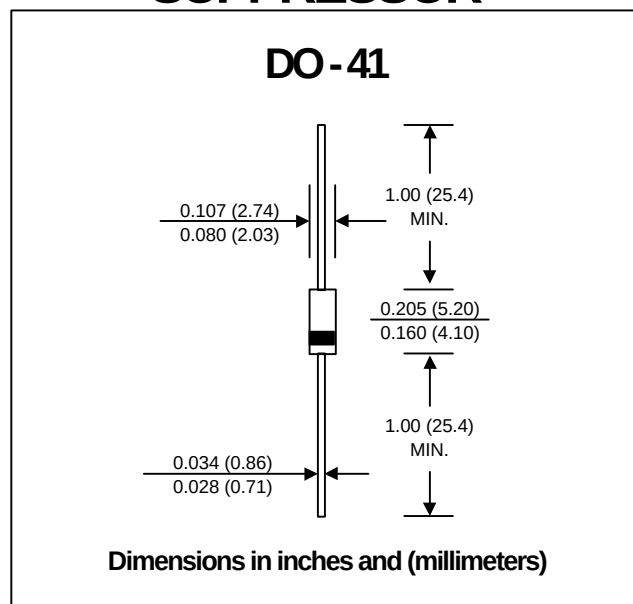
Rating at 25 °C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Unit
Peak Power Dissipation at Ta = 25 °C, Tp=1ms (Note1)	P _{PK}	Minimum 400	Watts
Steady State Power Dissipation at TL = 75 °C Lead Lengths 0.375", (9.5mm) (Note 2)	P _D	1.0	Watt
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) (Note 3)	I _{FSM}	40	Amps.
Operating and Storage Temperature Range	T _J , T _{STG}	- 65 to + 175	°C

Note :

- (1) Non-repetitive Current pulse, per Fig. 5 and derated above Ta = 25 °C per Fig. 1
- (2) Mounted on Copper Leaf area of 1.57 in² (40mm²).
- (3) 8.3 ms single half sine-wave, duty cycle = 4 pulses per minutes maximum.

TRANSIENT VOLTAGE SUPPRESSOR



UPDATE : MAY 18, 1998



Certificate Number: Q10561

Certificate Number: E17276

ELECTRICAL CHARACTERISTICS

Rating at = 25 °C ambient temperature unless otherwise specified

TYPE	Breakdown Voltage @ It (Note 1)			Working Peak Reverse Voltage	Maximum Reverse Leakage @ VRWM	Maximum Reverse Current	Maximum Clamping Voltage @ IRSM	Maximum Temperature Co-efficient of VBR
	VBR (V)		It	VRWM	IR	IRSM	VRSM	of VBR of VBR
	Min.	Max.	(mA)	(V)	(μA)	(A)	(V)	
BZW04P5V8	6.45	7.48	10	5.80	1000	38.0	10.5	0.057
BZW04-5V8	6.45	7.14	10	5.80	1000	38.0	10.5	0.057
BZW04P6V4	7.13	8.25	10	6.40	500	35.4	11.3	0.061
BZW04-6V4	7.13	7.88	10	6.40	500	35.4	11.3	0.061
BZW04P7V0	7.79	9.02	10	7.02	200	33.0	12.1	0.065
BZW04-7V0	7.79	8.61	10	7.02	200	33.0	12.1	0.065
BZW04P7V8	8.65	10.0	1.0	7.78	50	30.0	13.4	0.068
BZW04-7V8	8.65	9.55	1.0	7.78	50	30.0	13.4	0.068
BZW04P8V5	9.50	11.0	1.0	8.55	10	27.6	14.5	0.073
BZW04-8V5	9.50	10.5	1.0	8.55	10	27.6	14.5	0.073
BZW04P9V4	10.5	12.1	1.0	9.40	5.0	25.7	15.6	0.075
BZW04-9V4	10.5	11.6	1.0	9.40	5.0	25.7	15.6	0.075
BZW04P10	11.4	13.2	1.0	10.2	5.0	24.0	16.7	0.078
BZW04-10	11.4	12.6	1.0	10.2	5.0	24.0	16.7	0.078
BZW04P11	12.4	14.3	1.0	11.1	5.0	22.0	18.2	0.081
BZW04-11	12.4	13.7	1.0	11.1	5.0	22.0	18.2	0.081
BZW04P13	14.3	16.5	1.0	12.8	5.0	19.0	21.2	0.084
BZW04-13	14.3	15.8	1.0	12.8	5.0	19.0	21.2	0.084
BZW04P14	15.2	17.6	1.0	13.6	5.0	17.8	22.5	0.086
BZW04-14	15.2	16.8	1.0	13.6	5.0	17.8	22.5	0.086
BZW04P15	17.1	19.8	1.0	15.3	5.0	16.0	25.2	0.088
BZW04-15	17.1	18.9	1.0	15.3	5.0	16.0	25.2	0.088
BZW04P17	19.0	22.0	1.0	17.1	5.0	14.5	27.7	0.090
BZW04-17	19.0	21.0	1.0	17.1	5.0	14.5	27.7	0.090
BZW04P19	20.9	24.2	1.0	18.8	5.0	13.0	30.6	0.092
BZW04-19	20.9	23.1	1.0	18.8	5.0	13.0	30.6	0.092
BZW04P20	22.8	26.4	1.0	20.5	5.0	12.0	33.2	0.094
BZW04-20	22.8	25.2	1.0	20.5	5.0	12.0	33.2	0.094
BZW04P23	25.7	29.7	1.0	23.1	5.0	10.7	37.5	0.096
BZW04-23	25.7	28.4	1.0	23.1	5.0	10.7	37.5	0.096
BZW04P26	28.5	33.0	1.0	25.6	5.0	9.6	41.5	0.097
BZW04-26	28.5	31.5	1.0	25.6	5.0	9.6	41.5	0.097
BZW04P28	31.4	36.3	1.0	28.2	5.0	8.8	45.7	0.098
BZW04-28	31.4	34.7	1.0	28.2	5.0	8.8	45.7	0.098
BZW04P31	34.2	39.6	1.0	30.8	5.0	8.0	49.9	0.099
BZW04-31	34.2	37.8	1.0	30.8	5.0	8.0	49.9	0.099
BZW04P33	37.1	42.9	1.0	33.3	5.0	7.4	53.9	0.100
BZW04-33	37.1	41.0	1.0	33.3	5.0	7.4	53.9	0.100
BZW04P37	40.9	47.3	1.0	36.8	5.0	6.7	59.3	0.101
BZW04-37	40.9	45.2	1.0	36.8	5.0	6.7	59.3	0.101
BZW04P40	44.7	51.7	1.0	40.2	5.0	6.2	64.8	0.101
BZW04-40	44.7	49.4	1.0	40.2	5.0	6.2	64.8	0.101
BZW04P44	48.5	56.1	1.0	43.6	5.0	5.7	70.1	0.102
BZW04-44	48.5	53.6	1.0	43.6	5.0	5.7	70.1	0.102
BZW04P48	53.2	61.6	1.0	47.8	5.0	5.2	77.0	0.103
BZW04-48	53.2	58.8	1.0	47.8	5.0	5.2	77.0	0.103
BZW04P53	58.9	68.2	1.0	53.0	5.0	4.7	85.0	0.104
BZW04-53	58.9	65.1	1.0	53.0	5.0	4.7	85.0	0.104

ELECTRICAL CHARACTERISTICS

Rating at = 25 °C ambient temperature unless otherwise specified

TYPE	Breakdown Voltage @ I_t (Note 1)			Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{RWM}	Maximum Reverse Current	Maximum Clamping Voltage @ I_{RSM}	Maximum Temperature Co-efficient of V_{BR}
	V_{BR} (V)		I_t	V_{RWM}	I_R	I_{RSM}	V_{RSM}	of V_{BR}
	Min.	Max.	(mA)	(V)	(μ A)	(A)	(V)	(% / $^{\circ}$ C)
BZW04P58	64.6	74.8	1.0	58.1	5.0	4.3	92.0	0.104
BZW04-58	64.6	71.4	1.0	58.1	5.0	4.3	92.0	0.104
BZW04P64	71.3	82.5	1.0	64.1	5.0	3.9	103	0.105
BZW04-64	71.3	78.8	1.0	64.1	5.0	3.9	103	0.105
BZW04P70	77.9	90.2	1.0	70.1	5.0	3.5	113	0.105
BZW04-70	77.9	86.1	1.0	70.1	5.0	3.5	113	0.105
BZW04P78	86.5	100	1.0	77.8	5.0	3.2	125	0.106
BZW04-78	86.5	95.5	1.0	77.8	5.0	3.2	125	0.106
BZW04P85	95.0	110	1.0	85.5	5.0	2.9	137	0.106
BZW04-85	95.0	105	1.0	85.5	5.0	2.9	137	0.106
BZW04P94	105	121	1.0	94.0	5.0	2.6	152	0.107
BZW04-94	105	116	1.0	94.0	5.0	2.6	152	0.107
BZW04P102	114	132	1.0	102	5.0	2.4	165	0.107
BZW04-102	114	126	1.0	102	5.0	2.4	165	0.107
BZW04P111	124	143	1.0	111	5.0	2.2	179	0.107
BZW04-111	124	137	1.0	111	5.0	2.2	179	0.107
BZW04P128	143	165	1.0	128	5.0	2.0	207	0.108
BZW04-128	143	158	1.0	128	5.0	2.0	207	0.108
BZW04P136	152	176	1.0	136	5.0	1.8	219	0.108
BZW04-136	152	168	1.0	136	5.0	1.8	219	0.108
BZW04P145	161	187	1.0	145	5.0	1.7	234	0.108
BZW04-145	161	179	1.0	145	5.0	1.7	234	0.108
BZW04P154	171	198	1.0	154	5.0	1.6	246	0.108
BZW04-154	171	189	1.0	154	5.0	1.6	246	0.108
BZW04P171	190	220	1.0	171	5.0	1.5	274	0.108
BZW04-171	190	210	1.0	171	5.0	1.5	274	0.108
BZW04P188	209	242	1.0	188	5.0	1.4	301	0.108
BZW04-188	209	231	1.0	188	5.0	1.4	301	0.108
BZW04P213	237	275	1.0	213	5.0	1.3	344	0.110
BZW04-213	237	263	1.0	213	5.0	1.3	344	0.110
BZW04P239	266	308	1.0	239	5.0	1.3	384	0.110
BZW04-239	266	294	1.0	239	5.0	1.3	384	0.110
BZW04P256	285	330	1.0	256	5.0	1.2	414	0.110
BZW04-256	285	315	1.0	256	5.0	1.2	414	0.110
BZW04P273	304	352	1.0	273	5.0	1.2	438	0.110
BZW04-273	304	336	1.0	273	5.0	1.2	438	0.110
BZW04P299	332	385	1.0	299	5.0	0.9	482	0.110
BZW04-299	332	368	1.0	299	5.0	0.9	482	0.110
BZW04P342	380	440	1.0	342	5.0	0.9	548	0.110
BZW04-342	380	420	1.0	342	5.0	0.9	548	0.110
BZW04P376	418	484	1.0	376	5.0	0.8	603	0.110
BZW04-376	418	462	1.0	376	5.0	0.8	603	0.110

Note:

- (1) V_{BR} measured after I_t applied for 300 μ s., I_t = square wave pulse or equivalent.
- (2) V_F = 3.5 V_{max} , I_F = 25 Amps. (6.8 Volts thru 110 Volts)
 V_F = 5.0 V_{max} , I_F = 25 Amps. (120 Volts thru 440 Volts) per 1/2 square or equivalent sine wave.
PW = 8.3 ms, duty cycle = 4 pulses per minute maximum.

RATING AND CHARACTERISTIC CURVES (BZW04 SERIES)

FIG.1 - PULSE DERATING CURVE

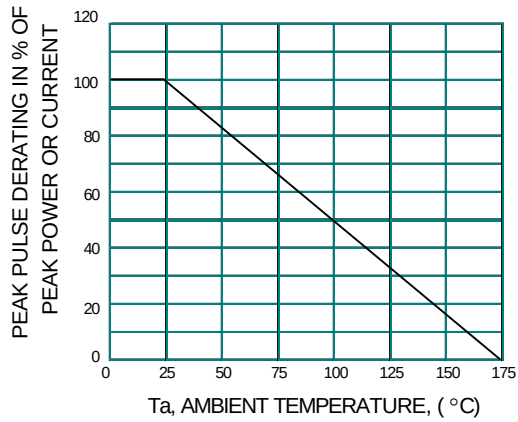


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

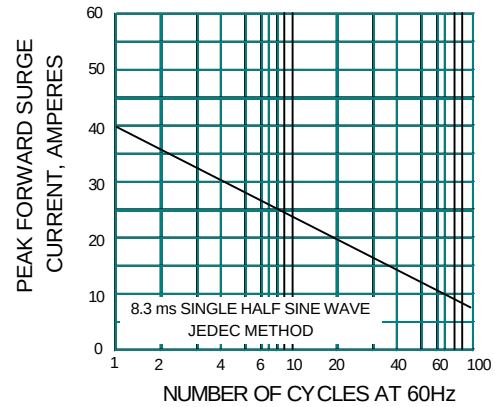


FIG.3 - STEADY STATE POWER DERATING

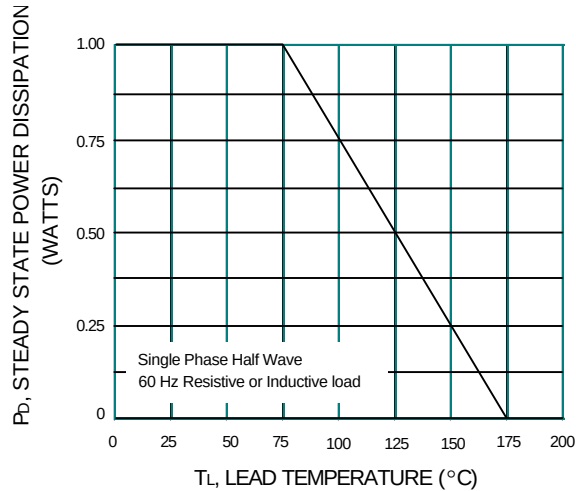


FIG.4 - PULSE RATING CURVE

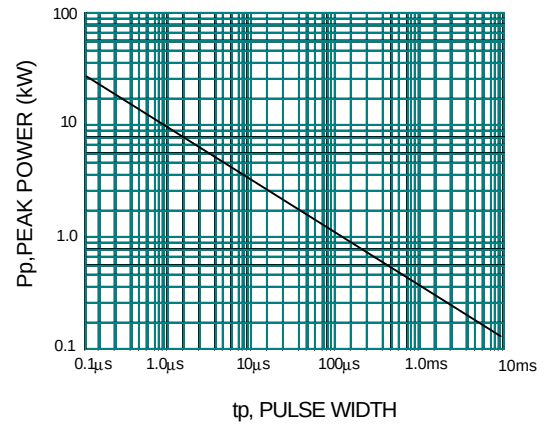


FIG.5 - PULSE WAVEFORM

