BL GALAXY ELECTRICAL

BZW04P-5V8 --- BZW04-376

TRANSIENT VOLTAGE SUPPRESSOR

BREAKDOWN VOLTAGE: 5.8 --- 376 V
PEAK PULSE POWER: 400 W

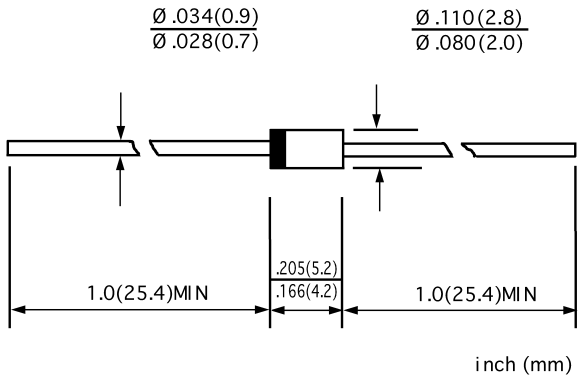
FEATURES

- ◇ Plastic package has underwriters laboratory flammability classification 94V-0
- ◇ Glass passivated junction
- ◇ 400W peak pulse power capability with a 10/1000μs waveform, repetition rate (duty cycle): 0.01%
- ◇ Excellent clamping capability
- ◇ Fast response time: typically less than 1.0ps from 0 Volts to $V_{(BR)}$ for uni-directional and 5.0ns for bi-directional types
- ◇ Devices with $V_{(BR)} \geqslant 10V$ I_D are typically I_D less than 1.0 μA
- ◇ High temperature soldering guaranteed:265 ℃/ 10 seconds, 0.375"(9.5mm) lead length, 5lbs. (2.3kg) tension

MECHANICAL DATA

- ◇ Case:JEDEC DO--41, molded plastic body over passivated junction
- ◇ Terminals: axial leads, solderable per MIL-STD-750, method 2026
- ◇ Polarity: foruni-directional types the color band denotes the cathode, which is postitive with respect to the anode under normal TVS operation
- ◇ Weight: 0.012 ounces, 0.34 grams
- ◇ Mounting position: any

DO-41



DEVICES FOR BIDIRECTIONAL APPLICATIONS

For bi-directional use add suffix letter "B" (e.g. BZW04P-6V4B).
Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.

	SYMBOL	VALUE	UNIT
Peak power dissipation with a 10/1000μs waveform (NOTE 1, FIG.1)	P_{PPM}	Minimum 400	W
Peak pulse current with a 10/1000μs waveform (NOTE 1)	I_{PPM}	See table 1	A
Steady state power dissipation at T_L=75 ℃ Lead lengths 0.375"(9.5mm) (NOTE 2)	$P_{M(AV)}$	1.0	W
Peak forward surge current, 8.3ms single half Sine-wave superimposed on rated load (JEDEC Method) (NOTE 3)	I_{FSM}	40.0	A
Maximum instantaneous forward voltage at 25A for unidirectional only (NOTE 4)	V_F	3.5/6.5	V
Operating junction and storage temperature range	T_J, T_{STG}	-50---+175	℃

NOTES: (1) Non-repetitive current pules, per Fig. 3 and derated above T_A=25℃ per Fig. 2
(2) Mounted on copper pad area of 1.6" x 1.6"(40 x40mm^2) per Fig. 5
(3) Measured of 8.3ms single half sine-wave or equare wave, duty cycle=4 pulses per minute maximum
(4) V_F=3.5 Volt max. for devices of $V_{(BR)} \leqslant 220V$, and V_F=5.0 Volt max. for devices of $V_{(BR)}$ >220V

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ELECTRICAL CHARACTERISTICS at(T_A=25℃ unless otherwise noted) **TABLE 1**

Device type		Breakdown voltage $V_{(BR)}$ (V)(NOTE1)		Test current at I_T (mA)	Stand-off voltage V_{WM} (V)	Maximum reverse leakge at V_{WM} $I_{D\ (NOTE3)(\mu A)}$	Maximum peak pulse $I_{PPM(NOTE2)}$ (A)	Maximum clamping voltage at I_{PPM} V_C(V)	Maximum temperature coefficient of $V_{(BR)}$ (%/℃)
Unidirectional	Bidirectional	Min	Max						
BZW04P5V8	BZW04P5V8B	6.45	7.48	10	5.80	1000	38.0	10.5	0.057
BZW04-5V8	BZW04-5V8B	6.45	7.14	10	5.80	1000	38.0	10.5	0.057
BZW04P6V4	BZW04P6V4B	7.13	8.25	10	6.40	500	35.4	11.3	0.061
BZW04-6V4	BZW04-6V4B	7.13	7.88	10	6.40	500	35.4	11.3	0.061
BZW04P7V0	BZW04P7V0B	7.79	9.02	10	7.02	200	33.0	12.1	0.065
BZW04-7V0	BZW04-7V0B	7.79	8.61	10	7.02	200	33.0	12.1	0.065
BZW04P7V8	BZW04P7V8B	8.65	10.0	1.0	7.78	50	30.0	13.4	0.068
BZW04-7V8	BZW04-7V8B	8.65	9.55	1.0	7.78	50	30.0	13.4	0.073
BZW04P8V5	BZW04P8V5B	9.50	11.0	1.0	8.55	10	27.6	14.5	0.070
BZW04-8V5	BZW04-8V5B	9.50	10.5	1.0	8.55	10	27.6	14.5	0.075
BZW04P9V4	BZW04P9V4B	10.5	12.1	1.0	9.40	5.0	25.7	15.6	0.075
BZW04-9V4	BZW04-9V4B	10.5	11.6	1.0	9.40	5.0	25.7	15.6	0.075
BZW04P10	BZW04P10B	11.4	13.2	1.0	10.2	5.0	24.0	16.7	0.078
BZW04-10	BZW04-10B	11.4	12.6	1.0	10.2	5.0	24.0	16.7	0.078
BZW04P11	BZW04P11B	12.4	14.3	1.0	11.1	5.0	22.0	18.2	0.081
BZW04-11	BZW04-11B	12.4	13.7	1.0	11.1	5.0	22.0	18.2	0.081
BZW04P13	BZW04P13B	14.3	16.5	1.0	12.8	5.0	19.0	21.2	0.084
BZW04-13	BZW04-13B	14.3	15.8	1.0	12.8	5.0	19.0	21.2	0.084
BZW04P14	BZW04P14B	15.2	17.6	1.0	13.6	1.0	17.8	22.5	0.086
BZW04-14	BZW04-14B	15.2	16.8	1.0	13.6	1.0	17.8	22.5	0.086
BZW04P15	BZW04P15B	17.1	19.8	1.0	15.3	1.0	16.0	25.2	0.088
BZW04-15	BZW04-15B	17.1	18.9	1.0	15.3	1.0	16.0	25.2	0.088
BZW04P17	BZW04P17B	19.0	22.0	1.0	17.1	1.0	14.5	27.7	0.090
BZW04-17	BZW04-17B	19.0	21.0	1.0	17.1	1.0	14.5	27.7	0.090
BZW04P19	BZW04P19B	20.9	24.2	1.0	18.8	1.0	13.0	30.6	0.092
BZW04-19	BZW04-19B	20.9	23.1	1.0	18.8	1.0	13.0	30.6	0.092
BZW04P20	BZW04P20B	22.8	26.4	1.0	20.5	1.0	12.0	33.2	0.094
BZW04-20	BZW04-20B	22.8	25.2	1.0	20.5	1.0	12.0	33.2	0.094
BZW04P23	BZW04P23B	25.7	29.7	1.0	23.1	1.0	10.7	37.5	0.096
BZW04-23	BZW04-23B	25.7	28.4	1.0	23.1	1.0	10.7	37.5	0.096
BZW04P26	BZW04P26B	28.5	33.0	1.0	25.6	1.0	9.6	41.5	0.097
BZW04-26	BZW04-26B	28.5	31.5	1.0	25.6	1.0	9.6	41.5	0.097
BZW04P28	BZW04P28B	31.4	36.3	1.0	28.2	1.0	8.8	45.7	0.098
BZW04-28	BZW04-28B	31.4	34.7	1.0	28.2	1.0	8.8	45.7	0.098
BZW04P31	BZW04P31B	34.2	39.6	1.0	30.8	1.0	8.0	49.9	0.099
BZW04-31	BZW04-31B	34.2	37.8	1.0	30.8	1.0	8.0	49.9	0.099
BZW04P33	BZW04P33B	37.1	42.9	1.0	33.3	1.0	7.4	53.9	0.100
BZW04-33	BZW04-33B	37.1	41.0	1.0	33.3	1.0	7.4	53.9	0.100
BZW04P37	BZW04P37B	40.9	47.3	1.0	36.8	1.0	6.7	59.3	0.101
BZW04-37	BZW04-37B	40.9	45.2	1.0	36.8	1.0	6.7	59.3	0.101
BZW04P40	BZW04P40B	44.7	51.7	1.0	40.2	1.0	6.2	64.8	0.101
BZW04-40	BZW04-40B	44.7	49.4	1.0	40.2	1.0	6.2	64.8	0.101
BZW04P44	BZW04P44B	48.5	56.1	1.0	43.6	1.0	5.7	70.1	0.102
BZW04-44	BZW04-44B	48.5	53.6	1.0	43.6	1.0	5.7	70.1	0.102
BZW04P48	BZW04P48B	53.2	61.6	1.0	47.8	1.0	5.2	77.0	0.103
BZW04-48	BZW04-48B	53.2	58.8	1.0	47.8	1.0	5.2	77.0	0.103

ELECTRICAL CHARACTERISTICS at(T_A=25 ℃ unless otherwise noted) **TABLE 1(Cont' d)**

Device type		Breakdown voltage $V_{(BR)}$ (V)(NOTE1)		Test current at I_T (mA)	Stand-off voltage V_{WM} (V)	Maximum reverse leakge at V_{WM} $I_{D\ (NOTE3)}$(μA)	Maximum peak pulse I_{PPM}(NOTE2) (A)	Maximum clamping voltage at I_{PPM} V_C(V)	Maximum temperature coefficient of $V_{(BR)}$ (%/℃)
Unidirectional	Bidirectional	Min	Max						
BZW04P53	BZW04P53B	58.9	68.2	1.0	53.0	1.0	4.7	85.0	0.104
BZW04-53	BZW04-53B	58.9	65.1	1.0	53.0	1.0	4.7	85.0	0.104
BZW04P58	BZW04P58B	64.6	74.8	1.0	58.1	1.0	4.3	92.0	0.104
BZW04-58	BZW04-58B	64.6	71.4	1.0	58.1	1.0	4.3	92.0	0.104
BZW04P64	BZW04P64B	71.3	82.5	1.0	64.1	1.0	3.9	103	0.105
BZW04-64	BZW04-64B	71.3	78.8	1.0	64.1	1.0	3.9	103	0.105
BZW04P70	BZW04P70B	77.9	90.2	1.0	70.1	1.0	3.5	113	0.105
BZW04-70	BZW04-70B	77.9	86.1	1.0	70.1	1.0	3.5	113	0.105
BZW04P78	BZW04P78B	86.5	100	1.0	78.0	1.0	3.2	125	0.105
BZW04-78	BZW04-78B	86.5	95.5	1.0	78.0	1.0	3.2	125	0.105
BZW04P85	BZW04P85B	95.0	110	1.0	85.5	1.0	2.9	137	0.106
BZW04-85	BZW04-85B	95.0	105	1.0	85.5	1.0	2.9	137	0.106
BZW04P94	BZW04P94B	105.0	121	1.0	94.0	1.0	2.6	152	0.107
BZW04-94	BZW04-94B	105	116	1.0	94.0	1.0	2.6	152	0.107
BZW04P102	BZW04P102B	114	132	1.0	102.0	1.0	2.4	165	0.107
BZW04-102	BZW04-102B	114	126	1.0	102	1.0	2.4	165	0.107
BZW04P110	BZW04P110B	124	143	1.0	111	1.0	2.2	179	0.107
BZW04-110	BZW04-110B	124	137	1.0	111	1.0	2.2	179	0.107
BZW04P128	BZW04P128B	143	165	1.0	128	1.0	2.0	207	0.108
BZW04-128	BZW04-128B	143	158	1.0	128	1.0	2.0	207	0.108
BZW04P136	BZW04P136B	152	176	1.0	136	1.0	1.8	219	0.108
BZW04-136	BZW04-136B	152	168	1.0	136	1.0	1.8	219	0.108
BZW04P145	BZW04P145B	161	187	1.0	145	1.0	1.7	234	0.108
BZW04-145	BZW04-145B	161	179	1.0	145	1.0	1.7	234	0.108
BZW04P154	BZW04P154B	171	198	1.0	154	1.0	1.6	246	0.108
BZW04-154	BZW04-154B	171	189	1.0	154	1.0	1.6	246	0.108
BZW04P171	BZW04P171B	190	220	1.0	171	1.0	1.5	274	0.108
BZW04-171	BZW04-171B	190	210	1.0	171	1.0	1.5	274	0.108
BZW04P188	BZW04P188B	209	242	1.0	188	1.0	1.4	301	0.108
BZW04-188	BZW04-188B	209	231	1.0	188	1.0	1.4	301	0.108
BZW04P213	BZW04P213B	237	275	1.0	213	1.0	1.5	344	0.110
BZW04-213	BZW04-213B	237	263	1.0	213	1.0	1.5	344	0.110
BZW04P239	BZW04P239B	266	308	1.0	239	1.0	1.5	384	0.110
BZW04-239	BZW04-239B	266	294	1.0	239	1.0	1.5	384	0.110
BZW04P256	BZW04P256B	285	330	1.0	256	1.0	1.20	414	0.110
BZW04-256	BZW04-256B	285	315	1.0	256	1.0	1.20	414	0.110
BZW04P273	BZW04P273B	304	352	1.0	273	1.0	1.20	438	0.110
BZW04-273	BZW04-273B	304	336	1.0	273	1.0	1.20	438	0.110
BZW04P299	BZW04P299B	332	385	1.0	299	1.0	0.90	482	0.110
BZW04-299	BZW04-299B	332	368	1.0	299	1.0	0.90	482	0.110
BZW04P342	BZW04P342B	380	440	1.0	342	1.0	0.90	548	0.110
BZW04-342	BZW04-342B	380	420	1.0	342	1.0	0.90	548	0.110
BZW04P376	BZW04P376B	418	484	1.0	376	1.0	0.80	603	0.110
BZW04-376	BZW04-376B	418	462	1.0	376	1.0	0.80	603	0.110

NOTE: (1) Pulse test: tp≤50ms.

(2) Surge current waveform per Fig. 3 and derated Fig. 2

(3) For bidirectional types having V_{WM} of 10 volts and less, the I_D limit is doubled

(4) All terms and symbols are consistent with ANSI/IEEE C62.35

FIG.1 – PEAK PULSE POWER RATING CURVE

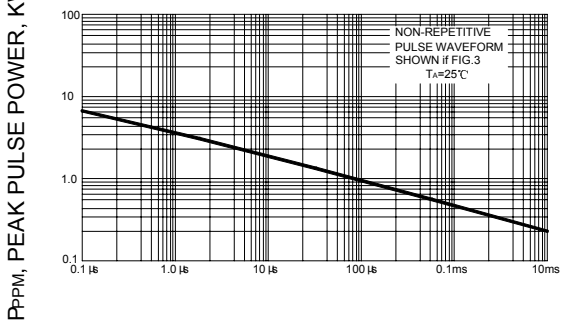

FIG.2 – PULSE DERATING CURVE

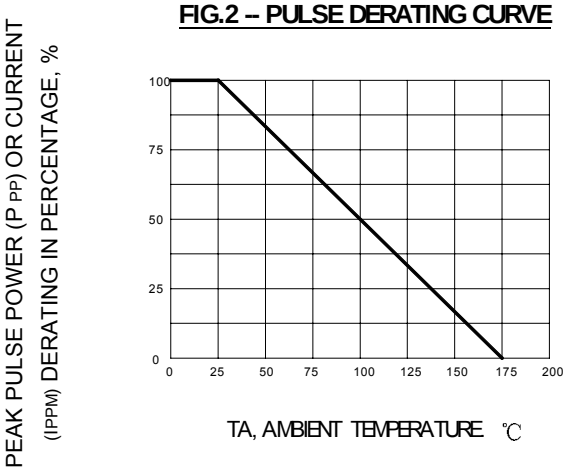

FIG.3 -- PULSE WAVEFORM

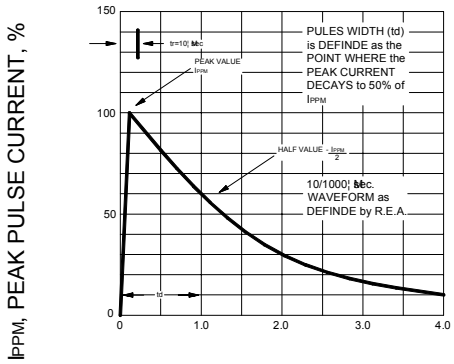

FIG.4 -- TYPICAL JUNCTION CAPACITANCE UNIDIRECTIONAL

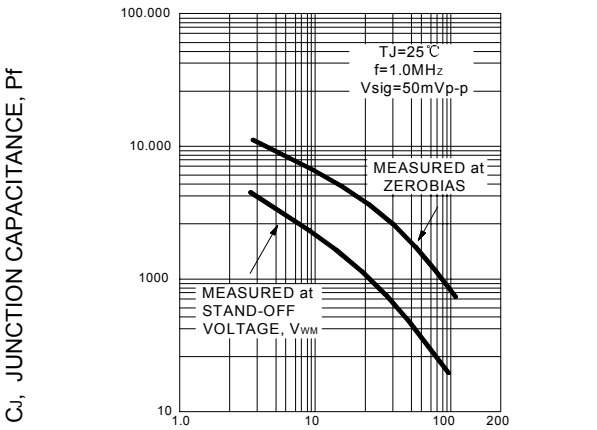

FIG.5 -- STEADY STATE POWER DERATING CURVE

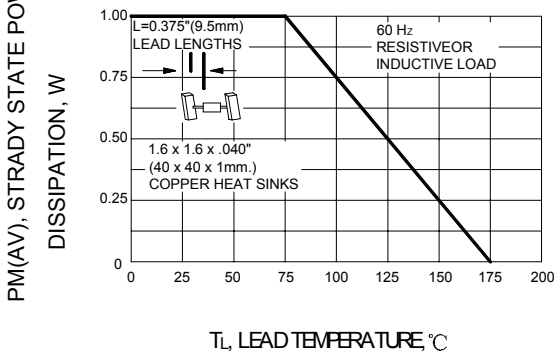

FIG.7 -- TYPICAL REVERSE LEAKAGE CHARACTERISTICS

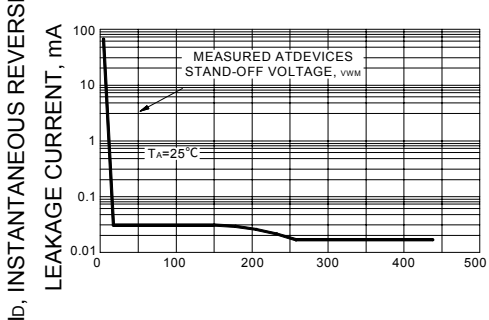

FIG.6 -- MAXIMUN NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL ONLY