

600 W Unidirectional and Bidirectional Transient Voltage Suppressor Diodes

<p>Dimensions in mm.</p> <p style="text-align: right;">DO-15 (Plastic)</p> <p>Mounting instructions</p> <ol style="list-style-type: none"> 1. Min. distance from body to soldering point, 4 mm. 2. Max. solder temperature, 350 °C. 3. Max. soldering time, 3.5 sec. 4. Do not bend lead at a point closer than 2 mm. to the body. 	<table border="0" style="width: 100%;"> <tr> <td style="text-align: center;"> <p>Peak Pulse Power Rating At 1 ms. Exp. 600 W</p> </td> <td style="text-align: center;"> <p>Reverse stand-off Voltage 5.8 ÷ 376 V</p> </td> </tr> <tr> <td colspan="2" style="text-align: center;"> </td> </tr> <tr> <td colspan="2"> <ul style="list-style-type: none"> • Glass passivated junction • Low Capacitance AC signal protection • Response time typically < 1 ns. • Molded case • The plastic material carries U/L recognition 94 V-0 • Terminals: Axial leads • Polarity: Color band denotes Cathode except bidirectional types </td> </tr> </table>	<p>Peak Pulse Power Rating At 1 ms. Exp. 600 W</p>	<p>Reverse stand-off Voltage 5.8 ÷ 376 V</p>			<ul style="list-style-type: none"> • Glass passivated junction • Low Capacitance AC signal protection • Response time typically < 1 ns. • Molded case • The plastic material carries U/L recognition 94 V-0 • Terminals: Axial leads • Polarity: Color band denotes Cathode except bidirectional types 	
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Maximum Ratings, according to IEC publication No. 134

P_{PP}	Peak pulse power with 10/1000 μ s exponential pulse	600 W
I_{FSM}	Non repetitive surge peak forward current (t = 10 ms) (Note 1)	100 A
T_j	Operating temperature range	- 65 to + 175 °C
T_{stg}	Storage temperature range	- 65 to + 175 °C
$P_{M(AV)}$	Steady state Power dissipation (l = 10 mm)	5 W

Electrical Characteristics at Tamb = 25 °C

V_F	Max. forward voltage drop at $I_F = 50 A$ (Note 1)	$V_{BR} \leq 220 V$ $V_{BR} > 220 V$	3.5 V 5.0 V
R_{thj-l}	Max. thermal resistance (l = 10 mm.)		30 °C/W

Note 1: Valid only for Unidirectional.

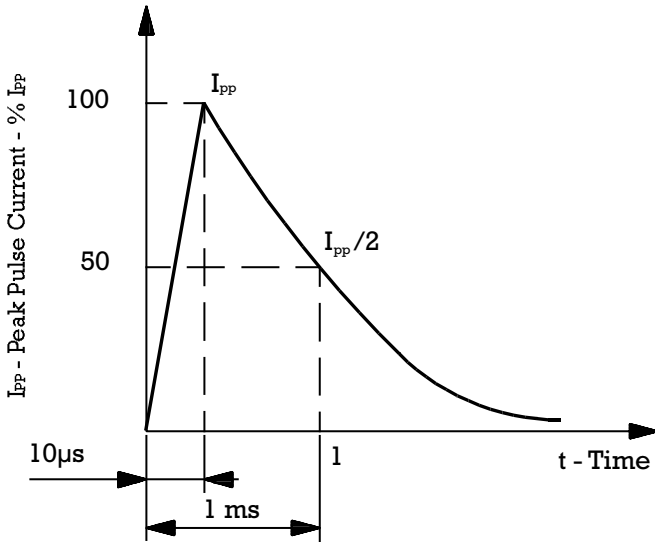
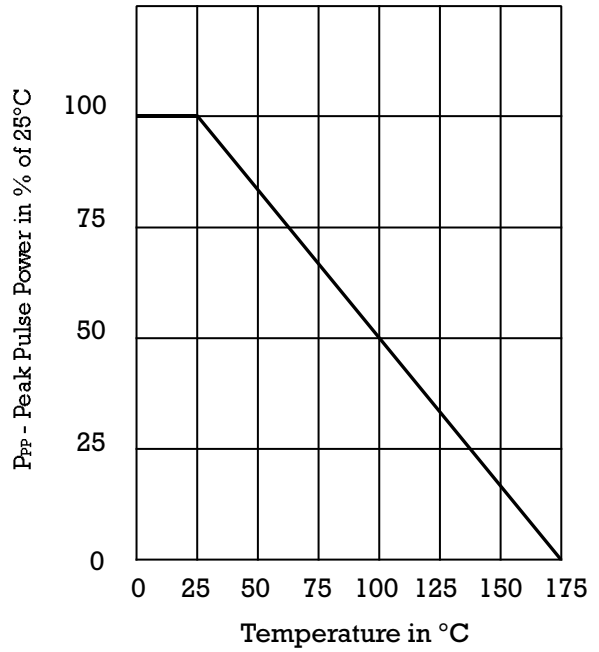
Type	Maximum Reverse Leakage Current		(1) Breakdown Voltage				Max. Clamping Voltage	
	I_{RM}	at V_{RM}	V_{BR}	at I_R			V_{CL}	at I_{PP}
Unidirectional	(μA)	(V)	Min.	Nom.	Max.	(mA)	max. 1 ms. Expo.	
				(V)			(V)	(A)
BZW06-5V8	1000	5.8	6.45	6.8	7.14	10	10.5	57
BZW06-6V4	500	6.4	7.13	7.5	7.88	10	11.3	53
BZW06-7V0	200	7.02	7.79	8.2	8.61	10	12.1	50
BZW06-7V8	50	7.78	8.65	9.1	9.55	1	13.4	45
BZW06-8V5	10	8.55	9.5	10	10.5	1	14.5	41
BZW06-9V4	5	9.4	10.5	11	11.6	1	15.6	38
BZW06-10	5	10.2	11.4	12	12.6	1	16.7	36
BZW06-11	5	11.1	12.4	13	13.7	1	18.2	33
BZW06-13	5	12.8	14.3	15	15.8	1	21.2	28
BZW06-14	5	13.6	15.2	16	16.8	1	22.5	27
BZW06-15	5	15.3	17.1	18	18.9	1	25.2	24
BZW06-17	5	17.1	19	20	21	1	27.7	22
BZW06-19	5	18.8	20.9	22	23.1	1	30.6	20
BZW06-20	5	20.5	22.8	24	25.2	1	33.2	18
BZW06-23	5	23.1	25.7	27	28.4	1	37.5	16
BZW06-26	5	25.6	28.5	30	31.5	1	41.5	14.5
BZW06-28	5	28.2	31.4	33	34.7	1	45.7	13.1
BZW06-31	5	30.8	34.2	36	37.8	1	49.9	12
BZW06-33	5	33.3	37.1	39	41	1	53.9	11.1
BZW06-37	5	36.8	40.9	43	45.2	1	59.3	10.1
BZW06-40	5	40.2	44.7	47	49.4	1	64.8	9.3
BZW06-44	5	43.6	48.5	51	53.6	1	70.1	8.6
BZW06-48	5	47.8	53.2	56	58.8	1	77	7.8
BZW06-53	5	53	58.9	62	65.1	1	85	7.1
BZW06-58	5	58.1	64.6	68	71.4	1	92	6.5
BZW06-64	5	64.1	71.3	75	78.8	1	103	5.8
BZW06-70	5	70.1	77.9	82	86.1	1	113	5.3
BZW06-78	5	77.8	86.5	91	95.5	1	125	4.8
BZW06-85	5	85.8	95	100	105	1	137	4.4
BZW06-94	5	94	105	110	116	1	152	3.9
BZW06-102	5	102	114	120	126	1	165	3.6
BZW06-111	5	111	124	130	137	1	179	3.4
BZW06-128	5	128	143	150	158	1	207	2.9
BZW06-136	5	136	152	160	168	1	219	2.7
BZW06-145	5	145	161	170	179	1	234	2.6
BZW06-154	5	154	171	180	189	1	246	2.4
BZW06-171	5	171	190	200	210	1	274	2.2
BZW06-188	5	188	209	220	231	1	301	2
BZW06-213	5	213	237	250	263	1	344	1.8
BZW06-239	5	239	266	280	294	1	384	1.7
BZW06-256	5	256	285	300	315	1	414	1.6
BZW06-273	5	273	304	320	336	1	436	1.6
BZW06-299	5	299	332	350	368	1	482	1.6
BZW06-342	5	342	380	400	420	1	548	1.3
BZW06-376	5	376	418	440	462	1	603	1.3

 (1) Tested with pulses. Pulse test: $t_p = 50 \text{ ms}$; $\delta < 2\%$

Type	Maximum Reverse Leakage Current		Breakdown Voltage				Max. Clamping Voltage	
	I_{RM} at V_{RM}	V_{RM}	(1) V_{BR} at I_R	V_{BR} (V)			V_{CL} at I_{PP}	I_{PP}
	(μA)	(V)	Min.	Nom.	Max.	(mA)	(V)	(A)
Bidirectional								
BZW06-5V8B	1000	5.8	6.45	6.8	7.5	10	10.5	57
BZW06-6V4B	500	6.4	7.13	7.5	8.25	10	11.3	53
BZW06-7V0B	200	7.02	7.79	8.2	9.02	10	12.1	50
BZW06-7V8B	50	7.78	8.65	9.1	10	1	13.4	45
BZW06-8V5B	10	8.55	9.5	10	11	1	14.5	41
BZW06-9V4B	5	9.4	10.5	11	12.1	1	15.6	38
BZW06-10B	5	10.2	11.4	12	13.2	1	16.7	36
BZW06-11B	5	11.1	12.4	13	14.3	1	18.2	33
BZW06-13B	5	12.8	14.3	15	16.5	1	21.2	28
BZW06-14B	5	13.6	15.2	16	17.6	1	22.5	27
BZW06-15B	5	15.3	17.1	18	19.8	1	25.2	24
BZW06-17B	5	17.1	19	20	22	1	27.7	22
BZW06-19B	5	18.8	20.9	22	24.2	1	30.6	20
BZW06-20B	5	20.5	22.8	24	26.4	1	33.2	18
BZW06-23B	5	23.1	25.7	27	29.7	1	37.5	16
BZW06-26B	5	25.6	28.5	30	33	1	41.5	14.5
BZW06-28B	5	28.2	31.4	33	36.3	1	45.7	13.1
BZW06-31B	5	30.8	34.2	36	39.6	1	49.9	12
BZW06-33B	5	33.3	37.1	39	42.9	1	53.9	11.1
BZW06-37B	5	36.8	40.9	43	47.3	1	59.3	10.1
BZW06-40B	5	40.2	44.7	47	51.7	1	64.8	9.3
BZW06-44B	5	43.6	48.5	51	56.1	1	70.1	8.6
BZW06-48B	5	47.8	53.2	56	61.6	1	77	7.8
BZW06-53B	5	53	58.9	62	68.2	1	85	7.1
BZW06-58B	5	58.1	64.6	68	74.8	1	92	6.5
BZW06-64B	5	64.1	71.3	75	82.5	1	103	5.8
BZW06-70B	5	70.1	77.9	82	90.2	1	113	5.3
BZW06-78B	5	77.8	86.5	91	100	1	125	4.8
BZW06-85B	5	85.8	95	100	110	1	137	4.4
BZW06-94B	5	94	105	110	121	1	152	3.9
BZW06-102B	5	102	114	120	132	1	165	3.6
BZW06-111B	5	111	124	130	143	1	179	3.4
BZW06-128B	5	128	143	150	165	1	207	2.9
BZW06-136B	5	136	152	160	176	1	219	2.7
BZW06-145B	5	145	161	170	187	1	234	2.6
BZW06-154B	5	154	171	180	198	1	246	2.4
BZW06-171B	5	171	190	200	220	1	274	2.2
BZW06-188B	5	188	209	220	242	1	301	2
BZW06-213B	5	213	237	250	275	1	344	1.8
BZW06-239B	5	239	266	280	308	1	384	1.7
BZW06-256B	5	256	285	300	330	1	414	1.6

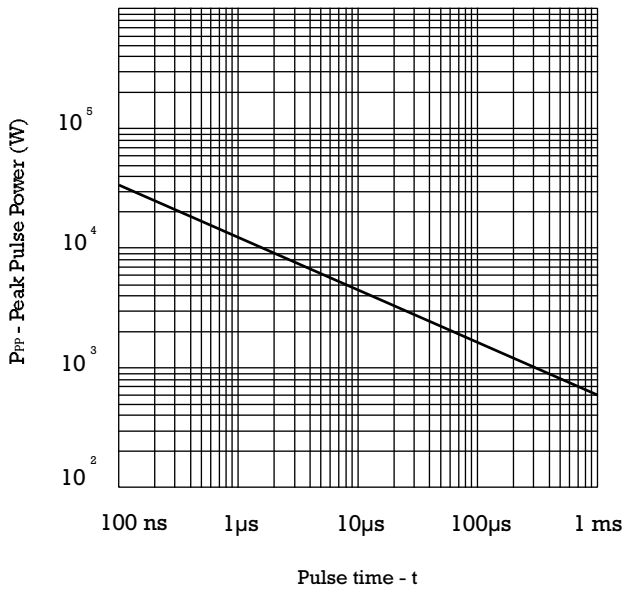
(1) Tested with pulses.
Pulse test: $t_p = 50 \text{ ms}$; $\delta < 2\%$

DERATING CURVE



Pulse wave form 10/1000

PEAK PULSE POWER RATING CURVE



TYPICAL JUNCTION CAPACITANCE

