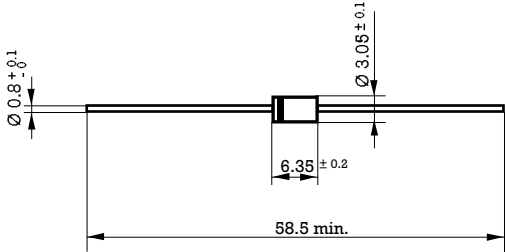



## 400W Unidirectional and Bidirectional Transient Voltage Suppressor Diodes

<p>Dimensions in mm.</p> <p>DO-15 (Plastic)</p> 	<p>Peak Pulse Power Rating At 1 ms. Exp. 400 W</p> <p>Reverse stand-off Voltage 5.8 ÷ 256 V</p> 
<p><b>Mounting instructions</b></p> <ol style="list-style-type: none"> <li>1. Min. distance from body to soldering point, 4 mm.</li> <li>2. Max. solder temperature, 350 °C.</li> <li>3. Max. soldering time, 3.5 sec.</li> <li>4. Do not bend lead at a point closer than 2 mm. to the body.</li> </ol>	<ul style="list-style-type: none"> <li>• Glass passivated junction</li> <li>• Low Capacitance AC signal protection</li> <li>• Response time typically &lt; 1 ns.</li> <li>• Molded case</li> <li>• The plastic material carries U/L recognition 94 V-0</li> <li>• Terminals: Axial leads</li> <li>• Polarity: Color band denotes Cathode except bidirectional types</li> </ul>

### Maximum Ratings, according to IEC publication No. 134

$P_{PP}$	Peak pulse power with 10/1000 $\mu$ s exponential pulse	400 W
$I_{FSM}$	Non repetitive surge peak forward current (t = 10 ms) (Note 1)	50 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 = 10mm)	1 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.)		45 °C/W

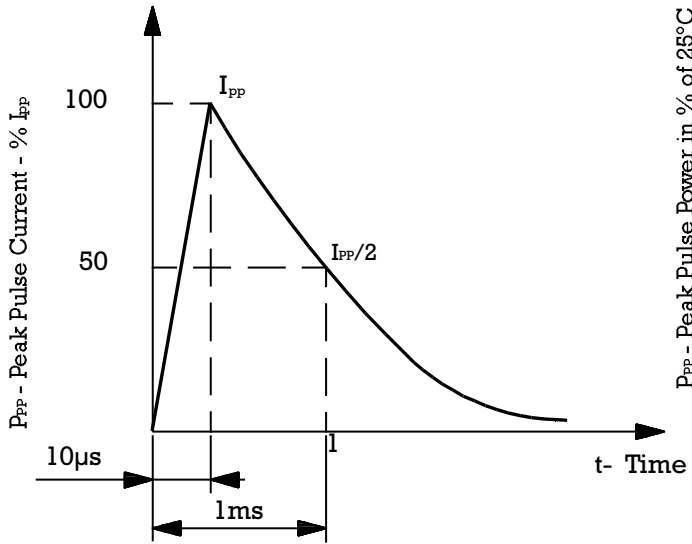
Note 1: Valid only for Unidirectional.

Type	Maximum Reverse Leakage Current		(1) Breakdown Voltage				Max. Clamping Voltage	
	$I_{RM}$ at $V_{RM}$	$V_{RM}$	$V_{BR}$ at $I_R$	$V_{BR}$ (V)			$V_{CL}$ at $I_{PP}$	$I_{PP}$
Unidirectional	( $\mu A$ )	(V)	Min.	Nom.	Max.	(mA)	(V)	(A)
BZW04-5V8	1000	5.8	6.45	6.8	7.14	10	10.5	38
BZW04-6V4	500	6.4	7.13	7.5	7.88	10	11.3	35.4
BZW04-7V0	200	7.02	7.79	8.2	8.61	10	12.1	33
BZW04-7V8	50	7.78	8.65	9.1	9.55	1	13.4	30
BZW04-8V5	10	8.55	9.5	10	10.5	1	14.5	27.6
BZW04-9V4	5	9.4	10.5	11	11.6	1	15.6	25.7
BZW04-10	5	10.2	11.4	12	12.6	1	16.7	24
BZW04-11	5	11.1	12.4	13	13.7	1	18.2	22
BZW04-13	5	12.8	14.3	15	15.8	1	21.2	19
BZW04-14	5	13.6	15.2	16	16.8	1	22.5	17.8
BZW04-15	5	15.3	17.1	18	18.9	1	25.2	16
BZW04-17	5	17.1	19	20	21	1	27.7	14.5
BZW04-19	5	18.8	20.9	22	23.1	1	30.6	13
BZW04-20	5	20.5	22.8	24	25.2	1	33.2	12
BZW04-23	5	23.1	25.7	27	28.4	1	37.5	10.7
BZW04-26	5	25.6	28.5	30	31.5	1	41.5	9.6
BZW04-28	5	28.2	31.4	33	34.7	1	45.7	8.8
BZW04-31	5	30.8	34.2	36	37.8	1	49.9	8
BZW04-33	5	33.3	37.1	39	41	1	53.9	7.4
BZW04-37	5	36.8	40.9	43	45.2	1	59.3	6.7
BZW04-40	5	40.2	44.7	47	49.4	1	64.8	6.2
BZW04-44	5	43.6	48.5	51	53.6	1	70.1	5.7
BZW04-48	5	47.8	53.2	56	58.8	1	77	5.2
BZW04-53	5	53	58.9	62	65.1	1	85	4.7
BZW04-58	5	58.1	64.6	68	71.4	1	92	4.3
BZW04-64	5	64.1	71.3	75	78.8	1	103	3.9
BZW04-70	5	70.1	77.9	82	86.1	1	113	3.5
BZW04-78	5	77.8	86.5	91	95.5	1	125	3.2
BZW04-85	5	85.8	95	100	105	1	137	2.9
BZW04-94	5	94	105	110	116	1	152	2.6
BZW04-102	5	102	114	120	126	1	165	2.4
BZW04-111	5	111	124	130	137	1	179	2.2
BZW04-128	5	128	143	150	158	1	207	2.0
BZW04-136	5	136	152	160	168	1	219	1.8
BZW04-145	5	145	161	170	179	1	234	1.7
BZW04-154	5	154	171	180	189	1	246	1.6
BZW04-171	5	171	190	200	210	1	274	1.5
BZW04-188	5	188	209	220	231	1	301	1.4
BZW04-213	5	213	237	250	263	1	344	1.3
BZW04-239	5	239	266	280	294	1	384	1.2
BZW04-256	5	256	285	300	315	1	414	1.2

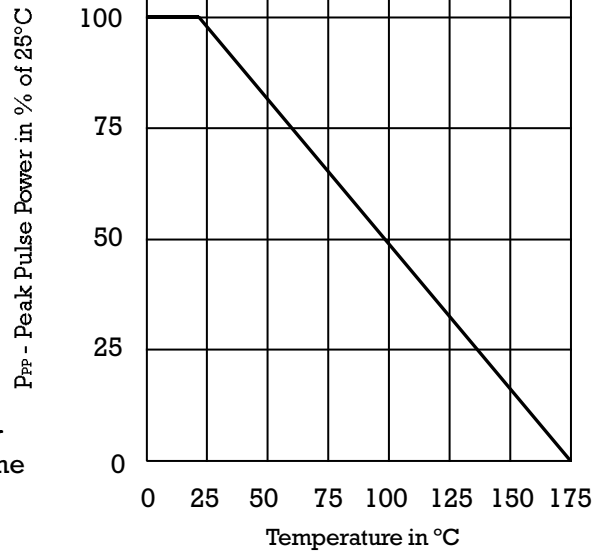
(1) Tested with pulses.  
Pulse test:  $t_p = 50 \text{ ms}$ ;  $\delta < 2\%$

Type	Maximum Reverse Leakage Current		(1) Breakdown Voltage				Max. Clamping Voltage	
	$I_{RM}$ at $V_{RM}$	$V_{RM}$	$V_{BR}$ at $I_R$			$V_{CL}$ at $I_{PP}$	max. 1 ms. Expo.	
	( $\mu A$ )	(V)	Min.	Nom.	Max.	(mA)	(V)	(A)
BZW04-6V4B	500	6.4	7.13	7.5	8.25	10	11.3	35.4
BZW04-7V0B	200	7.02	7.79	8.2	9.02	10	12.1	33
BZW04-7V8B	50	7.78	8.65	9.1	10	1	13.4	30
BZW04-8V5B	10	8.55	9.5	10	11	1	14.5	27.6
BZW04-9V4B	5	9.4	10.5	11	12.1	1	15.6	25.7
BZW04-10B	5	10.2	11.4	12	13.2	1	16.7	24
BZW04-11B	5	11.1	12.4	13	14.3	1	18.2	22
BZW04-13B	5	12.8	14.3	15	16.5	1	21.2	19
BZW04-14B	5	13.6	15.2	16	17.6	1	22.5	17.8
BZW04-15B	5	15.3	17.1	18	19.8	1	25.2	16
BZW04-17B	5	17.1	19	20	22	1	27.7	14.5
BZW04-19B	5	18.8	20.9	22	24.2	1	30.6	13
BZW04-20B	5	20.5	22.8	24	26.4	1	33.2	12
BZW04-23B	5	23.1	25.7	27	29.7	1	37.5	10.7
BZW04-26B	5	25.6	28.5	30	33	1	41.5	9.6
BZW04-28B	5	28.2	31.4	33	36.3	1	45.7	8.8
BZW04-31B	5	30.8	34.2	36	39.6	1	49.9	8
BZW04-33B	5	33.3	37.1	39	42.9	1	53.9	7.4
BZW04-37B	5	36.8	40.9	43	47.3	1	59.3	6.7
BZW04-40B	5	40.2	44.7	47	51.7	1	64.8	6.2
BZW04-44B	5	43.6	48.5	51	56.1	1	70.1	5.7
BZW04-48B	5	47.8	53.2	56	61.6	1	77	5.2
BZW04-53B	5	53	58.9	62	68.2	1	85	4.7
BZW04-58B	5	58.1	64.6	68	74.8	1	92	4.3
BZW04-64B	5	64.1	71.3	75	82.5	1	103	3.9
BZW04-70B	5	70.1	77.9	82	92.2	1	113	3.5
BZW04-78B	5	77.8	86.5	91	100	1	125	3.2
BZW04-85B	5	85.8	95	100	110	1	137	2.9
BZW04-94B	5	94	105	110	121	1	152	2.6
BZW04-102B	5	102	114	120	132	1	165	2.4
BZW04-111B	5	111	124	130	143	1	179	2.2
BZW04-128B	5	128	143	150	165	1	207	2.0
BZW04-136B	5	136	152	160	176	1	219	1.8
BZW04-145B	5	145	161	170	187	1	234	1.7
BZW04-154B	5	154	171	180	198	1	246	1.6
BZW04-171B	5	171	190	200	220	1	274	1.5
BZW04-188B	5	188	209	220	242	1	301	1.4
BZW04-213B	5	213	237	250	275	1	344	1.3
BZW04-239B	5	239	266	280	308	1	384	1.2
BZW04-256B	5	256	285	300	330	1	414	1.2

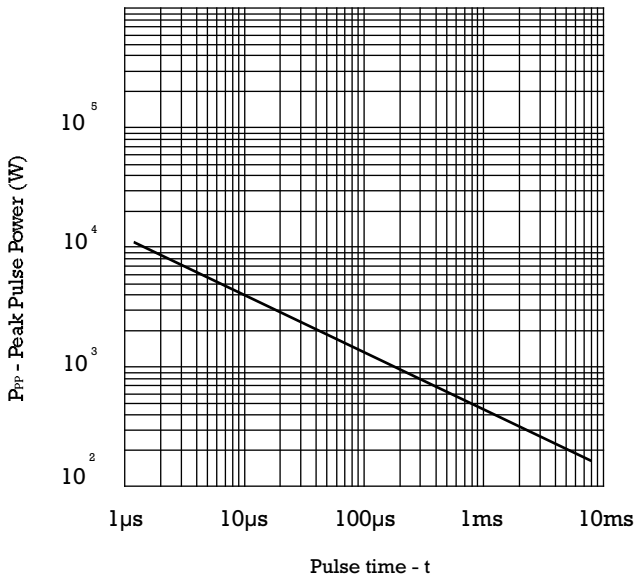
(1) Tested with pulses.  
Pulse test:  $t_p = 50$  ms;  $\delta < 2\%$



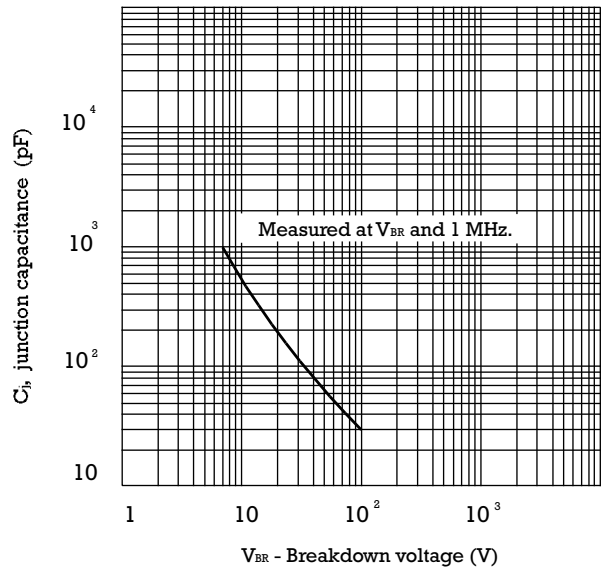
Pulse wave form 10/1000



PEAK PULSE POWER RATING CURVE



TYPICAL JUNCTION CAPACITANCE



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