

## 600 W Unidirectional and Bidirectional Transient Voltage Suppressor Diodes

<b>DO-204AC (DO-15)</b>  	<b>Peak Pulse Power Rating At 1 ms. Exp.</b> 600 W	<b>Reverse stand-off Voltage</b> 5.8 ÷ 376 V
<b>HYPERECTIFIER</b>		
<b>FEATURES</b> <ul style="list-style-type: none"> <li>• Glass passivated chip junction</li> <li>• Hyperrectifier structure for high reliability</li> <li>• 600 W peak pulse power capability with a 10/1000 µs waveform, repetitive rate (duty cycle): 0.01 %</li> <li>• Solder dip 260°C, 10s</li> <li>• AEC-Q101 qualified</li> <li>• Component in accordance to RoHS 2011/65/EU and WEEE 2002/96/EC</li> <li>• Excellent clamping capability</li> <li>• Very fast response time</li> <li>• Low incremental surge resistance</li> <li>• Available in uni-directional and bi-directional</li> </ul>		
<b>MECHANICAL DATA</b> <ul style="list-style-type: none"> <li>• <b>Case:</b> DO-204AC (DO-15) Epoxy meets UL 94V-0 flammability rating.</li> <li>• <b>Polarity:</b> For uni-directional types the color band denotes cathode end, no marking on bi-directional types</li> <li>• <b>Terminals:</b> Matte tin plated leads, solderable per MIL-STD-750 Method 2026, J-STD-002 and JESD22-B102. Consumer grade, meets JEDEC 201 class 1A whisker test.</li> </ul>		
<b>TYPICAL APPLICATIONS</b> Used in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, automotive and telecommunication.		

### Maximum Ratings and Electrical Characteristics at 25 °C

$P_{pp}$	Peak pulse power with 10/1000 µs 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 at ( $I = 10$ 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	3.5 V
		$V_{BR} > 220$ V	5.0 V
$R_{thj-I}$	Max. thermal resistance ( $I = 10$ mm.)		30 °C/W

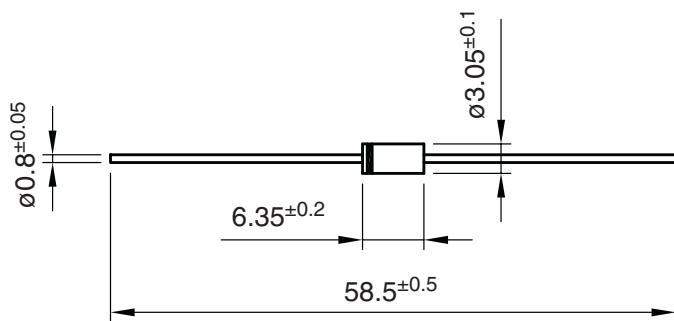
Note 1: Valid only for Unidirectional.

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### Ordering information

PREFERRED P/N	PACKAGE CODE	DELIVERY MODE	BASE QUANTITY	UNIT WEIGHT (g)
BZW06-20 AMP	AMP	AMMO BOX	4,000	0.378
BZW06-20 TR	TR	14" diameter tape and reel	4,000	0.378

### Package Outline Dimensions: (mm) DO-204AC (DO-15)



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Type	Maximum Reverse Leakage Current I <sub>RM</sub> at V <sub>RM</sub>		Breakdown Voltage V <sub>BR</sub> (V)			at I <sub>R</sub>	Max. Clamping Voltage V <sub>CL</sub> at I <sub>PP</sub> max. 1 ms. Expo.	
	(μA)	(V)	Min.	Nom.	Max.		(V)	(A)
Unidirectional								
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: tp ≤ 50 ms; δ < 2%

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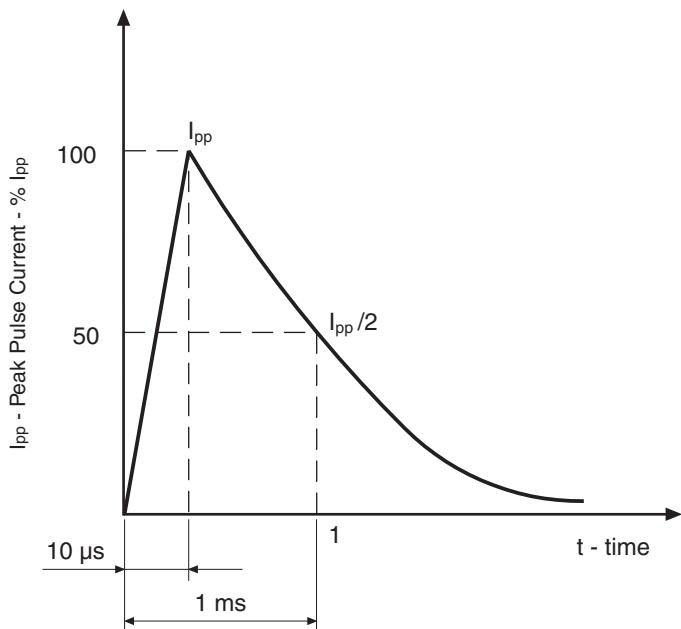
Type	Maximum Reverse Leakage Current		Breakdown Voltage			(mA)	Max. Clamping Voltage	
	I <sub>RM</sub>	at V <sub>RM</sub>	V <sub>BR</sub>	at I <sub>R</sub>	V <sub>CL</sub> at I <sub>PP</sub>		max. 1 ms. Expo.	
Bidirectional	(μA)	(V)	Min.	Nom.	Max.	(mA)	(V)	(A)
BZW06-5V8B	1000	5.8	6.45	6.8	7.5	10	10.5	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
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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
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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
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BZW06-376B	5	376	418	440	480	1	603	1.3

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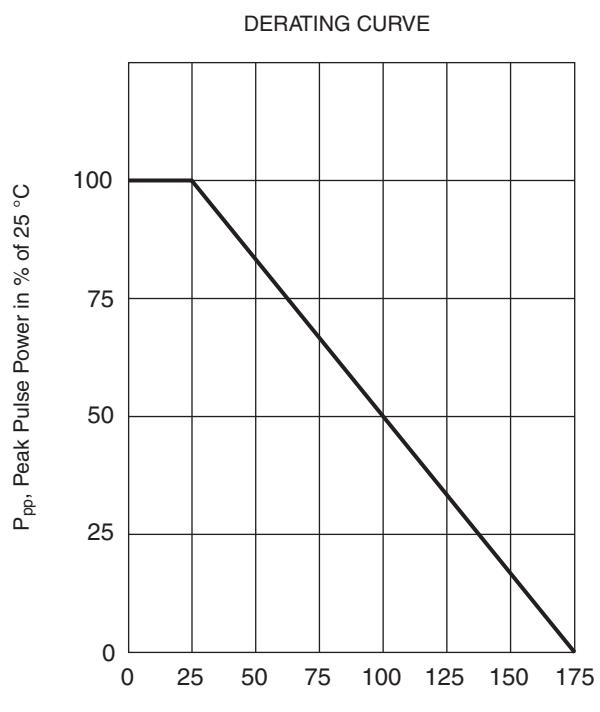
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### Ratings and Characteristics (Ta 25 °C unless otherwise noted)

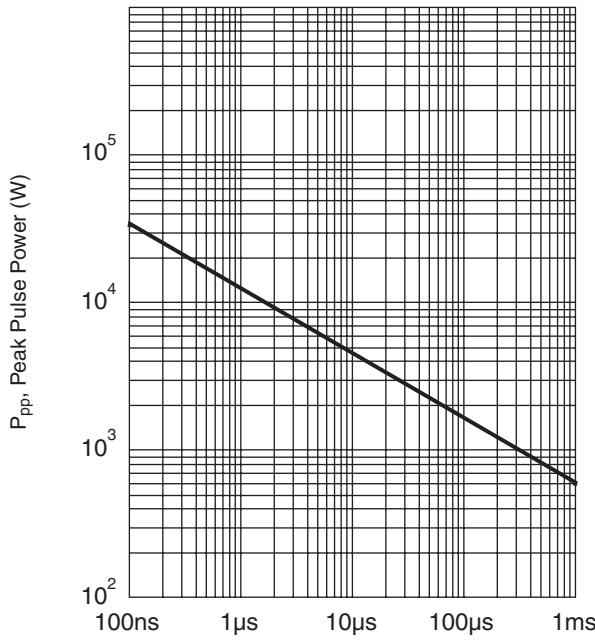


Pulse wave form 10/1000



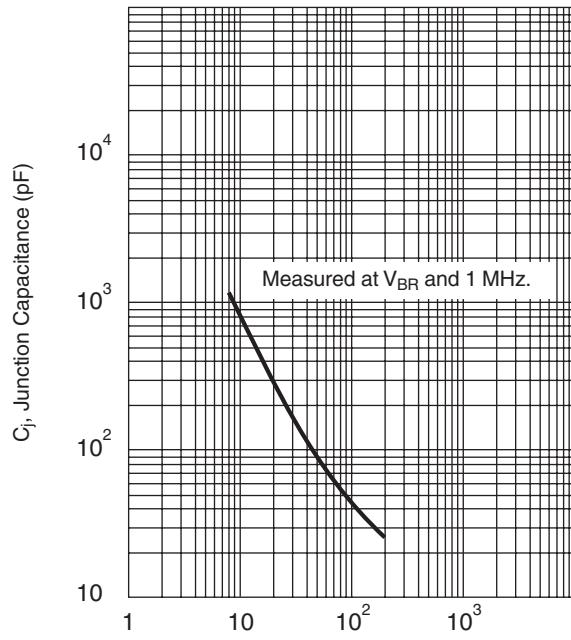
Temperature in (°C)

PEAK PULSE POWER RATING CURVE



Pulse time - t

TYPICAL JUNCTION CAPACITANCE



$V_{BR}$ , Breakdown voltage (V)

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### Revision History

Date	Revision	Description of Changes
10-Oct-2009	0	Original Data Sheet
7-Jul-2016	1	Format updated

## Disclaimer

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