

600W, 13V - 376V Transient Voltage Suppressor

FEATURES

- Excellent clamping capability
- Low dynamic impedance
- 600W surge capability at 10 / 1000 μ s waveform
- Fast response time: Typically less than 1.0ps from 0 volt to V_{BR} for unidirectional and 5.0ns for bidirectional
- Typical I_R less than 1 μ A above 10V
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21



DO-204AC (DO-15)

MECHANICAL DATA

Case: DO-204AC (DO-15)

Molding compound: UL flammability classification rating 94V-0

Part No. with suffix "H" means AEC-Q101 qualified

Packing code with suffix "G" means green compound (halogen-free)

Terminal: Pure tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 2 whisker test

Weight: 0.4g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Peak power dissipation at $T_A=25^\circ\text{C}$, $T_p=1\text{ms}$ (Note 1)	P_{PK}	600	W
Steady state power dissipation at $T_L=75^\circ\text{C}$ lead lengths .375", 9.5mm	P_D	1.7	W
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	100	A
Junction to leads	$R_{\theta JL}$	60	$^\circ\text{C/W}$
Junction to ambient on printed circuit L lead=10mm	$R_{\theta JA}$	100	
Operating junction temperature range	T_J	- 55 to +175	$^\circ\text{C}$
Storage temperature range	T_{STG}	- 55 to +175	$^\circ\text{C}$

Note 1: Non-repetitive current pulse, per fig. 3

ORDERING INFORMATION					
PART NO.	PART NO. SUFFIX	PACKING CODE	PACING CODE SUFFIX	PACKAGE	PACKING
BZW06-xxx (Note 1)	H	A0	G	DO-15	1,500 / Ammo box
		R0		DO-15	3,500 / 13" Paper reel
		B0		DO-15	1,000 / Bulk packing

Note 1: "xxx" defines voltage from 12.8V (BZW06-13) to 376V (BZW06-376)

EXAMPLE					
EXAMPLE PART NO.	PART NO.	PART NO. SUFFIX	PACKING CODE	PACING CODE SUFFIX	DESCRIPTION
BZW06-20HA0G	BZW06-20	H	A0	G	AEC-Q101 qualified Green compound

RATINGS AND CHARACTERISTICS CURVES

($T_A=25^\circ\text{C}$ unless otherwise noted)

FIG. 1 PEAK PULSE POWER RATING CURVE

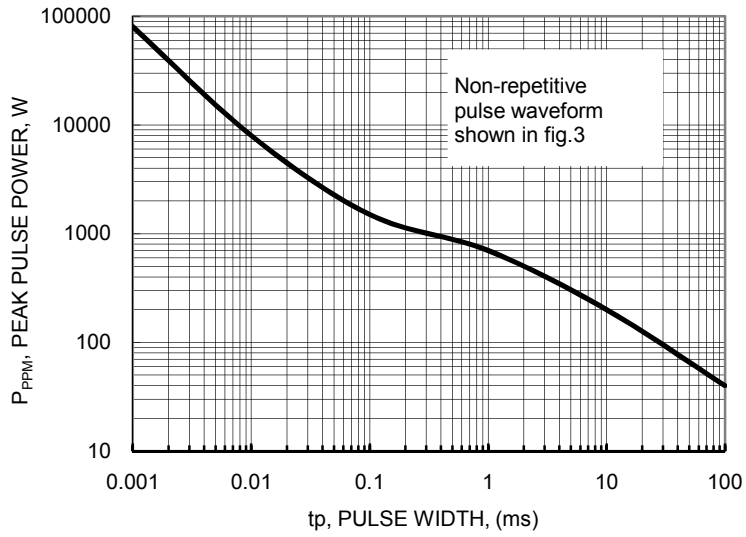


FIG.2 PULSE DERATING CURVE

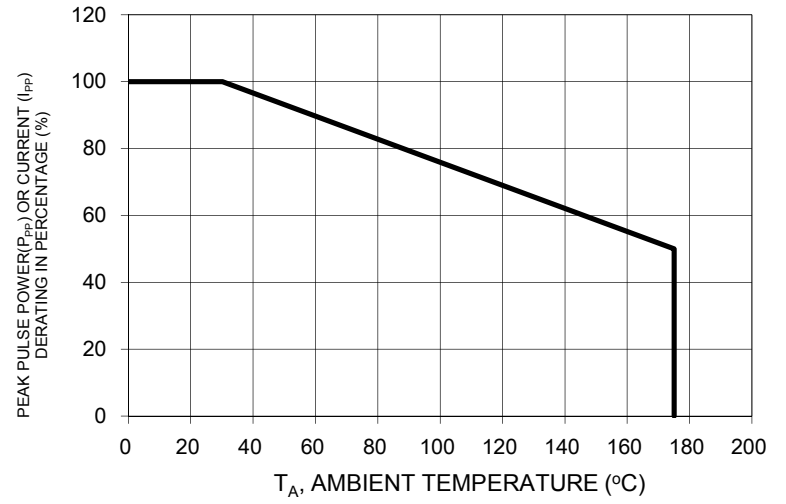


FIG. 3 CLAMPING POWER PULSE WAVEFORM

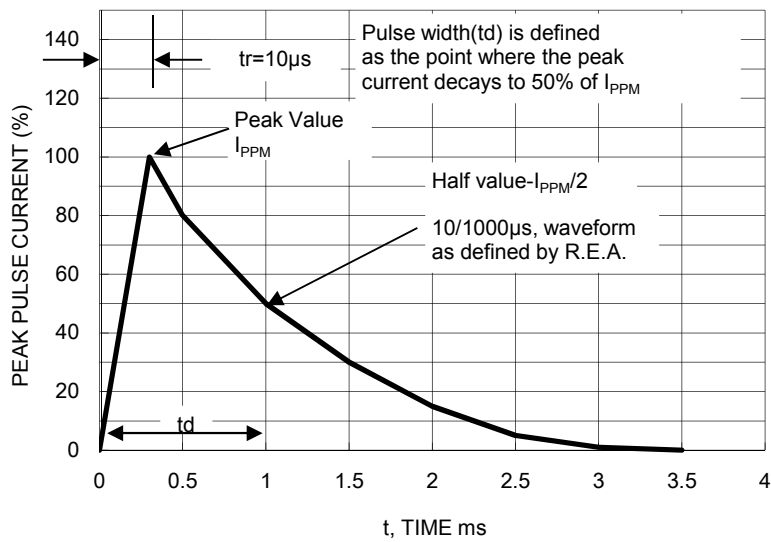


FIG. 4 CLAMPING VOLTAGE CURVE

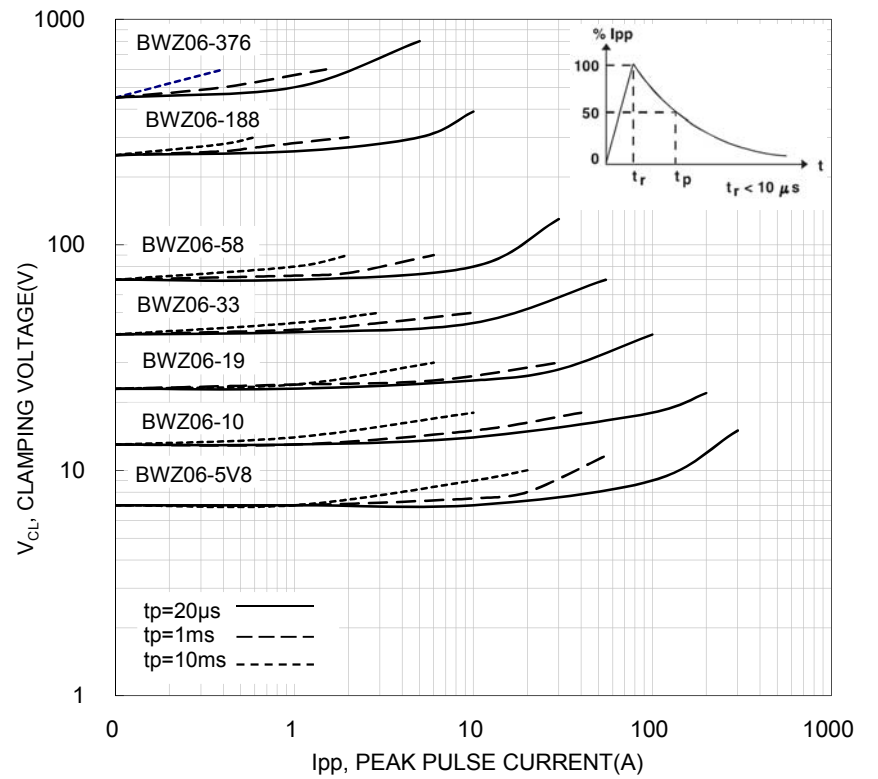


FIG. 5 TYPICAL JUNCTION CAPACITANCE

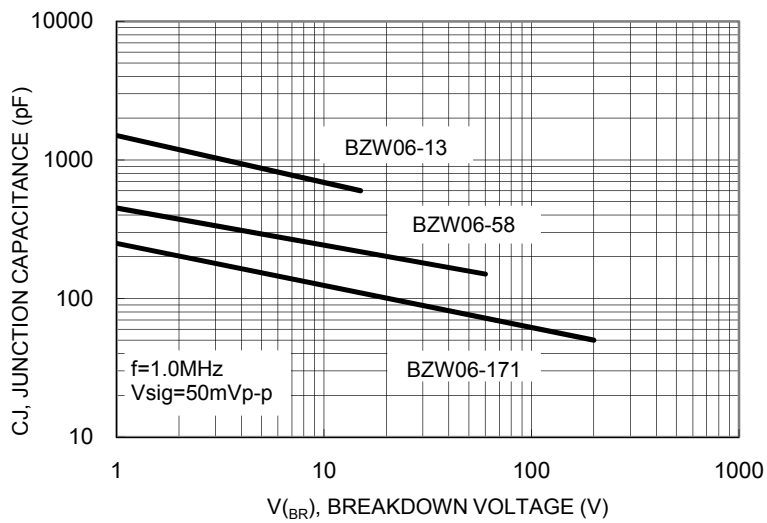


FIG. 6 TYPICAL JUNCTION CAPACITANCE

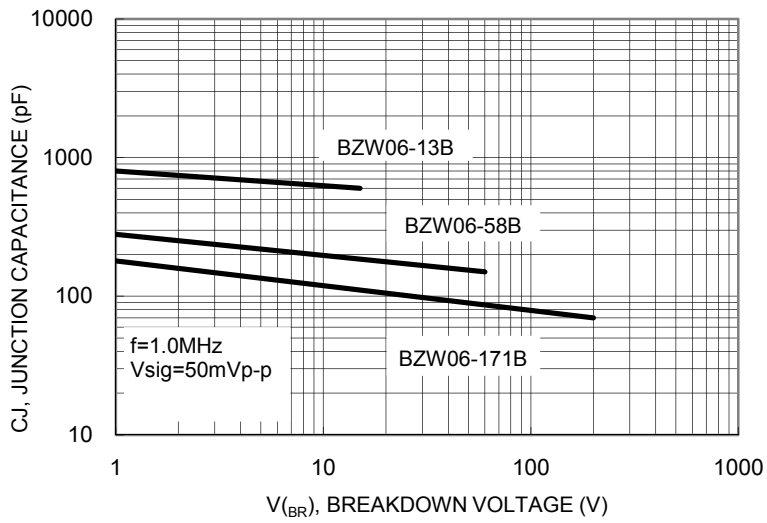


FIG.7 TYPICAL FORWARD CHARACTERISTICS UNIDIRECTIONAL TYPE

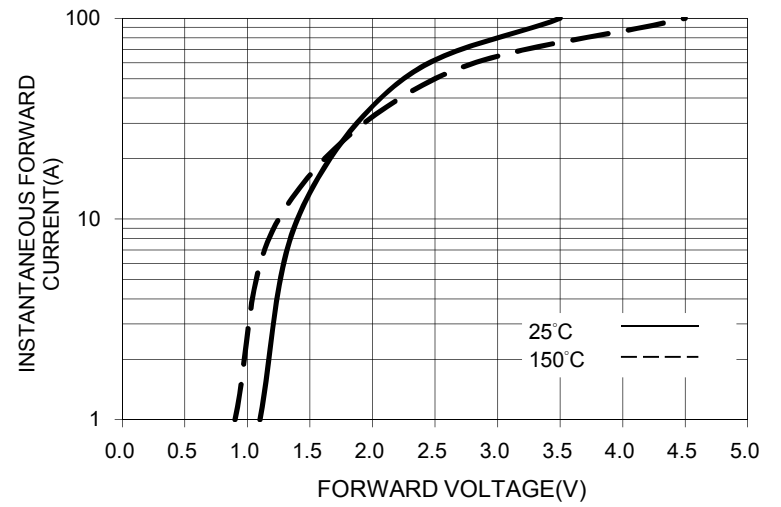


FIG. 8 TYPICAL TRANSIENT THERMAL CHARACTERISTICS

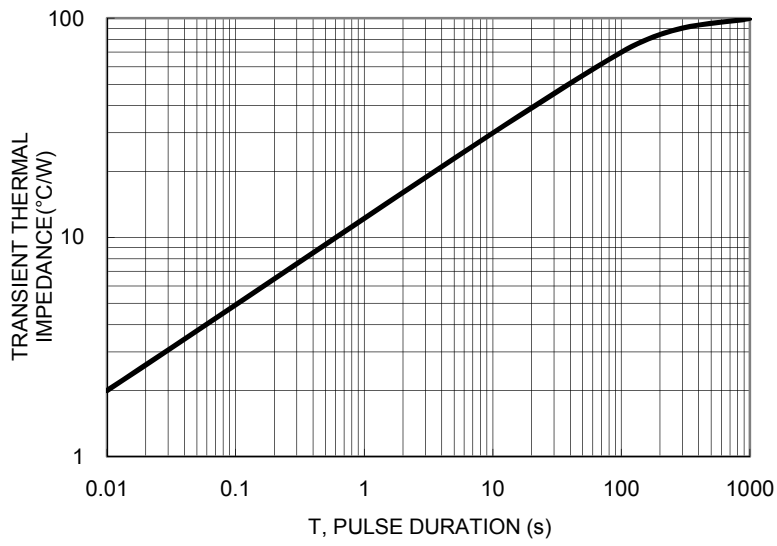
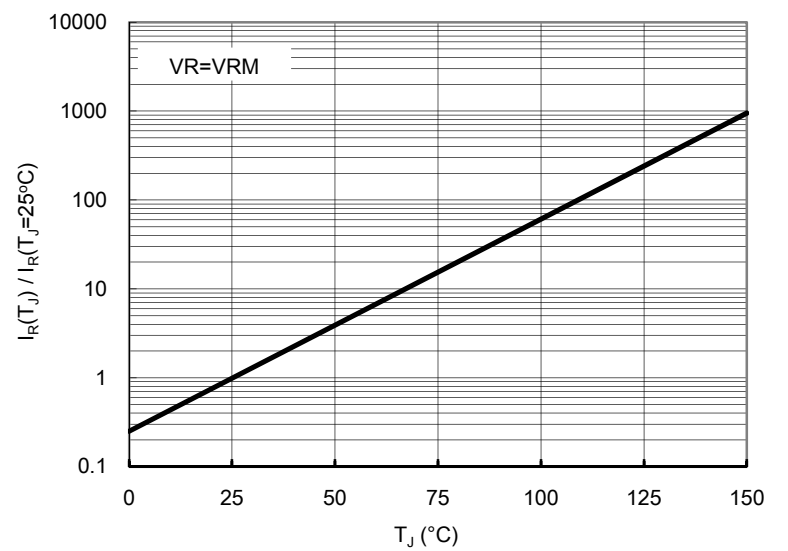


FIG. 9 RELATIVE VARIATION OF LEAKAGE CURRENT vs JUNCTION TEMPERATURE



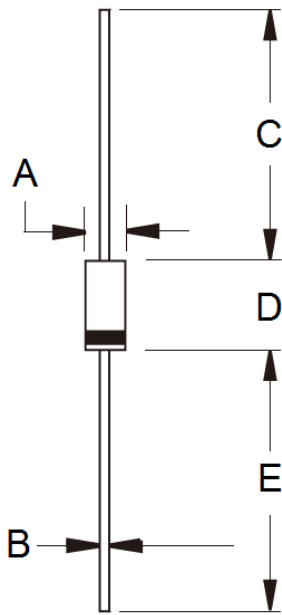
Device		Breakdown Voltage (Note 1)			Test Current	Stand-Off Voltage	Reverse Leakage @ V_{WM}	Clamping Voltage @ I_{PPM} (10/1000 μ s)		Clamping Voltage @ I_{PPM} (8/20 μ s)		Maximum Temperature Coefficient
		V_{BR}						I_T	V_{WM}	I_R	V_C	
		Min	Nom	Max	mA	V	μ A	V	A	V	A	%/ $^{\circ}$ C
Unidirectional	Bidirectional						Max	Max		Max		(Note 2)
BZW06-13	BZW06-13B	14.3	15	15.8	1	12.8	5	21.2	28.0	27.2	147	0.084
BZW06-15	BZW06-15B	17.1	18	18.9	1	15.3	1	25.2	24.0	32.5	123	0.088
BZW06-19	BZW06-19B	20.9	22	23.1	1	18.8	1	30.6	19.6	39.3	102	0.092
BZW06-20	BZW06-20B	22.8	24	25.2	1	20.5	1	33.2	28.0	42.8	93	0.094
BZW06-23	BZW06-23B	25.7	27	28.4	1	23.1	1	37.5	16.0	48.3	83	0.096
BZW06-26	BZW06-26B	28.5	30	31.5	1	25.6	1	41.5	14.5	53.5	75	0.097
BZW06-28	BZW06-28B	31.4	33	34.7	1	28.2	1	45.7	13.1	59.0	68	0.098
BZW06-31	BZW06-31B	34.2	36	37.8	1	30.8	1	49.9	12.0	64.3	62	0.099
BZW06-33	BZW06-33B	37.1	39	47.0	1	33.3	1	53.9	11.1	69.7	57	0.100
BZW06-37	BZW06-37B	40.9	43	45.2	1	36.8	1	59.3	10.1	75.0	52	0.101
BZW06-40	BZW06-40B	44.7	47	49.4	1	40.2	1	64.8	9.3	84.0	48	0.101
BZW06-48	BZW06-48B	53.2	56	58.8	1	47.8	1	77.0	7.8	100	40	0.103
BZW06-58	BZW06-58B	64.6	68	71.4	1	58.1	1	92.0	6.5	121	33	0.104
BZW06-70	BZW06-70B	77.9	82	86.1	1	70.1	1	113	5.3	146	27	0.105
BZW06-85	BZW06-85B	95	100	105	1	85.5	1	137	4.4	178	23	0.106
BZW06-102	BZW06-102B	114	120	126	1	102	1	165	3.6	212	19	0.107
BZW06-128	BZW06-128B	143	150	158	1	128	1	207	2.9	265	15	0.108
BZW06-154	BZW06-154B	171	180	189	1	154	1	246	2.4	317	13	0.108
BZW06-171	BZW06-171B	190	200	210	1	171	1	274	2.2	353	11	0.108
BZW06-188	BZW06-188B	209	220	231	1	188	1	301	2.0	388	10.3	0.108
BZW06-213	BZW06-213B	237	250	263	1	213	1	344	2.0	442	9.0	0.110
BZW06-256	BZW06-256B	285	300	315	1	256	1	414	1.6	529	7.6	0.110
BZW06-273	BZW06-273B	304	320.0	336	1	273	1	438	1.6	564	7.1	0.110
BZW06-299	BZW06-299B	332	350.0	368	1	299	1	482	1.6	618	6.5	0.110
BZW06-342	BZW06-342B	380	400	420	1	342	1	548	1.3	706	5.7	0.110
BZW06-376	BZW06-376B	418	440	462	1	376	1	603	1.3	776	5.7	0.110

Notes:

1. Pulse test : $t_p < 50ms$
2. $\Delta V_{BR} = \alpha T * (T_{amb} - 25) * V_{BR}(25^{\circ}C)$
3. $V_R = 0V$, $F = 1MHz$, For bidirectional types, capacitance value is divided by 2.

PACKAGE OUTLINE DIMENSIONS

DO-204AC (DO-15)



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	2.60	3.60	0.102	0.142
B	0.70	0.90	0.028	0.035
C	25.40	-	1.000	-
D	5.80	7.60	0.228	0.299
E	25.40	-	1.000	-

MARKING DIAGRAM



- P/N = Specific Device Code
- G = Green Compound
- YWW = Date Code
- F = Factory Code

Note: Cathode band for uni-directional products only

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.