600W, 13V - 376V Transient Voltage Suppressor

FEATURES

- Excellent clamping capability
- Low dynamic impedance
- 600W surge capability at 10 / 1000 μs 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 1μA 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)

Pb-Free

RoHS COMPLIANT

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°C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Peak power dissipation at T_A=25°C, Tp=1ms (Note 1)	P_{PK}	600	W
Steady state power dissipation at T_L=75°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	°C/W
Junction to ambient on printed circuit L lead=10mm	$R_{\theta JA}$	100	
Operating junction temperature range	T_J	- 55 to +175	°C
Storage temperature range	T_{STG}	- 55 to +175	°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°C unless otherwise noted)

FIG. 1 PEAK PULSE POWER RATING CURVE

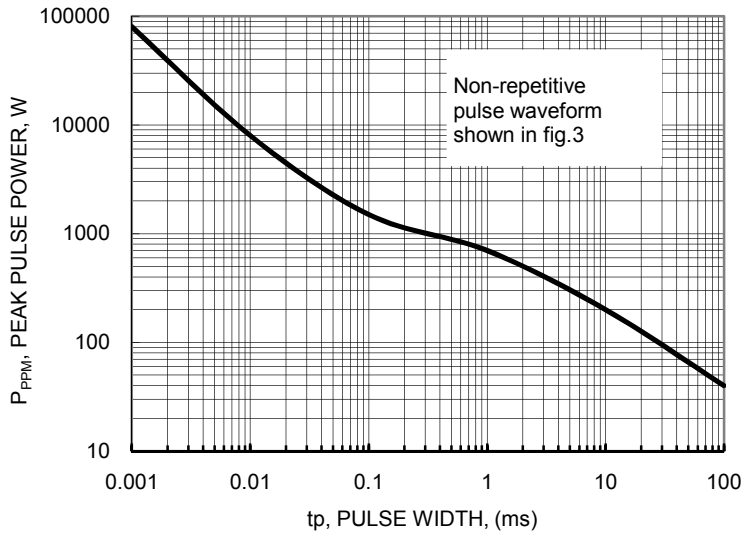


FIG.2 PULSE DERATING CURVE

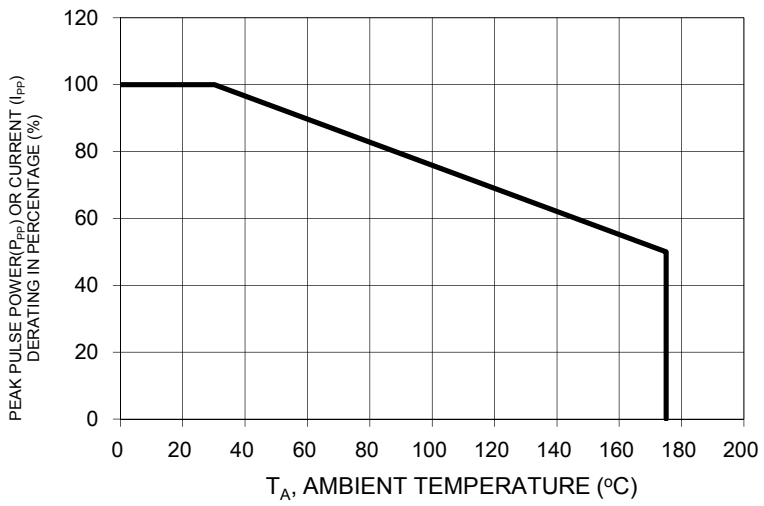


FIG. 3 CLAMPING POWER PULSE WAVEFORM

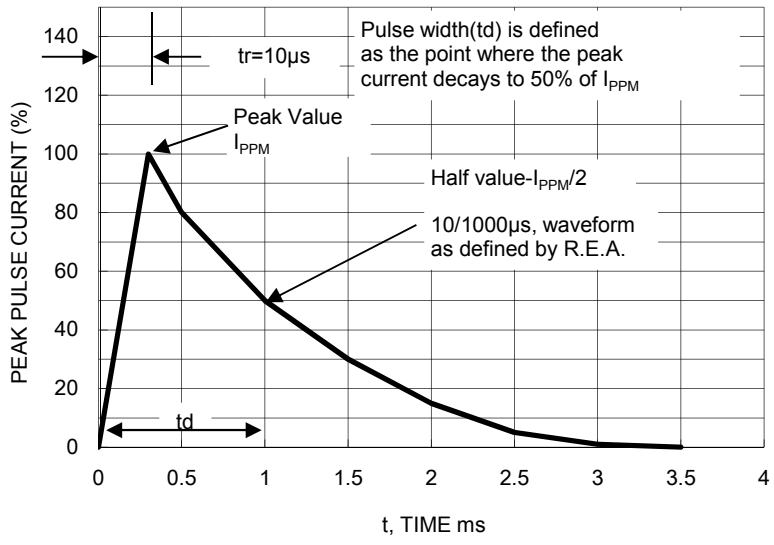


FIG. 4 CLAMPING VOLTAGE CURVE

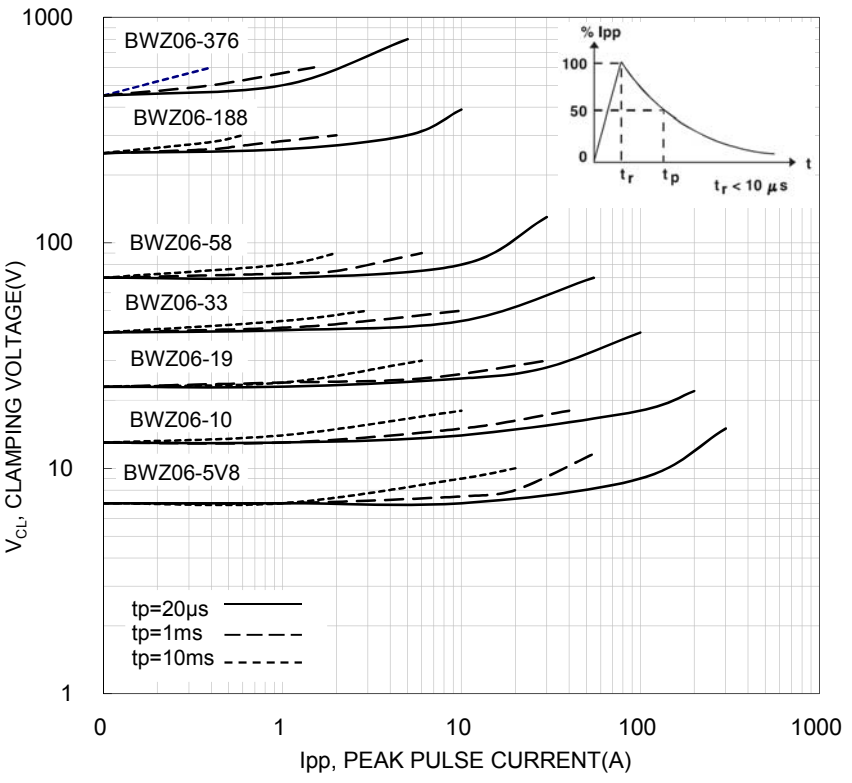


FIG. 5 TYPICAL JUNCTION CAPACITANCE

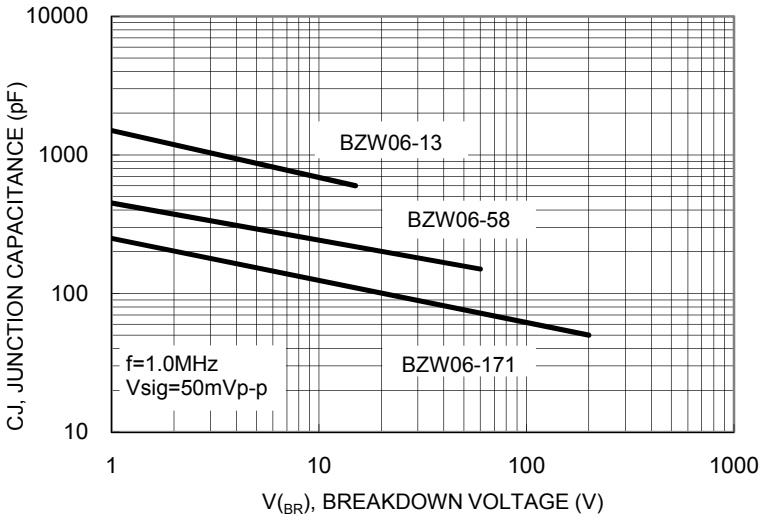


FIG. 6 TYPICAL JUNCTION CAPACITANCE

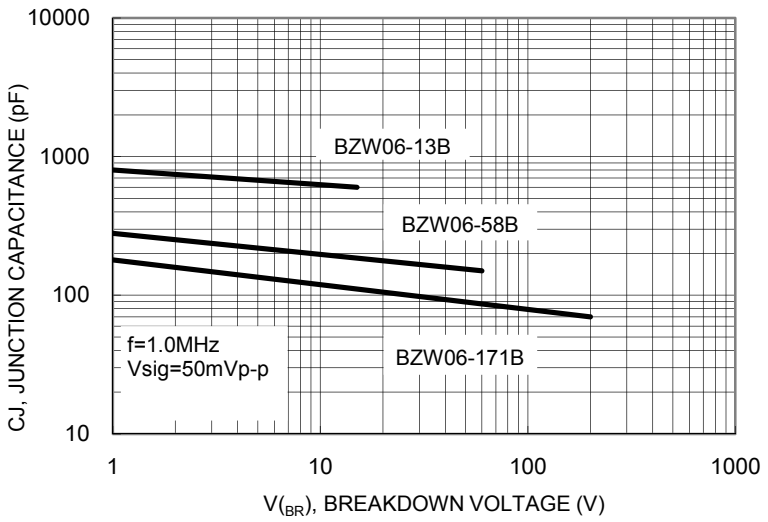


FIG.7 TYPICAL FORWARD CHARACTERISTICS
UNDIRECTIONAL TYPE

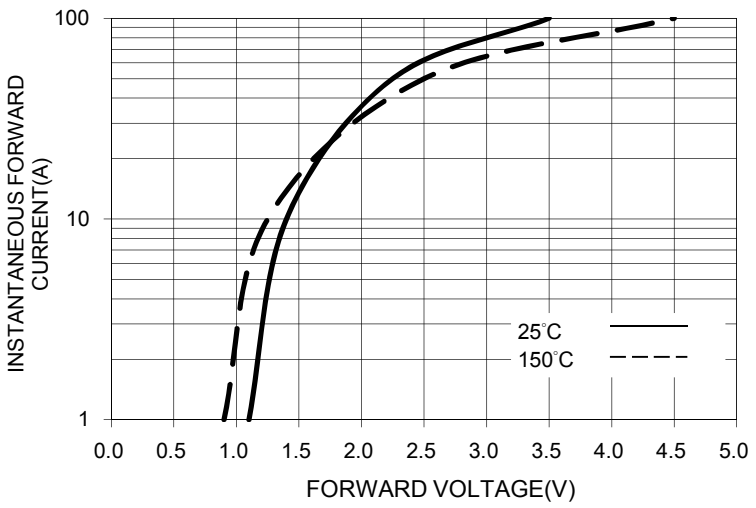


FIG. 8 TYPICAL TRANSIENT THERMAL CHARACTERISTICS

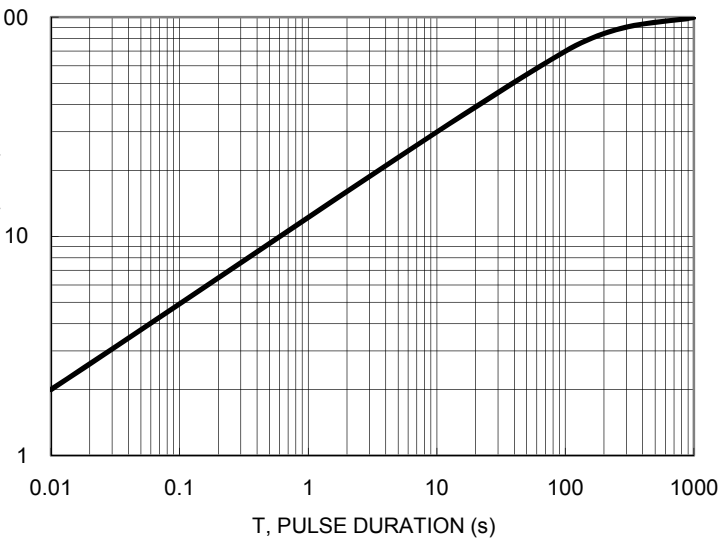
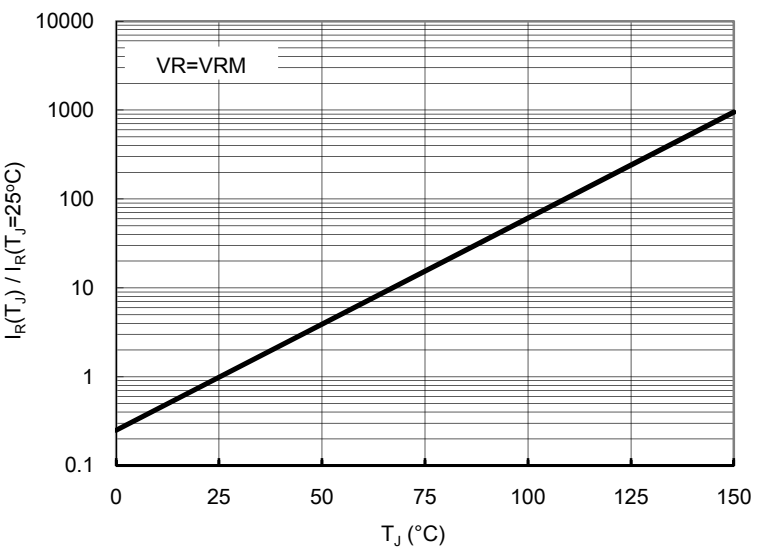


FIG. 9 RELATIVE VARIATION OF LEAKAGE CURRENT vs JUNCTION TEMPERATURE



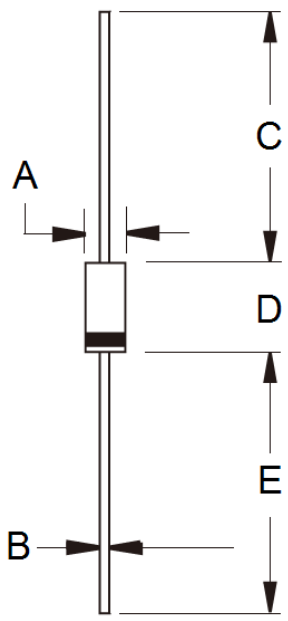
Device		Breakdown Voltage (Note 1)			Test Current	Stand-Off Voltage	Reverse Leakage @ V_{WM}	Clamping Voltage @I_{PPM} (10/1000 μs)		Clamping Voltage @I_{PPM} (8/20 μs)		Maximum Temperature Coefficient
		V_{BR}			I_T	V_{WM}	I_R	Vc	I_{PPM}	Vc	I_{PPM}	V_{BR}
		V			mA	V	μA	V	A	V	A	%/°C
Unidirectional	Bidirectional	Min	Nom	Max			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：tp<50ms
2. $\Delta V_{BR} = \alpha T^*(Tamb - 25) * V_{BR}(25°C)$
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

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Version: J1602

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