1 Characteristics

Table 2: Absolute maximum ratings (T_{amb} = 25 °C)

Symbol	Parameter		Value	Unit
P_{pp}	Peak pulse power	T_j initial = T_{amb}	600	W
P	Power dissipation on infinite heatsink	T_{amb} = 75 °C	1.7	
I_{FSM}	Non repetitive surge peak forward current	t_p = 10 ms T_j initial = T_{amb}	100	A
T_{stg}	Storage junction temperature range		-65 to +175	°C
T_j	Operating junction temperature range		-55 to +175	
T_L	Maximum temperature for soldering during 10 s at 5 mm from case		260	

Figure 1: Electrical characteristics (definitions)

Symbol		Parameter
V_{BR}	=	Breakdown voltage
V_{CL}	=	Clamping voltage
I_{RM}	=	Leakage current
I_F	=	Forward current
I_{PP}	=	Peak pulse current
I_R	=	Breakdown current
V_F	=	Forward voltage drop
C	=	Capacitance
R_d	=	Dynamic impedance
αT	=	Voltage temperature

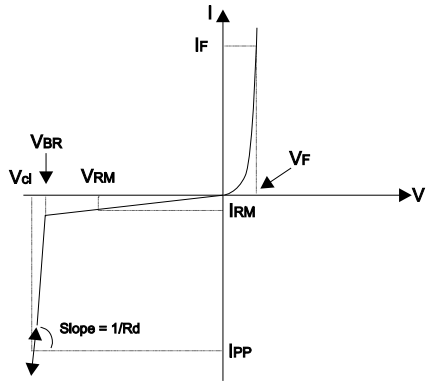


Table 3: Thermal resistances

Symbol	Parameter	Value	Unit
$R_{th(j-l)}$	Junction to leads	60	°C/W
$R_{th(j-a)}$	Junction to ambient on printed circuit. L_{lead} = 10 mm	100	

Table 4: Electrical characteristics (T_{amb} = 25 °C)

Types (marking)		I_{RM} at V_{RM}(1)		V_{BR} at I_R(2)		V_{CL} at I_{PP}		V_{CL} at I_{PP}		αT(3)	C(4)
		Max.		Min.		Max.		Max.		Max.	Typ.
Unidirectional	Bidirectional	µA	V	V	mA	10/1000 µs		8/20 µs		10^{-4}/°C	pF
BZW06-5V8	BZW06-5V8B	20	5.8	6.45	10	10.5	57.0	13.4	298	5.7	4000
BZW06-6V4	BZW06-6V4B	10	6.4	7.13	10	11.3	53.0	14.5	276	6.1	3700
BZW06-8V5	BZW06-8V5B	1	8.5	9.5	1	14.5	41	18.6	215	7.3	2800
BZW06-10	BZW06-10B	0.2	10	11.4	1	16.7	36.0	21.7	184	7.8	2300
BZW06-13	BZW06-13B	0.2	13	14.3	1	21.2	28.0	27.2	147	8.4	1900
BZW06-15	BZW06-15B	0.2	15	17.1	1	25.2	24.0	32.5	123	8.8	1600
BZW06-19	BZW06-19B	0.2	19	20.9	1	30.6	19.6	39.3	102	9.2	1350
BZW06-20	BZW06-20B	0.2	20	22.8	1	33.2	18.0	42.8	93	9.4	1250
BZW06-23	BZW06-23B	0.2	23	25.7	1	37.5	16.0	48.3	83	9.6	1150
BZW06-26	BZW06-26B	0.2	26	28.5	1	41.5	14.5	53.5	75	9.7	1075
BZW06-28	BZW06-28B	0.2	28	31.4	1	45.7	13.1	59	68	9.8	1000
BZW06-31	BZW06-31B	0.2	31	34.2	1	49.9	12.0	64.3	62	9.9	950
BZW06-33	BZW06-33B	0.2	33	37.1	1	53.9	11.1	69.7	57	10.0	900
BZW06-37	BZW06-37B	0.2	36.8	40.9	1	59.3	10.1	76	53	10.1	850
BZW06-40	BZW06-40B	0.2	40	44.7	1	64.8	9.3	84	48	10.1	800
BZW06-48	BZW06-48B	0.2	48	53.2	1	77.0	7.8	100	40	10.3	700
BZW06-58	BZW06-58B	0.2	58	64.6	1	92.0	6.5	121	33	10.4	625
BZW06-70	BZW06-70B	0.2	70	77.9	1	113	5.3	146	27.0	10.5	550
BZW06-85	BZW06-85B	0.2	85	95.0	1	137	4.4	178	22.5	10.6	500
BZW06-102	BZW06-102B	0.2	102	114	1	165	3.6	212	19.0	10.7	450
BZW06-128	BZW06-128B	0.2	128	143	1	207	2.9	265	15.0	10.8	400
BZW06-154	BZW06-154B	0.2	154	171	1	246	2.4	317	12.6	10.8	360
BZW06-171	BZW06-171B	0.2	171	190	1	274	2.2	353	11.3	10.8	350
BZW06-188	BZW06-188B	0.2	188	209	1	328	1.85	388	10.3	10.8	330
BZW06-213	BZW06-213B	0.2	213	237	1	344	1.75	442	9.0	11.0	310
BZW06-256	BZW06-256B	0.2	256	285	1	414	1.45	529	7.6	11.0	290
BZW06-273	BZW06-273B	0.2	273	304	1	438	1.40	564	7.1	11.0	280
BZW06-299	BZW06-299B	0.2	299	332	1	482	1.25	618	6.5	11.0	271
BZW06-342	BZW06-342B	0.2	342	380	1	548	1.1	706	5.7	11.0	360
BZW06-376	BZW06-376B	0.2	376	418	1	603	1	776	5.7	11.0	350

Notes:

(1)For bidirectional types having $V_{RM} \leq 10$ V, I_{RM} is multiplied by 2

(2)Pulse test : $t_p < 50$ ms

(3)To calculate V_{BR} or V_{CL} versus junction temperature, use the following formulas:
V_{BR} at $T_j = V_{BR}$ at 25 °C x (1 + αT x (T_j - 25)) or V_{CL} at $T_j = V_{CL}$ at 25 °C x (1 + αT x (T_j - 25))

(4)V_R = 0 V, F = 1 MHz. For bidirectional types, capacitance value is divided by 2

1.1 Characteristics (curves)

Figure 2: Pulse waveform (10/1000 µs)

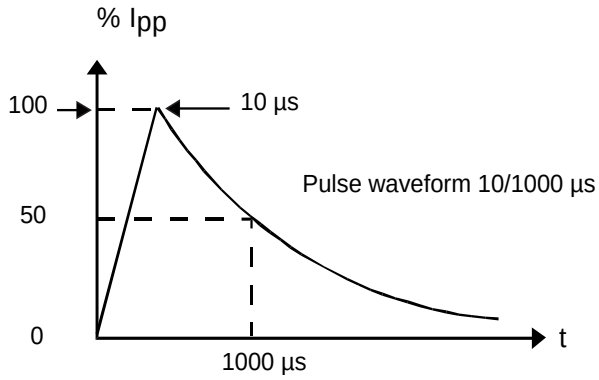


Figure 3: Peak pulse power dissipation versus initial junction temperature

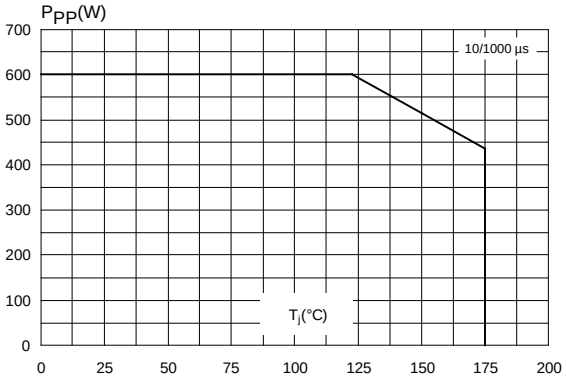


Figure 4: Peak pulse power versus exponential pulse duration

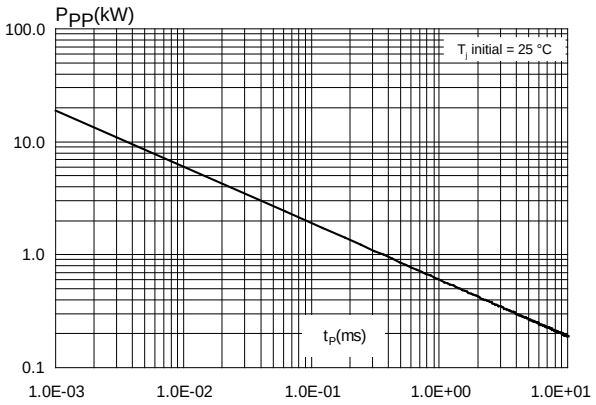


Figure 5: Clamping voltage versus peak pulse current (maximum values).

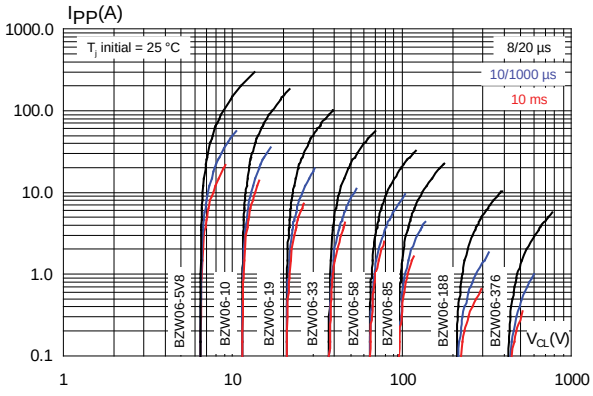


Figure 6: Junction capacitance versus reverse applied voltage (unidirectional types)

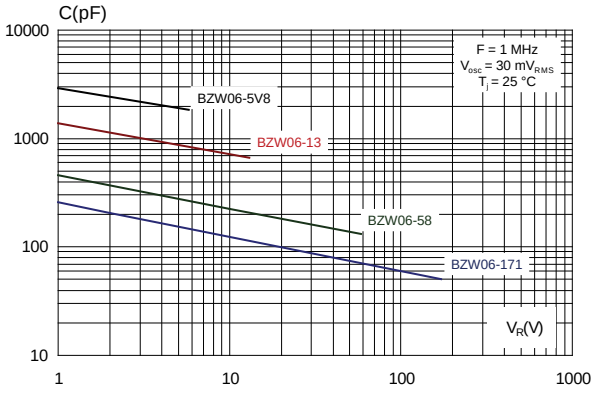


Figure 7: Junction capacitance versus reverse applied voltage (bidirectional types)

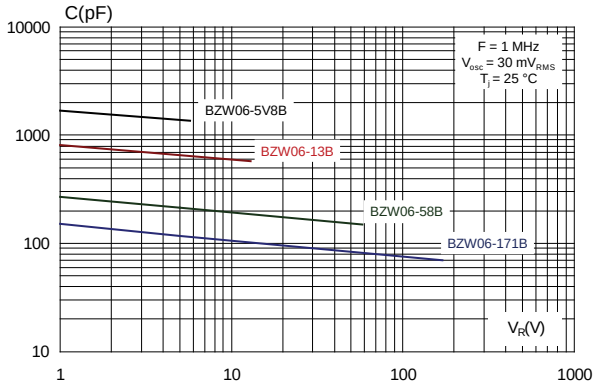


Figure 8: Peak forward voltage drop versus peak forward current

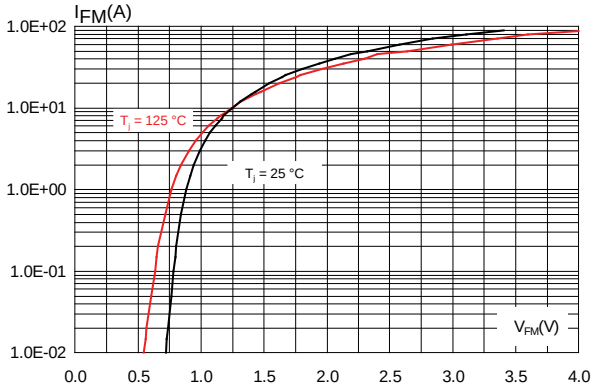


Figure 9: Relative variation of thermal impedance junction to ambient versus pulse duration (printed circuit board FR4, e_{CU} = 35 µm)

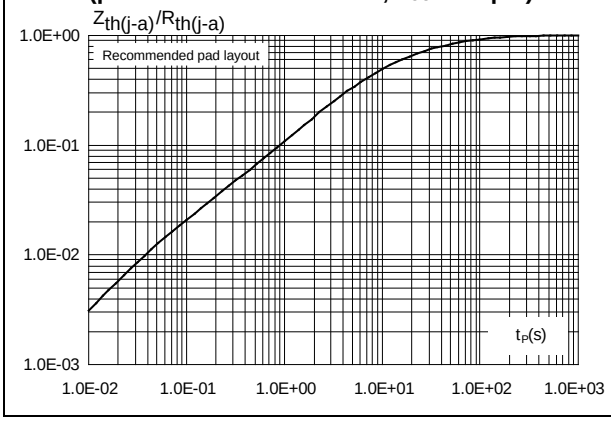
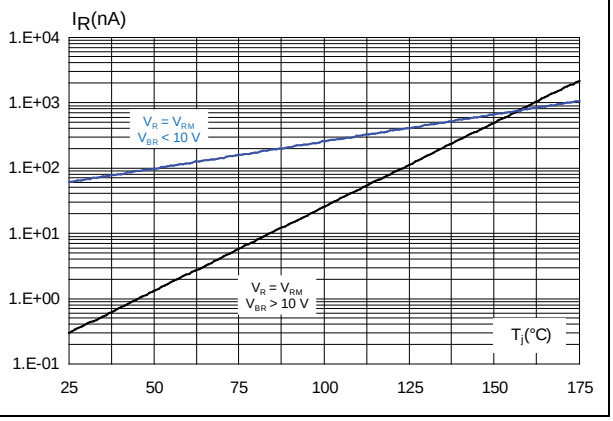


Figure 10: Leakage current versus junction temperature



2 Package information

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2.1 DO-15 package information

Figure 11: DO-15 package outline

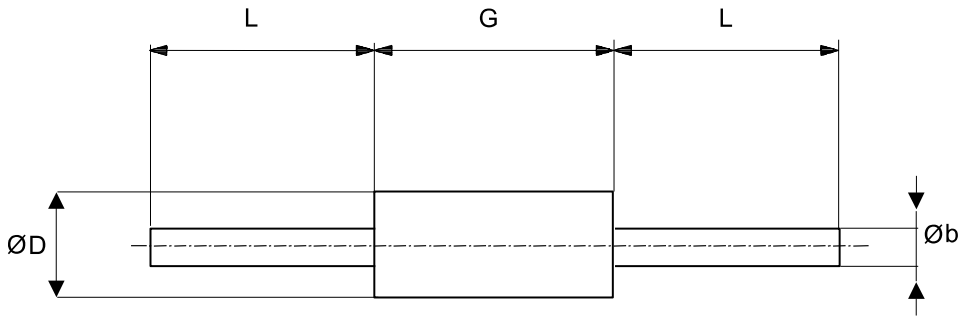

Table 5: DO-15 package mechanical data

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
b	0.71	-	0.88	0.028	-	0.035
D	2.95	-	3.53	0.116	-	0.139
G	6.05	-	6.75	0.238	-	0.266
L	26	-	31	1.024	-	1.22

3 Ordering information

Figure 12: Ordering information scheme

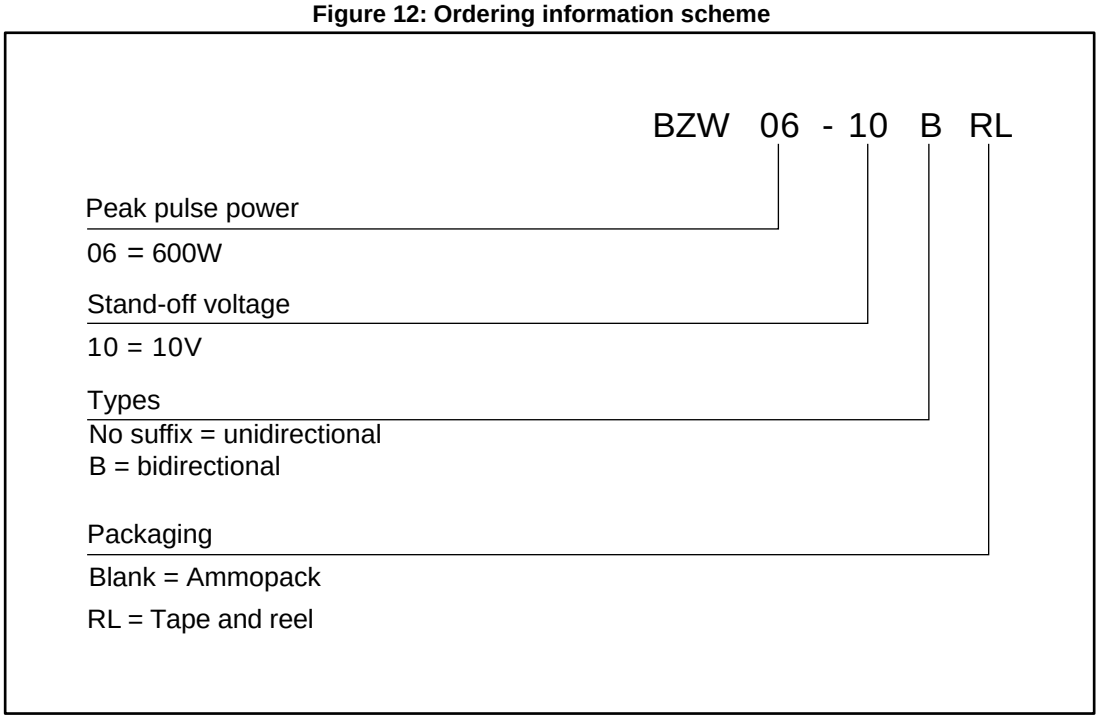

Table 6: Ordering information

Order code	Marking(1)	Package	Weight	Base qty.	Delivery mode
BZW-06xxxx	See *Table 4*	DO-15	0.4 g	1000	Ammopack
BZW-06xxxxRL				6000	Tape and reel

Notes:

(1)Marking: logo, data code, type, cathode band (for unidirectional types only)

4 Revision history

Table 7: Document revision history

Date	Revision	Changes
Feb-2003	3A	Last update.
06-Apr-2017	4	Updated *Table 2: "Absolute maximum ratings (Tamb = 25 °C)"*, *Table 4: "Electrical characteristics (Tamb = 25 °C)"*, *Section 5.1: "Characteristics (curves)"* and *Section 6.1: "DO-15 package information"*.

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