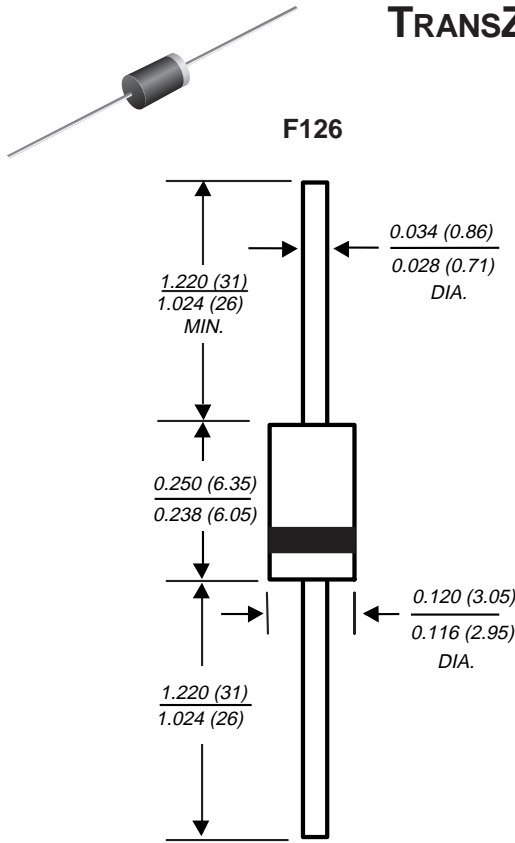


# TRANSZORB® Transient Voltage Suppressors

Stand Off Voltage 5.8 to 376V  
Peak Pulse Power 600W



Dimensions in inches and (millimeters)

## Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction
- Uni and Bidirectional Types Available
- Excellent Clamping Capability
- Low incremental surge resistance
- Fast response time: theoretically (with no parasitic inductance) less than 1.0ps from 0 Volts to  $V_{(BR)}$  for unidirectional and 5.0ns for bidirectional types
- High temperature soldering guaranteed: 265°C/10 seconds, 0.375" (9.5mm) lead length, 5lbs. (2.3 kg) tension

## Mechanical Data

**Case:** F126 molded plastic body over passivated junction

**Terminals:** Solder plated axial leads, solderable per MIL-STD-750, Method 2026

**Polarity:** For unidirectional types the color band denotes the cathode, which is positive with respect to the anode under normal TVS operation

**Mounting Position:** Any **Weight:** 0.015 oz., 0.4 g

**Packaging Codes – Options (Antistatic):**

- 51 – 1K per Bulk box, 10K/carton
- 54 – 4K per 13" paper Reel (52mm horiz. tape), 12K/carton
- 73 – 2K per horiz. tape & Ammo box, 20K/carton

## Devices for Bidirectional Applications

For bi-directional use add suffix letter "B" (e.g. BZW06P-6V4B).  
Electrical characteristics apply in both directions.

## Maximum Ratings and Thermal Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000µs waveform <sup>(1)</sup> (Fig. 1)	P <sub>PPM</sub>	600	W
Peak pulse current with a 10/1000µs waveform <sup>(1)</sup>	I <sub>PPM</sub>	See Next Table	A
Steady state power dissipation at T <sub>A</sub> = 75°C lead lengths, 0.375" (9.5mm) <sup>(2)</sup>	P <sub>M(AV)</sub>	3.0	W
Peak forward surge current, 10ms single half sine-wave unidirectional only	I <sub>FSM</sub>	100	A
Thermal Resistance junction to lead	R <sub>θJL</sub>	60	°C/W
junction to ambient L <sub>lead</sub> = 10mm	R <sub>θJA</sub>	100	
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +175	°C

**Notes:** (1) Non-repetitive current pulse, per Fig. 3 and derated above T<sub>A</sub> = 25°C per Fig. 2  
Rating is 500W between 40V and 188V types. For a surge greater than the maximum values, the diode will short circuit.  
(2) Mounted on copper pad area of 1.6 x 1.6" (40 x 40mm) per Fig. 5

# BZW06 Series

Vishay Semiconductors  
formerly General Semiconductor



## Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

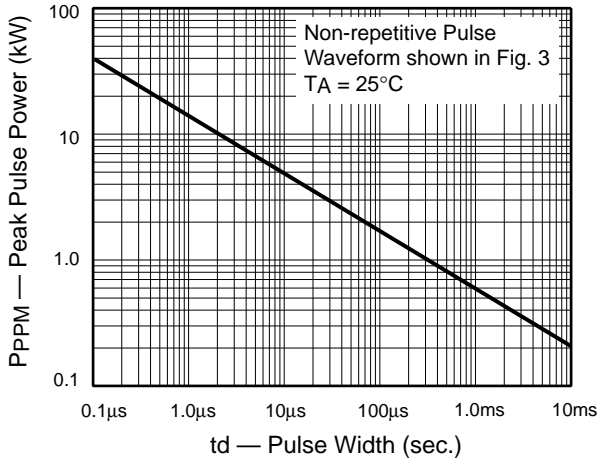
Part Number		I <sub>D</sub> @ V <sub>WM</sub> (max)		V <sub>(BR)</sub> @ I <sub>T</sub> (min) <sup>(1)</sup>		V <sub>C</sub> @ I <sub>PP</sub> (max) 10/1000μs		V <sub>C</sub> @ I <sub>PP</sub> (max) 8/20μs		Max. Temp. Coefficient of V <sub>(BR)</sub> <sup>(2)</sup>	Typical Capacitance C <sup>(3)</sup>
		μA	V	V	mA	V	A	V	A		
BZW06-5V8	BZW06-5V8B	1000	5.8	6.45	10	10.5	57.0	13.4	298	0.057	4000
BZW06-6V4	BZW06-6V4B	500	6.4	7.13	10	11.3	53.0	14.5	276	0.061	3700
BZW06-8V5	BZW06-8V5B	10	8.5	9.50	1	14.5	41.0	18.6	215	0.073	2800
BZW06-10	BZW06-10B	5	10.2	11.4	1	16.7	36.0	21.7	184	0.078	2300
BZW06-13	BZW06-13B	5	12.8	14.3	1	21.2	28.0	27.2	147	0.084	1900
BZW06-15	BZW06-15B	1	15.3	17.1	1	25.2	24.0	32.5	123	0.088	1600
BZW06-19	BZW06-19B	1	18.8	20.9	1	30.6	19.6	39.3	102	0.092	1350
BZW06-20	BZW06-20B	1	20.5	22.8	1	33.2	18.0	42.8	93.0	0.094	1250
BZW06-23	BZW06-23B	1	23.1	25.7	1	37.5	16.0	48.3	83.0	0.096	1150
BZW06-26	BZW06-26B	1	25.6	28.5	1	41.5	14.5	53.5	75.0	0.097	1075
BZW06-28	BZW06-28B	1	28.2	31.4	1	45.7	13.1	59.0	68.0	0.098	1000
BZW06-31	BZW06-31B	1	30.8	34.2	1	49.9	12.0	64.3	62.0	0.099	950
BZW06-33	BZW06-33B	1	33.3	37.1	1	53.9	11.1	69.7	57.0	0.100	900
BZW06-40	BZW06-40B	1	40.2	44.7	1	64.8	9.3	84.0	48.0	0.101	800
BZW06-48	BZW06-48B	1	47.8	53.2	1	77.0	6.5	100	40.0	0.103	700
BZW06-58	BZW06-58B	1	58.1	64.6	1	92.0	5.4	121	33.0	0.104	625
BZW06-70	BZW06-70B	1	70.1	77.9	1	113	4.4	146	27.0	0.105	550
BZW06-85	BZW06-85B	1	85.5	95.0	1	137	3.6	178	22.5	0.106	500
BZW06-102	BZW06-102B	1	102	114	1	165	3.0	212	19.0	0.107	450
BZW06-128	BZW06-128B	1	128	143	1	207	2.4	265	15.0	0.108	400
BZW06-154	BZW06-154B	1	154	171	1	246	2.0	317	12.6	0.108	360
BZW06-171	BZW06-171B	1	171	190	1	274	1.8	353	11.3	0.108	350
BZW06-188	BZW06-188B	1	188	209	1	328	1.5	388	10.3	0.108	330
BZW06-213	BZW06-213B	1	213	237	1	344	1.7	442	9.0	0.110	310
BZW06-256	BZW06-256B	1	256	285	1	414	1.4	529	7.6	0.110	290
BZW06-273	BZW06-273B	1	273	304	1	438	1.4	564	7.1	0.110	280
BZW06-299	BZW06-299B	1	299	332	1	482	1.2	618	6.5	0.110	270
BZW06-342	BZW06-342B	1	342	380	1	548	1.1	706	5.7	0.110	360
BZW06-376	BZW06-376B	1	376	418	1	603	1.0	776	5.7	0.100	350

**Notes:**

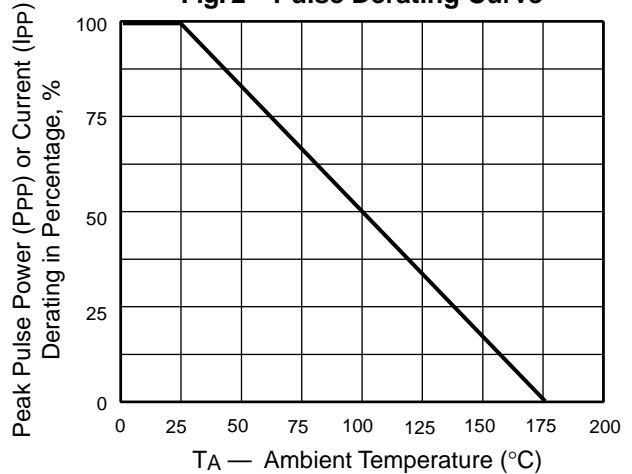
- (1) Pulse Test: t<sub>p</sub> < 50ms
- (2)  $\Delta V_{(BR)} = \alpha T * (T_A - 25) * V_{(BR)} (25^\circ C)$
- (3) V<sub>R</sub> = 0 V, f = 1 MHz. For Bidirectional types, capacitance value is divided by 2

## Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

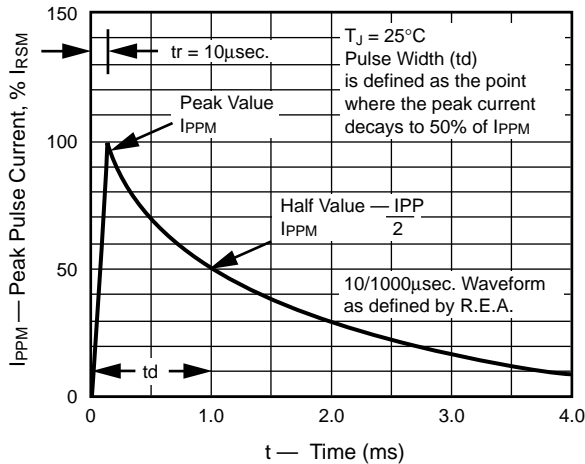
**Fig. 1 – Peak Pulse Power Rating Curve**



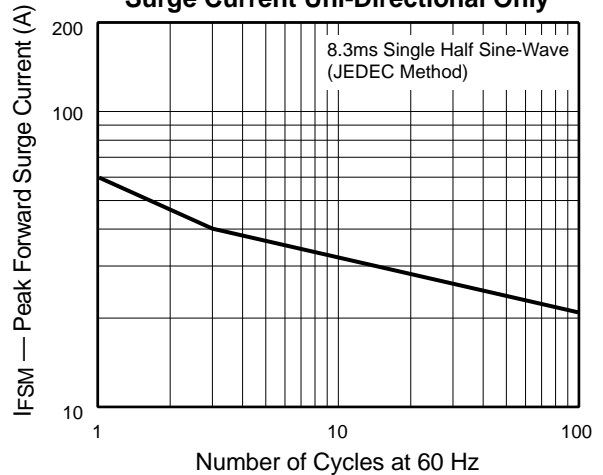
**Fig. 2 – Pulse Derating Curve**



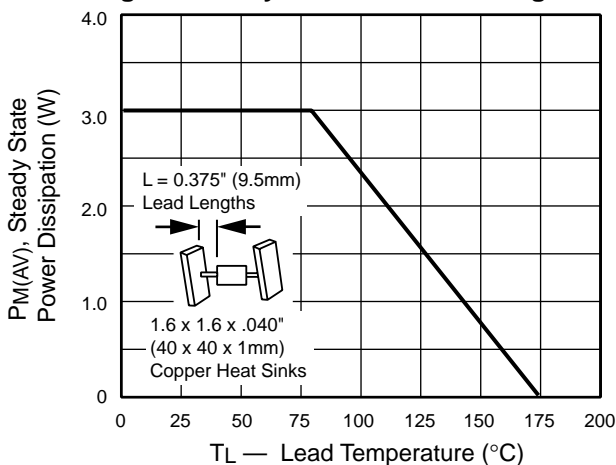
**Fig. 3 – Pulse Waveform**



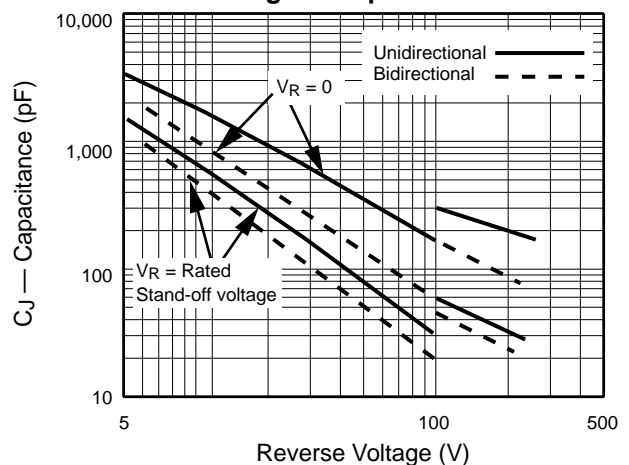
**Fig. 4 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only**



**Fig. 5 – Steady State Power Derating Curve**



**Fig. 6 – Capacitance**





## Disclaimer

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