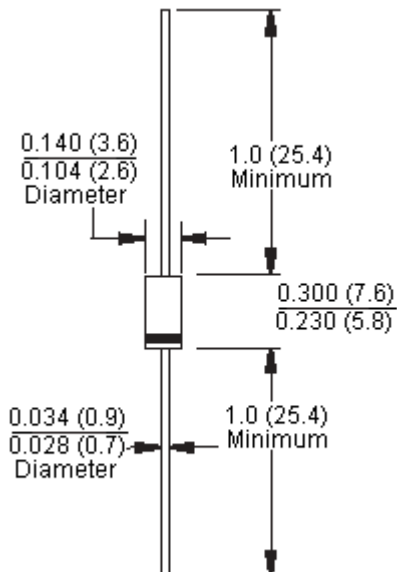




## Features:

- Plastic package.
- Exceeds environmental standards of MIL-STD-19500.
- 600W surge capability at 10 x 1000 $\mu$ s waveform, duty cycle: 0.01%.
- Excellent clamping capability.
- Low zener impedance.
- Fast response time: typically less than 1.0ps from 0 volts to VBR for unidirectional and 5.0ns for bidirectional.
- Typical  $I_R$  less than 1 $\mu$ A above 10V.
- High temperature soldering guaranteed: 260°C/10 seconds/0.375 Inch (9.5mm) lead length/5lbs. (2.3kg) tension.

## DO-15



Dimensions : Inches (Millimetres)

## Mechanical Data

Case : Molded plastic.  
Lead : Axial leads, solderable per MIL-STD-202, Method 208.  
Polarity : Color band denotes cathode except bipolar.  
Weight : 0.34 gram.

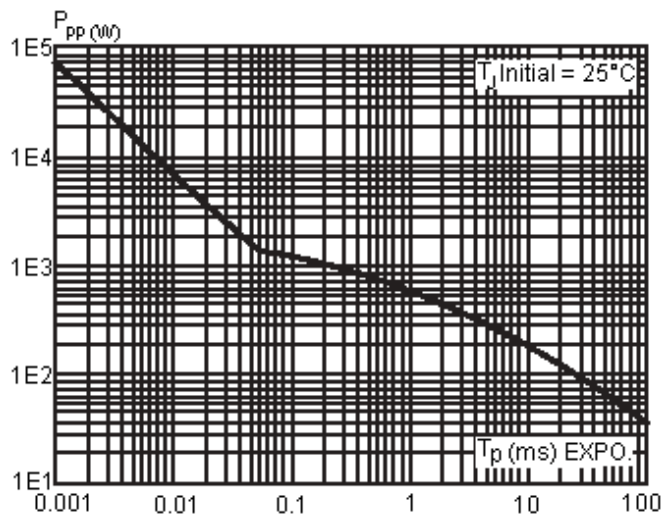
## Maximum Ratings and Electrical Characteristics ( $T_A = 25^\circ\text{C}$ )

Type Number	Symbol	Value	Units
Peak Pulse Power Dissipation at $T_A = 25^\circ\text{C}$ , $T_p = 1\text{ms}$ (Note)	$P_{PP}$	Minimum 600	Watts
Steady State Power Dissipation at $T_L = 75^\circ\text{C}$ Lead Lengths 0.375 Inch 9.5mm	$P_D$	1.7	
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	$I_{FSM}$	100	Amps
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 and Storage Temperature Range	$T_J, T_{STG}$	-65 to + 175	$^\circ\text{C}$

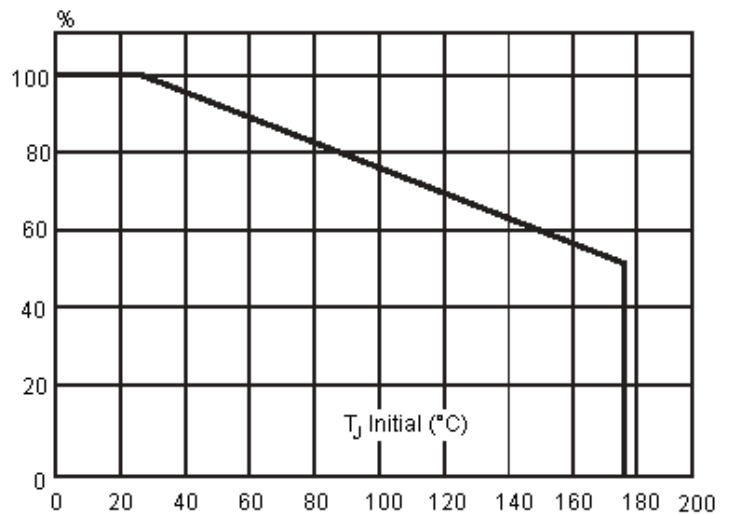
Notes: For a surge greater than the maximum values, the diode will fall in short-circuit.

## Ratings and Characteristic Curves

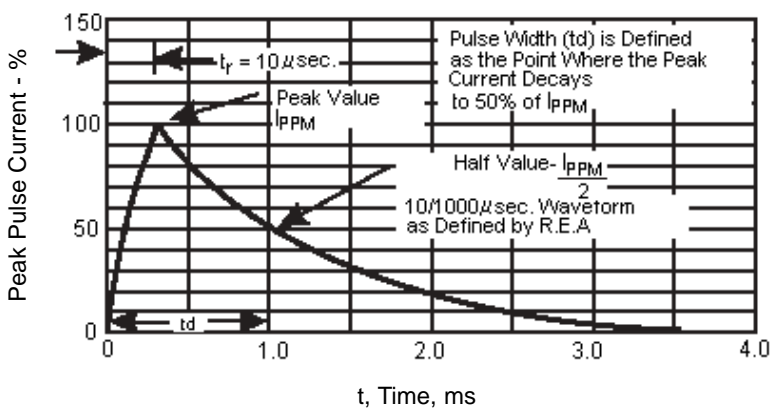
Peak Pulse Power Versus Exponential Pulse Duration



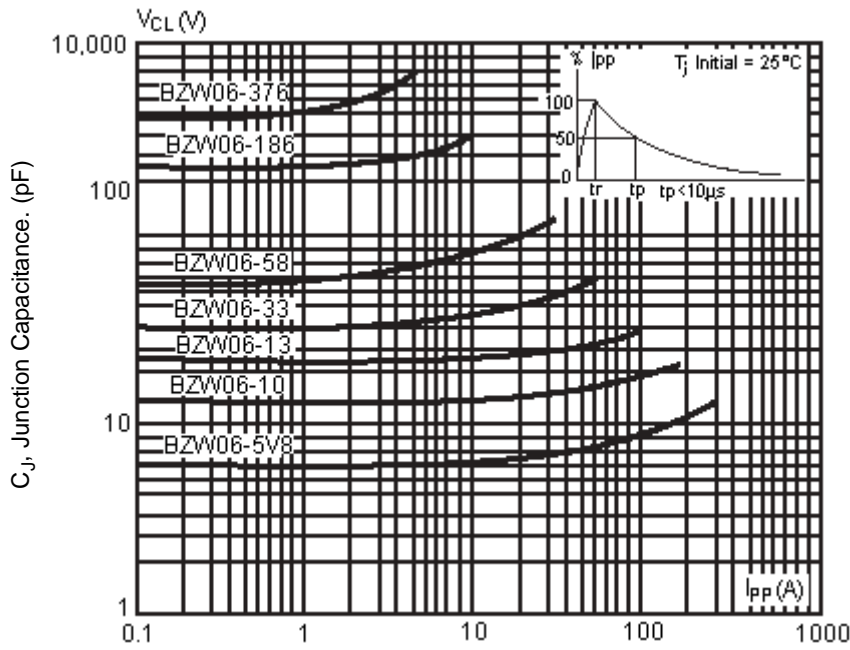
Peak Pulse Power Dissipation Versus Initial Junction Temperature (Printed Circuit Board)



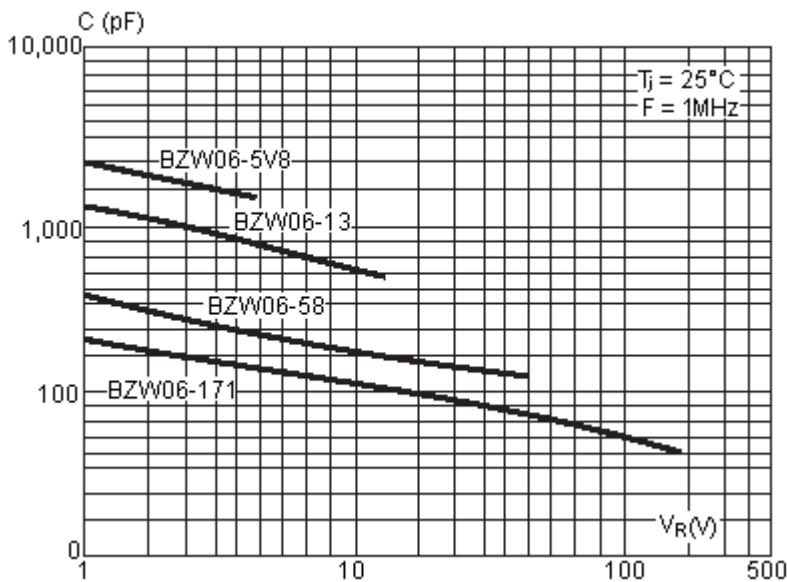
Pulse Waveform



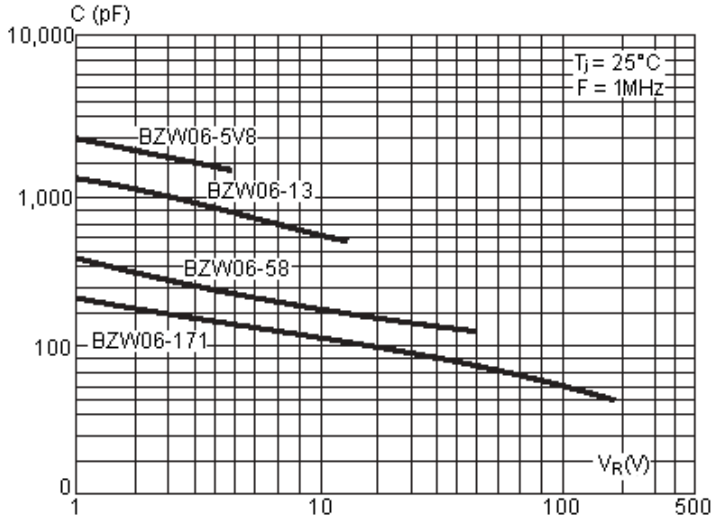
**Clamping Voltage Versus Peak Pulse Current**  
**Exponential Waveform  $t_p=200\mu s$**   
 $t_p=1ms$   
 $t_p=10m$



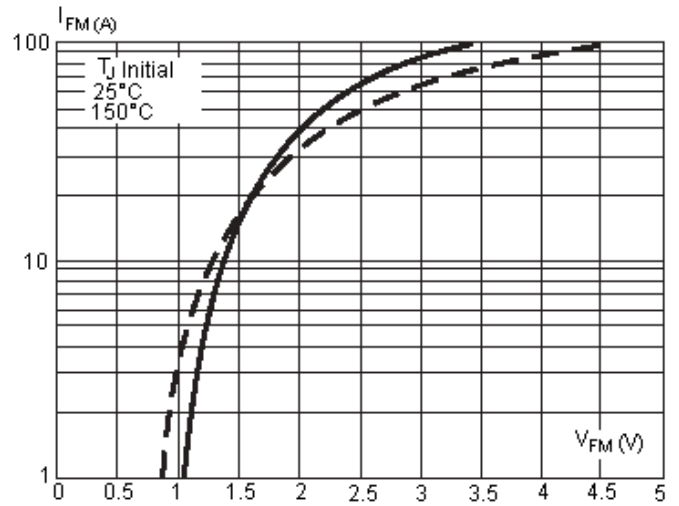
**Characteristics Versus Reverse Applied Voltage for Unidirectional Types**  
**(Typical Values)**



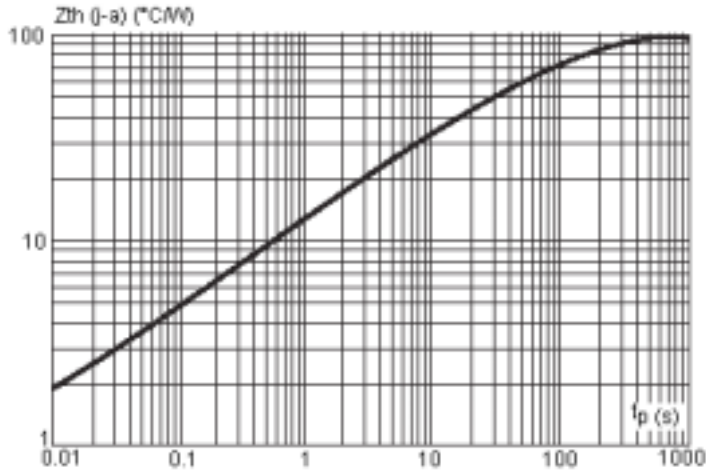
**Characteristics Versus Reverse Applied Voltage for Unidirectional Types (Typical Values)**



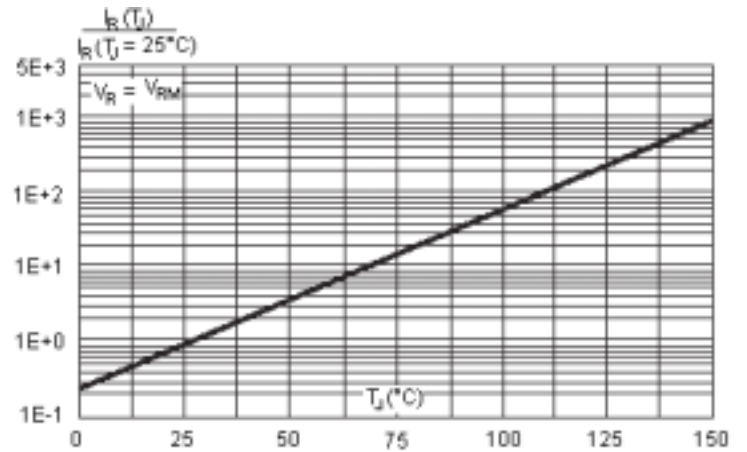
**Peak Forward Voltage Drop Versus Peak Forward Current (Typical Values for Unidirectional Types)**



**Transient Thermal Impedance Junction Ambient Versus Pulse Duration (For FR4 PC Board With L Lead = 10mm)**



**Relative Variation of Leakage Current Versus Junction Temperature**



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

Device		$I_{RM}$ at $V_{RM}$		$V_{BR}$ at $I_R$				$V_{CL}$ at $I_{PP}$		$V_{CL}$ at $I_{PP}$		$\alpha T$	C
		Maximum		Note1				Maximum		Maximum		Maximum	Typical
		$\mu\text{A}$	V	Minimum	Nominal	Maximum	mA	10/1000 $\mu\text{s}$		8/20 $\mu\text{S}$		Note2	Note3
Unidirectional	Bidirectional			V	V	V		V	A	V	A	$10^{-4}/^\circ\text{C}$	(pF)
-	BZW06-102B	1	102	114	120	126	1	165	3.6	212	19	10.7	450
BZW06-13	BZW06-13B	5	12.8	14.3	15.0	15.8		21.2	28	27.2	147	8.4	1900
BZW06-15	BZW06-15B	1	15.3	17.1	18.0	18.9		25.2	24	32.5	123	8.8	1600
BZW06-20	BZW06-20B		20.5	22.8	24.0	25.2		33.2	28.0	42.8	93	9.4	1250
BZW06-31	BZW06-31B		30.8	34.2	36.0	37.8		49.9	12.0	64.3	62	9.6	950
BZW06-33	BZW06-33B		33.3	37.1	39.0	41.0		53.9	11.1	69.7	57	10.0	900

Notes: 1. Pulse test:  $t_p < 50\text{ms}$ .

2.  $\Delta V_{BR} = \alpha T (T_{amb} - 25) * V_{BR} (25^\circ\text{C})$ .

3.  $V_R = 0\text{V}$ ,  $F = 1\text{MHz}$ , For bidirectional types, capacitance value is divided by 2.

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