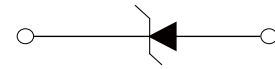


## FEATURES

- | Extremely Small DFN1006 Package
- | Planar Die Construction
- | 200mW Power Dissipation
- | Zener Voltages from 2.4V-75V



DFN1006



Schematic Symbol

## APPROVALS

<b>RoHS</b>	Compliance with 2011/65/EU
<b>HF</b>	Compliance with IEC61249-2-21:2003

## MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ )

Parameter	Symbol	Value	Unit
Maximum Forward Voltage @ $I_F=10\text{mA}$	$V_F$	0.9	V
Power Dissipation	$P_{(AV)}$	200	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	417	$^{\circ}\text{C}/\text{W}$
Peak Forward Surge Current	$I_{FSM}$	2.0	A
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^{\circ}\text{C}$

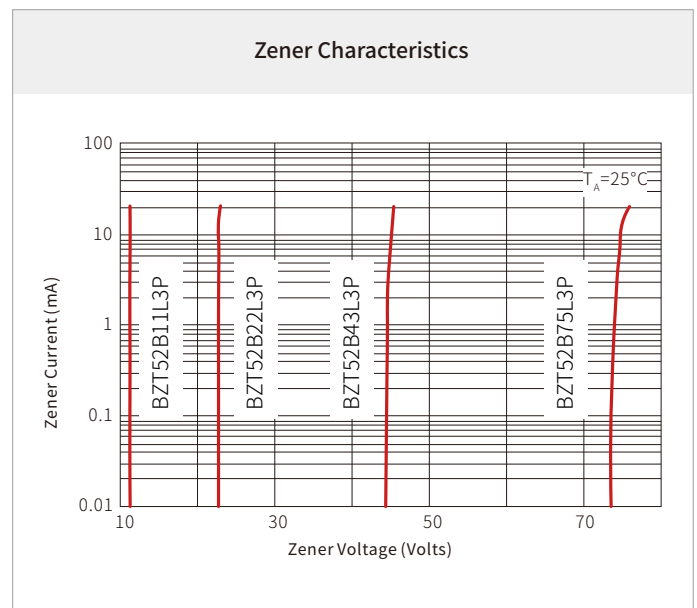
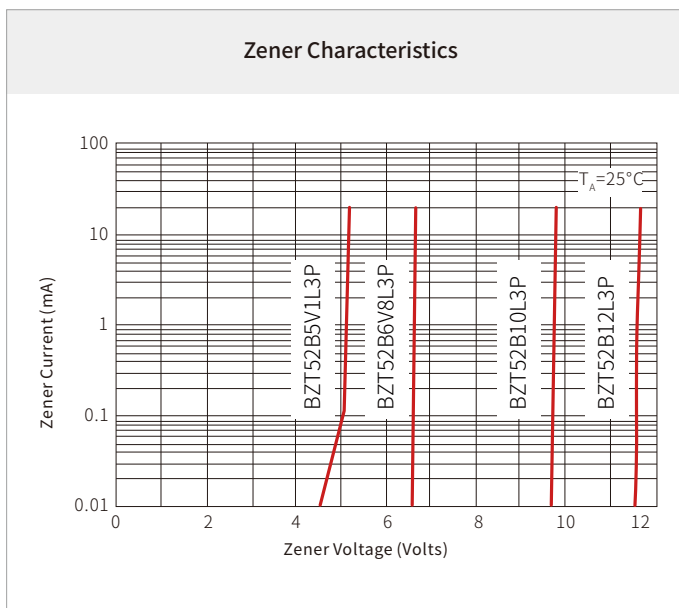
# ELECTRICAL CHARACTERISTICS

Part Number	Device Marking Code	Zener Voltage Range* <sup>1</sup>				Maximum Zener Impedance			Maximum Reverse Current	
		$V_Z@I_{ZT}$			$I_{ZT}$	$Z_{ZT}@I_{ZT}$	$Z_{ZK}@I_{ZK}$	$I_{ZK}$	$I_R$	$V_R$
		Nom.(V)	Min.(V)	Max.(V)	mA	$\Omega$	$\Omega$	mA	$\mu$ A	V
BZT52B2V4L3P	A1	2.4	2.35	2.45	5	100	400	1	50	1
BZT52B2V7L3P	A2	2.7	2.65	2.75	5	100	450	1	20	1
BZT52B3V0L3P	A3	3	2.94	3.06	5	95	500	1	10	1
BZT52B3V3L3P	A4	3.3	3.23	3.37	5	95	500	1	5	1
BZT52B3V6L3P	A5	3.6	3.53	3.67	5	90	500	1	5	1
BZT52B3V9L3P	A6	3.9	3.82	3.98	5	90	500	1	3	1
BZT52B4V3L3P	A7	4.3	4.21	4.39	5	90	600	1	3	1
BZT52B4V7L3P	A8	4.7	4.61	4.79	5	80	500	1	3	2
BZT52B5V1L3P	A9	5.1	5	5.2	5	60	480	1	2	2
BZT52B5V6L3P	AA	5.6	5.49	5.71	5	40	400	1	1	2
BZT52B6V2L3P	AB	6.2	6.08	6.32	5	10	150	1	3	4
BZT52B6V8L3P	AC	6.8	6.66	6.94	5	15	80	1	2	4
BZT52B7V5L3P	AD	7.5	7.35	7.65	5	15	80	1	1	5
BZT52B8V2L3P	AE	8.2	8.04	8.36	5	15	80	1	0.7	5
BZT52B9V1L3P	AF	9.1	8.92	9.28	5	15	100	1	0.5	6
BZT52B10L3P	AG	10	9.8	10.2	5	20	150	1	0.2	7
BZT52B11L3P	AH	11	10.78	11.22	5	20	150	1	0.1	8
BZT52B12L3P	AJ	12	11.76	12.24	5	25	150	1	0.1	8
BZT52B13L3P	AK	13	12.74	13.26	5	30	170	1	0.1	8
BZT52B15L3P	AL	15	14.7	15.3	5	30	200	1	0.05	10.5
BZT52B16L3P	C1	16	15.68	16.32	5	40	200	1	0.05	11.2
BZT52B18L3P	C2	18	17.64	18.36	5	45	225	1	0.05	12.6
BZT52B20L3P	C3	20	19.6	20.4	5	55	225	1	0.05	14
BZT52B22L3P	C4	22	21.56	22.44	5	55	250	1	0.05	15.4
BZT52B24L3P	C5	24	23.52	24.48	5	70	250	1	0.05	16.8
BZT52B27L3P	C6	27	26.46	27.54	2	80	300	0.5	0.05	18.9
BZT52B30L3P	C7	30	29.4	30.6	2	80	300	0.5	0.05	21
BZT52B33L3P	C8	33	32.34	33.66	2	80	325	0.5	0.05	23.1
BZT52B36L3P	C9	36	35.28	36.72	2	90	350	0.5	0.05	25.2
BZT52B39L3P	CA	39	38.22	39.78	2	130	350	0.5	0.05	27.3

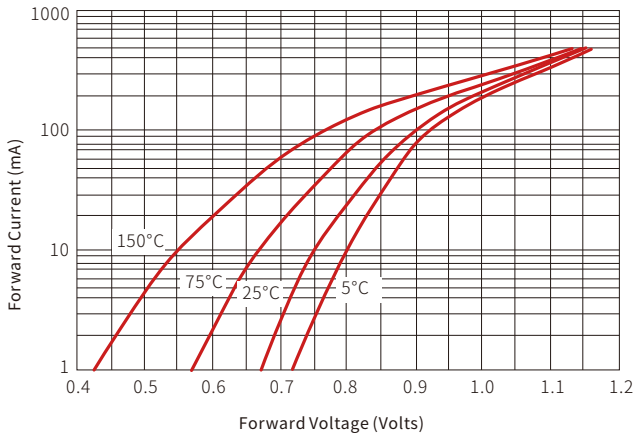
Part Number	Device Marking Code	Zener Voltage Range* <sup>1</sup>				Maximum Zener Impedance			Maximum Reverse Current	
		$V_Z@I_{ZT}$			$I_{ZT}$ mA	$Z_{ZT}@I_{ZT}$ $\Omega$	$Z_{ZK}@I_{ZK}$ $\Omega$	$I_{ZK}$ mA	$I_R$ uA	$V_R$ V
		Nom.(V)	Min.(V)	Max.(V)						
BZT52B43L3P	CB	43	42.14	43.86	2	150	375	0.5	0.05	30.1
BZT52B47L3P	CC	47	45.83	48.17	2	170	375	0.5	0.05	32.9
BZT52B51L3P	CD	51	49.73	52.27	2	180	400	0.5	0.05	35.7
BZT52B56L3P	CE	56	54.6	57.4	2	200	425	0.5	0.05	39.2
BZT52B62L3P	CF	62	60.45	63.55	2	215	450	0.5	0.05	43.4
BZT52B68L3P	CG	68	66.3	69.7	2	240	475	0.5	0.05	47.6
BZT52B75L3P	CH	75	73.13	76.87	2	255	500	0.5	0.05	52.5

\*1 Pulse width = 10 ms

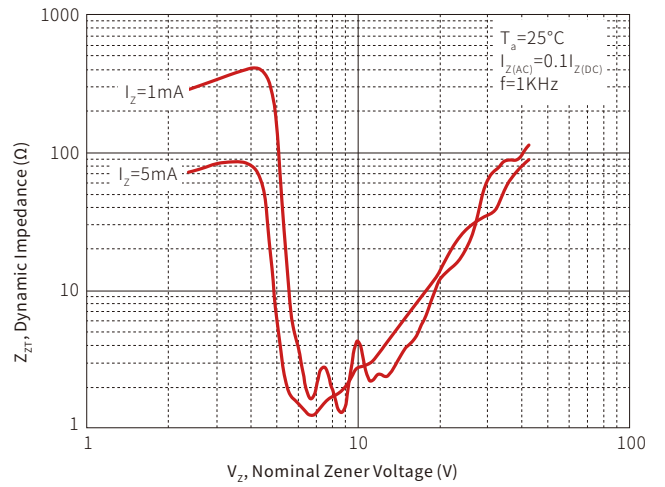
## CHARACTERISTIC CURVES



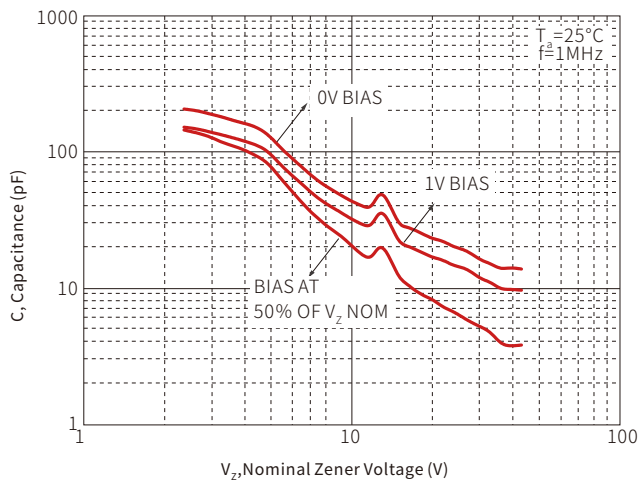
**Forward Characteristics**



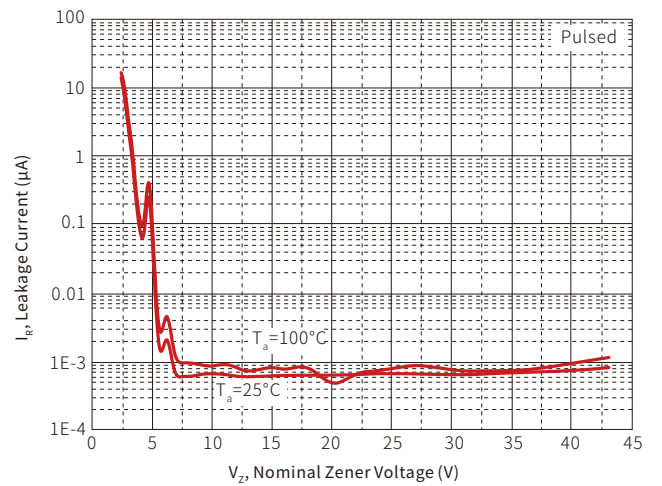
**Effect of Zener Voltage on Zener Impedance**

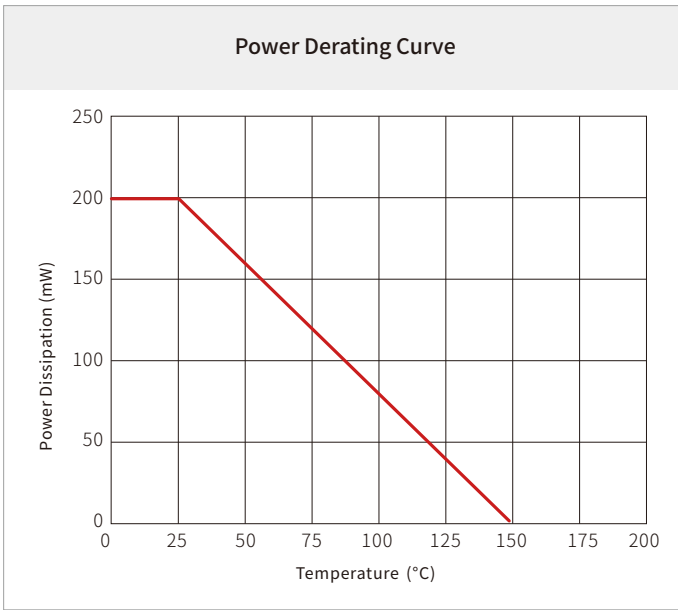


**Typical Capacitance**



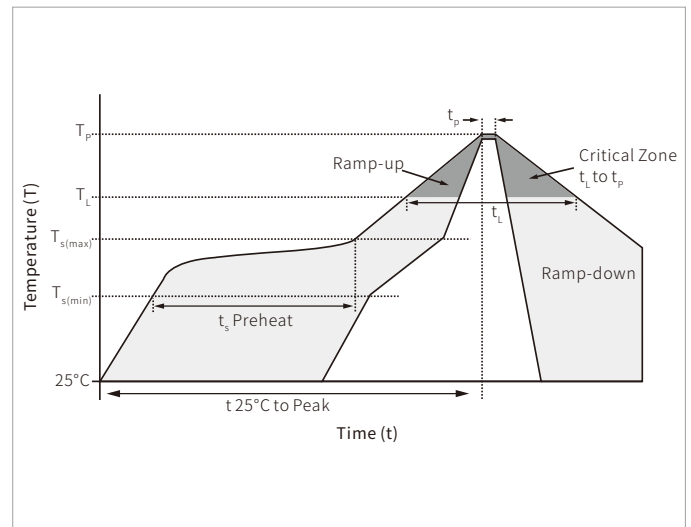
**Typical Leakage Current**



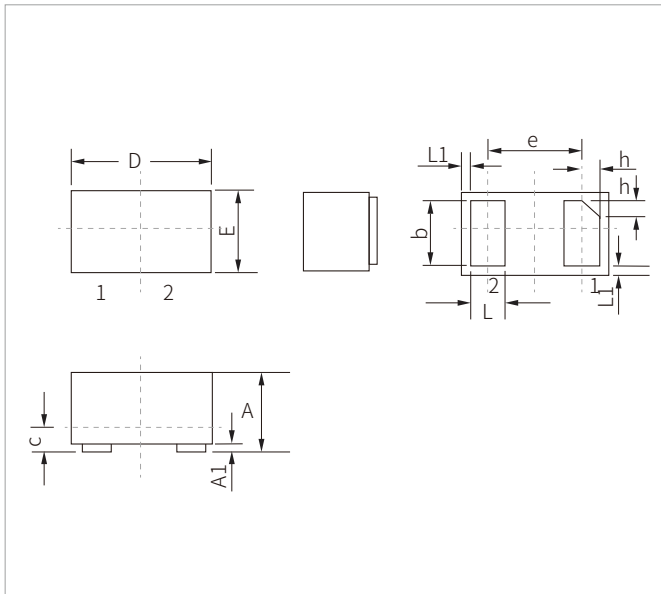


## SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ( $T_{s(min)}$ )	150°C
	Temperature Max ( $T_{s(max)}$ )	200°C
	Time (min to max) ( $t_s$ )	60 – 180 secs
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3°C/second max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/second max
Reflow	Temperature ( $T_L$ ) (Liquidus)	217°C
	Time (min to max) ( $t_L$ )	60 – 150 seconds
Peak Temperature ( $T_p$ )		260°C
Time within 5°C of actual peak Temperature ( $t_p$ )		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature ( $T_p$ )		8 minutes max.
Do not exceed		260°C

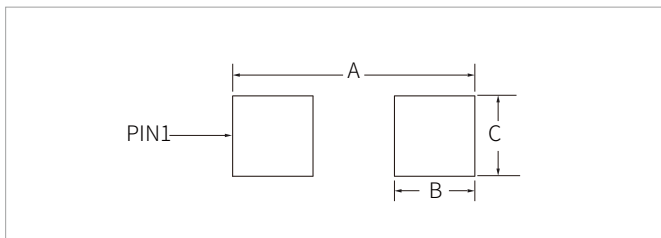


## DFN1006 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.40	0.60	0.016	0.024
A1	0	0.05	0	0.002
b	0.40	0.55	0.016	0.022
c	0.12	0.18	0.005	0.007
D	0.90	1.10	0.035	0.043
e	0.65BSC		0.026BSC	
E	0.55	0.75	0.022	0.030
L	0.20	0.35	0.008	0.014
L1	0.05REF		0.002REF	
h	0.07	0.17	0.003	0.007

## RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
A	1.20	0.047
B	0.47	0.019
C	0.60	0.024

## ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
BZT52BxxxL3P	DFN1006	10000PCS	7"

**Headquarters**

No.3387 Shendu Road  
Pujiang I&E Park  
Minhang Shanghai China  
201000

**Hotline**

400-021-5756

**Web**

<https://www.semiware.com>

**Sales Center**

Tel: 86-21-3463-7458  
Email: [sales18@semiware.com](mailto:sales18@semiware.com)

**Customer Service**

Tel: 86-21-5484-1001  
Email: [sales17@semiware.com](mailto:sales17@semiware.com)

**Technical Support**

Tel: 86-21-3463-7654  
Email: [fae01@semiware.com](mailto:fae01@semiware.com)

**Complaint & Suggestions**

Tel: 86-21-3463-7172  
Ext: 8868  
Email: [cs03@semiware.com](mailto:cs03@semiware.com)

**By QR Code**

Website



Wechat

To find your local partner within Semiware' s global website: [www.semiware.com](http://www.semiware.com)

© 2022 Semiware Semiconductor Inc.

The content of this document has been carefully checked and understood. However, neither Semiware nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Semiware does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Chinese law and resulting disputes shall be settled by the courts at the place of business of Semiware. Latest publications and a complete disclaimer can be downloaded from the Semiware website. All trademarks recognized.