

FEATURES

- | Extremely Small DFN1006 Package
- | Planar Die Construction
- | 250mW Power Dissipation
- | Zener Voltages from 2.4V-75V
- | Green EMC



DFN1006



Schematic Symbol

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	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	$P_{(AV)}$	250	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	417	$^{\circ}\text{C/W}$
Peak Forward Surge Current	I_{FSM}	2.0	A
Operation Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^{\circ}\text{C}$

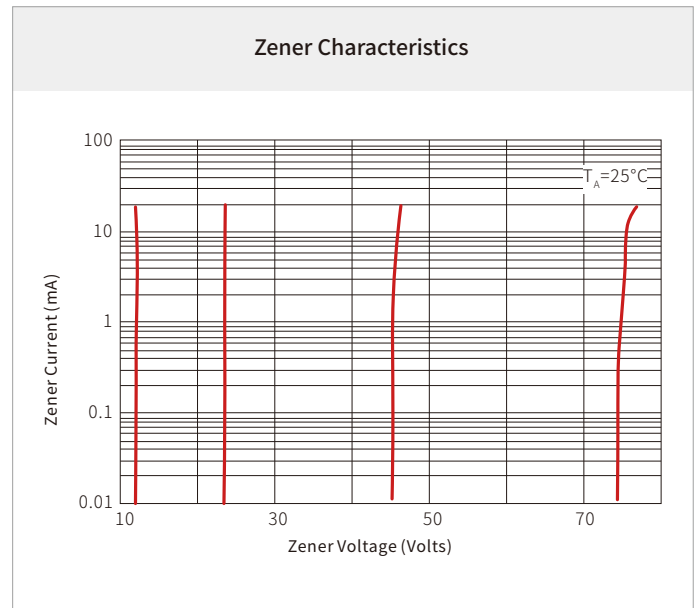
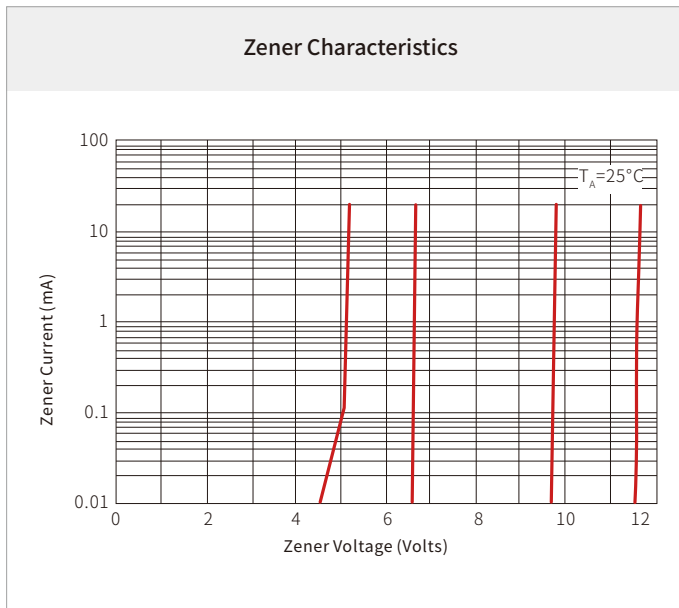
ELECTRICAL CHARACTERISTICS

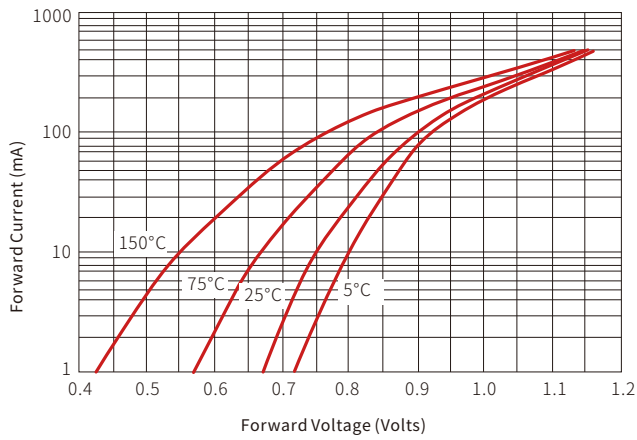
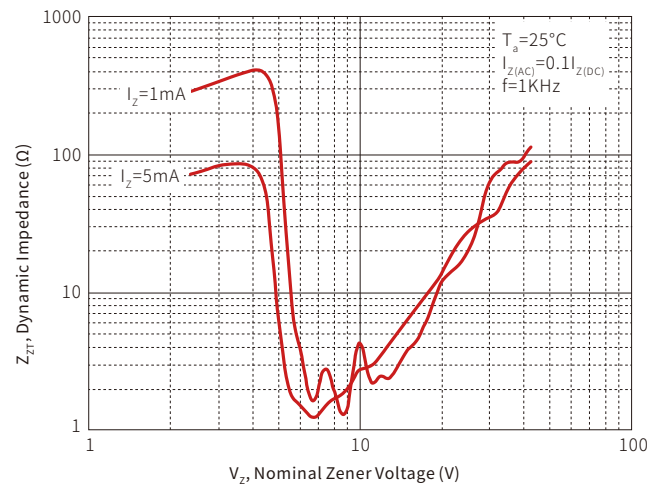
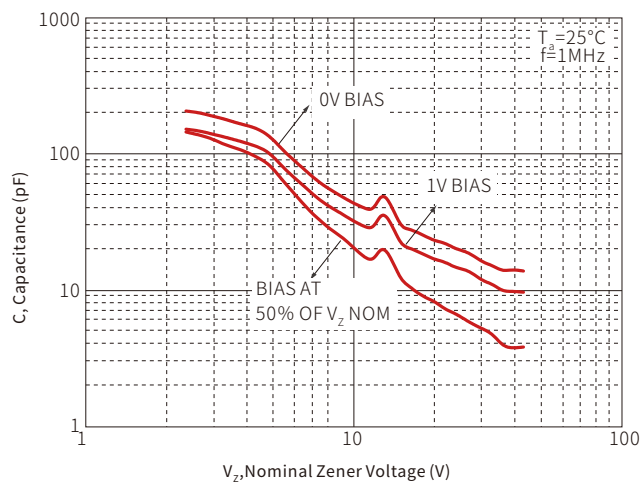
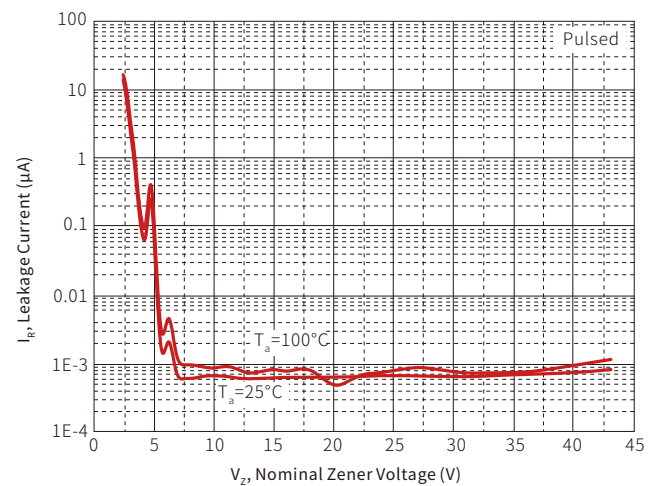
Part Number	Device Marking Code	Zener Voltage Range* ¹				Maximum Zener Impedance			Maximum Reverse Current	
		$V_Z @ I_{ZT}$			I_{ZT}	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	I_{ZK}	I_R	V_R
		Nom.(V)	Min.(V)	Max.(V)	mA	Ω	Ω	mA	μA	V
BZT52C2V4L3P	B1	2.4	2.28	2.52	5	100	400	1	50	1
BZT52C2V7L3P	B2	2.7	2.57	2.84	5	100	450	1	20	1
BZT52C3V0L3P	B3	3	2.85	3.15	5	95	500	1	10	1
BZT52C3V3L3P	B4	3.3	3.14	3.47	5	95	500	1	5	1
BZT52C3V6L3P	B5	3.6	3.42	3.78	5	90	500	1	5	1
BZT52C3V9L3P	B6	3.9	3.71	4.1	5	90	500	1	3	1
BZT52C4V3L3P	B7	4.3	4.09	4.52	5	90	600	1	3	1
BZT52C4V7L3P	B8	4.7	4.47	4.94	5	80	500	1	3	2
BZT52C5V1L3P	B9	5.1	4.85	5.36	5	60	480	1	2	2
BZT52C5V6L3P	BA	5.6	5.32	5.88	5	40	400	1	1	2
BZT52C6V2L3P	BB	6.2	5.89	6.51	5	10	150	1	3	4
BZT52C6V8L3P	BC	6.8	6.46	7.14	5	15	80	1	2	4
BZT52C7V5L3P	BD	7.5	7.13	7.88	5	15	80	1	1	5
BZT52C8V2L3P	BE	8.2	7.79	8.61	5	15	80	1	0.7	5
BZT52C9V1L3P	BF	9.1	8.65	9.56	5	15	100	1	0.5	6
BZT52C10L3P	BG	10	9.5	10.5	5	20	150	1	0.2	7
BZT52C11L3P	BH	11	10.45	11.55	5	20	150	1	0.1	8
BZT52C12L3P	BJ	12	11.4	12.6	5	25	150	1	0.1	8
BZT52C13L3P	BK	13	12.35	13.65	5	30	170	1	0.1	8
BZT52C15L3P	BL	15	14.25	15.75	5	30	200	1	0.05	10.5
BZT52C16L3P	D1	16	15.2	16.8	5	40	200	1	0.05	11.2
BZT52C18L3P	D2	18	17.1	18.9	5	45	225	1	0.05	12.6
BZT52C20L3P	D3	20	19	21	5	55	225	1	0.05	14
BZT52C22L3P	D4	22	20.9	23.1	5	55	250	1	0.05	15.4
BZT52C24L3P	D5	24	22.8	25.2	5	70	250	1	0.05	16.8
BZT52C27L3P	D6	27	25.65	28.35	2	80	300	0.5	0.05	18.9
BZT52C30L3P	D7	30	28.5	31.5	2	80	300	0.5	0.05	21
BZT52C33L3P	D8	33	31.35	34.65	2	80	325	0.5	0.05	23.1
BZT52C36L3P	D9	36	34.2	37.8	2	90	350	0.5	0.05	25.2
BZT52C39L3P	DA	39	37.05	40.95	2	130	350	0.5	0.05	27.3

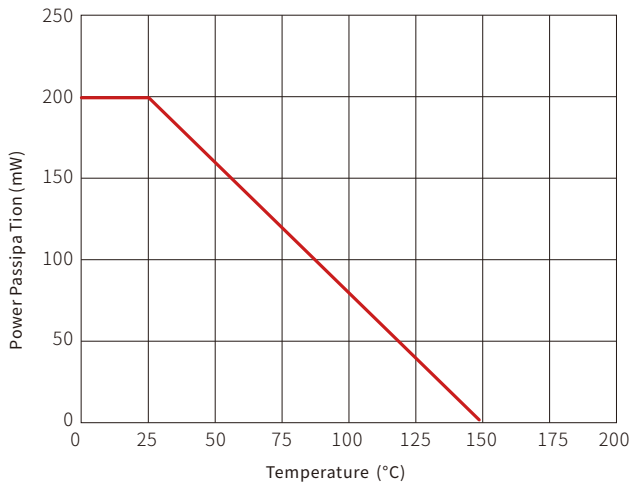
Part Number	Device Marking Code	Zener Voltage Range* ¹				Maximum Zener Impedance			Maximum Reverse Current	
		$V_Z @ I_{ZT}$			I_{ZT}	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	I_{ZK}	I_R	V_R
		Nom.(V)	Min.(V)	Max.(V)	mA	Ω	Ω	mA	μA	V
BZT52C43L3P	DB	43	40.85	45.15	2	150	375	0.5	0.05	30.1
BZT52C47L3P	DC	47	44.65	49.35	2	170	375	0.5	0.05	32.9
BZT52C51L3P	DD	51	48.45	53.55	2	180	400	0.5	0.05	35.7
BZT52C56L3P	DE	56	53.2	58.8	2	200	425	0.5	0.05	39.2
BZT52C62L3P	DF	62	58.9	65.1	2	215	450	0.5	0.05	43.4
BZT52C68L3P	DG	68	64.6	71.4	2	240	475	0.5	0.05	47.6
BZT52C75L3P	DH	75	71.25	78.75	2	255	500	0.5	0.05	52.5

*1 Pulse width = 10 ms

CHARACTERISTIC CURVES

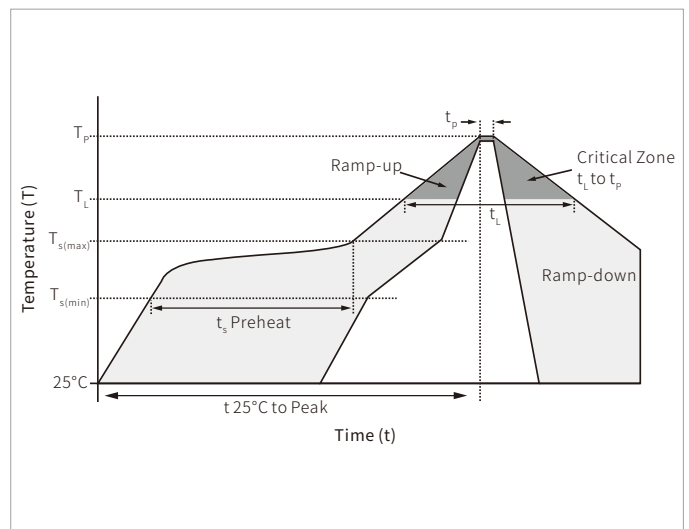


Forward Characteristics

Effect of Zener Voltage on Zener Impedance

Typical Capacitance

Typical Leakage Current


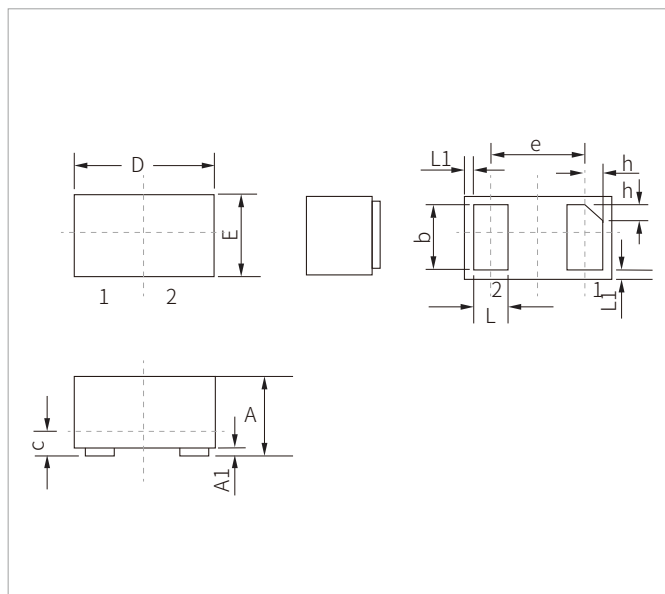
Power Derating Curve


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

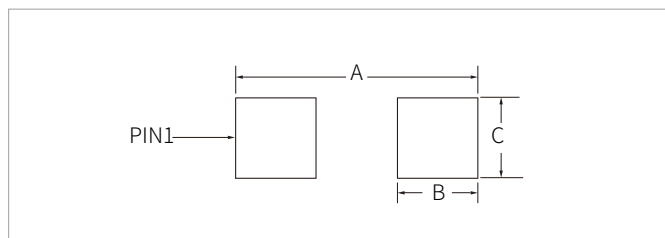


DFN1006 PACKAGE INFORMATION



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
BZT52CxxxL3P	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

Customer Service

Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support

Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions

Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

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