



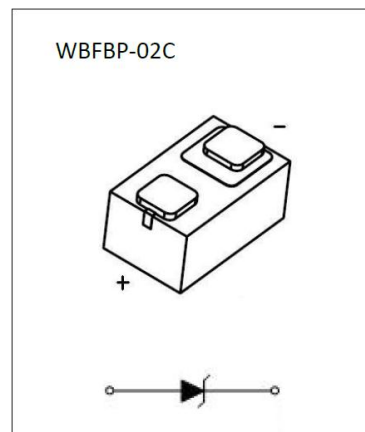
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

## AD-DW52C\*LED02 series Plastic-Encapsulated Diode

AD-DW52C\*LED02 series zener diode

### FEATURES

- Ultra-small leadless surface mount package
- Ideally suited for automated assembly processes



**MAXIMUM RATINGS ( $T_j = 25^\circ\text{C}$  unless otherwise specified)**

Parameter	Symbol	Value	Unit
Forward voltage @ $I_F = 10\text{mA}$	$V_F$ <sup>1)</sup>	0.9	V
Power dissipation	$P_D$	100	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$	1250	$^\circ\text{C}/\text{W}$
Operating junction and storage temperature range	$T_j, T_{stg}$	-55 ~ 150	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS (T<sub>j</sub> = 25°C unless otherwise specified)**

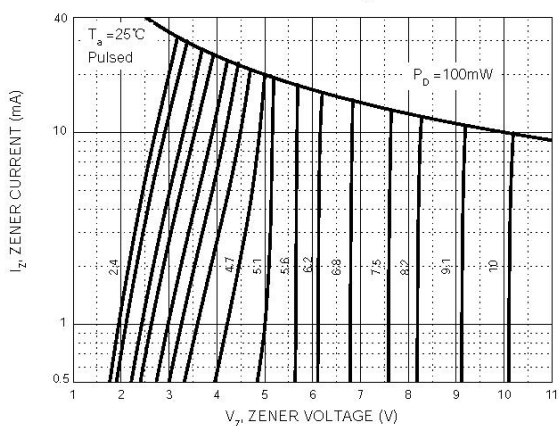
Type number	Marking	Zener voltage range <sup>1)</sup>				Maximum Zener impedance <sup>2)</sup>				Maximum reverse current		Temperature coefficient of Zener voltage @ I <sub>ZT</sub> = 5mA (mV/°C)		Test current
		V <sub>Z</sub> @ I <sub>ZT</sub> (V)			I <sub>ZT</sub> (mA)	Z <sub>ZT</sub> @ I <sub>ZT</sub> (Ω)	Z <sub>ZK</sub> @ I <sub>ZK</sub> (Ω)	I <sub>ZK</sub> (mA)	I <sub>R</sub> (μA)	V <sub>R</sub> (V)	Min	Max	I <sub>ZTC</sub> (mA)	
		Min	Norm	Max										
AD-DW52C2V4LED02	W̄X	2.2	2.4	2.6	5	100	600	1.0	50	1.0	-3.5	0	5	
AD-DW52C2V7LED02	W̄1	2.5	2.7	2.9	5	100	600	1.0	20	1.0	-3.5	0	5	
AD-DW52C3V0LED02	W̄2	2.8	3.0	3.2	5	95	600	1.0	10	1.0	-3.5	0	5	
AD-DW52C3V3LED02	W̄3	3.1	3.3	3.5	5	95	600	1.0	5	1.0	-3.5	0	5	
AD-DW52C3V6LED02	W̄4	3.4	3.6	3.8	5	90	600	1.0	5	1.0	-3.5	0	5	
AD-DW52C3V9LED02	W̄5	3.7	3.9	4.1	5	90	600	1.0	3	1.0	-3.5	0	5	
AD-DW52C4V3LED02	W̄6	4.0	4.3	4.6	5	90	600	1.0	3	1.0	-3.5	0	5	
AD-DW52C4V7LED02	W̄7	4.4	4.7	5.0	5	80	500	1.0	3	2.0	-3.5	0.2	5	
AD-DW52C5V1LED02	9̄Y	4.8	5.1	5.4	5	60	480	1.0	2	2.0	-2.7	1.2	5	
AD-DW52C5V6LED02	9̄A	5.2	5.6	6.0	5	40	400	1.0	1	2.0	-2.0	2.5	5	
AD-DW52C6V2LED02	9̄B	5.8	6.2	6.6	5	10	150	1.0	3	4.0	0.4	3.7	5	
AD-DW52C6V8LED02	9̄C	6.4	6.8	7.2	5	15	80	1.0	2	4.0	1.2	4.5	5	
AD-DW52C7V5LED02	9̄D	7.0	7.5	7.9	5	15	80	1.0	1	5.0	2.5	5.3	5	
AD-DW52C8V2LED02	9̄E	7.7	8.2	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2	5	
AD-DW52C9V1LED02	9̄F	8.5	9.1	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0	5	
AD-DW52C10LED02	9̄G	9.4	10	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0	5	
AD-DW52C11LED02	9̄H	10.4	11	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0	5	
AD-DW52C12LED02	9̄J	11.4	12	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0	5	
AD-DW52C13LED02	9̄K	12.4	13	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0	5	
AD-DW52C15LED02	9̄L	13.8	15	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0	5	
AD-DW52C16LED02	9̄M	15.3	16	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0	5	
AD-DW52C18LED02	9̄N	16.8	18	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0	5	
AD-DW52C20LED02	9̄P	18.8	20	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0	5	
AD-DW52C22LED02	9̄R	20.8	22	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0	5	
AD-DW52C24LED02	9̄S	22.8	24	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0	5	
AD-DW52C27LED02	9̄T	25.1	27	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3	2	
AD-DW52C30LED02	9̄U	28.0	30	32.0	2	80	300	0.5	0.1	21.0	24.4	29.4	2	
AD-DW52C33LED02	9̄V	31.0	33	35.0	2	80	325	0.5	0.1	23.1	27.4	33.4	2	
AD-DW52C36LED02	9̄W	34.0	36	38.0	2	90	350	0.5	0.1	25.2	36.5	45.5	5	
AD-DW52C39LED02	9̄X	37.0	39	41.0	2	130	350	0.5	0.1	27.3	36.8	49.8	5	
AD-DW52C43LED02	9̄Z	40.0	43	46.0	5	100	700	1.0	0.1	32.0	10.0	12.0	5	

1) Short duration test pulse used to minimize self-heating effect.

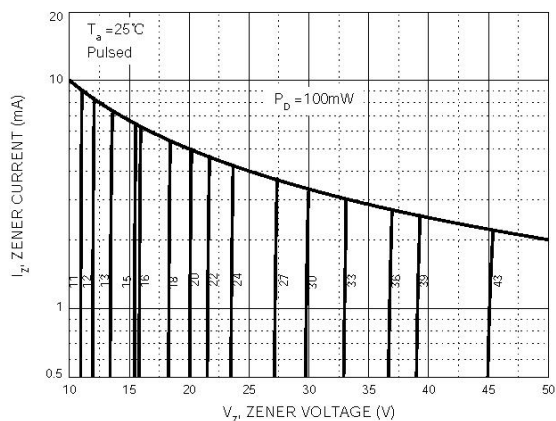
2) f = 1MHZ.

# TYPICAL CHARACTERISTICS

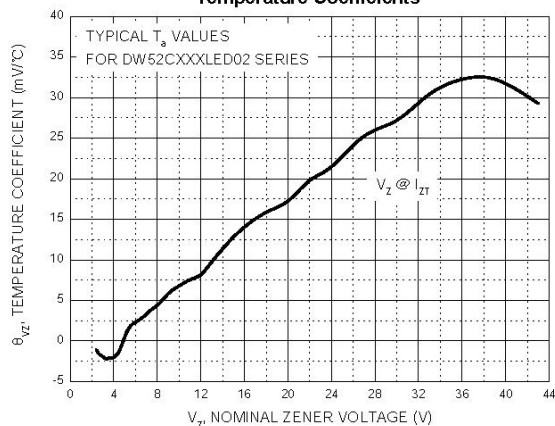
Zener Characteristics ( $V_z$  Up to 10 V)



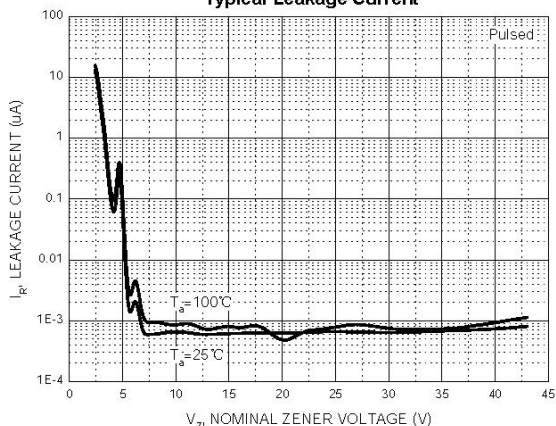
Zener Characteristics (11 V to 43 V)



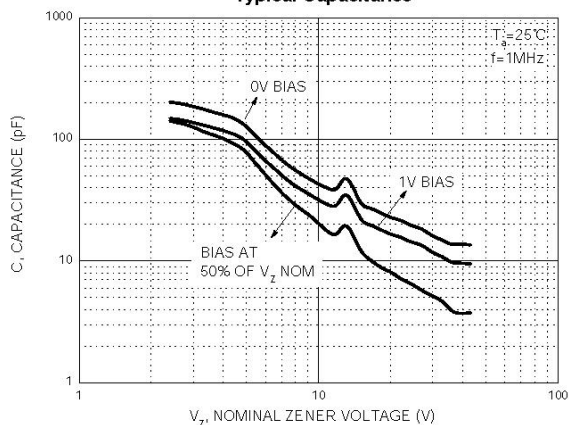
Temperature Coefficients



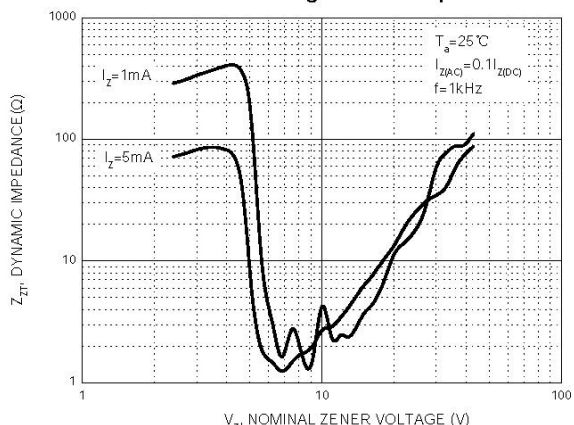
Typical Leakage Current



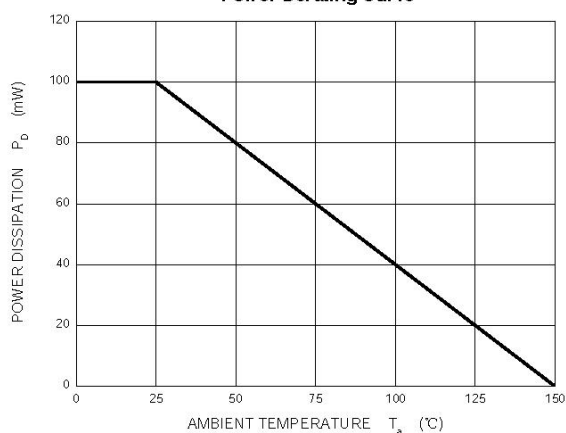
Typical Capacitance



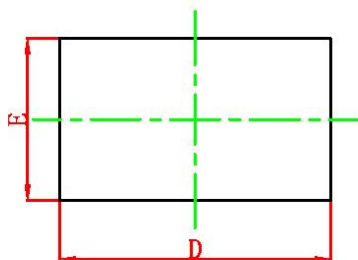
Effect of Zener Voltage on Zener Impedance



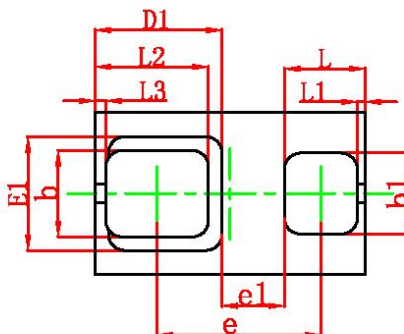
Power Derating Curve



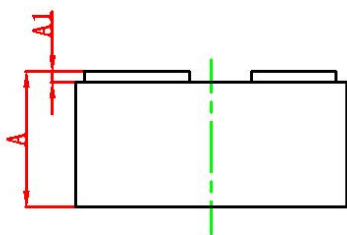
### WBFBP-02C PACKAGE OUTLINE DIMENSIONS



TOP VIEW



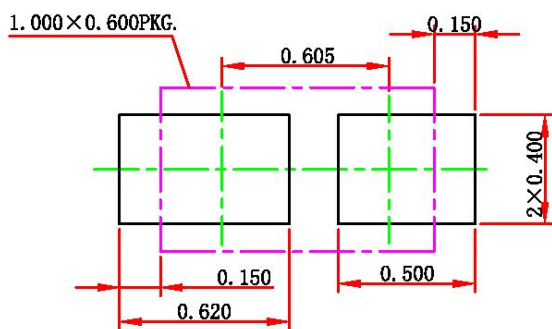
BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.450	0.550	0.018	0.022
A1	0.010	0.100	0.000	0.004
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
D1	0.470REF.		0.019REF.	
E1	0.420REF.		0.017REF.	
b	0.270	0.370	0.011	0.015
b1	0.250	0.350	0.010	0.014
e	0.555	0.655	0.022	0.026
e1	0.230REF.		0.009REF.	
L	0.250	0.350	0.010	0.014
L1	0.030REF.		0.001REF.	
L2	0.370	0.470	0.015	0.019
L3	0.040REF.		0.002REF.	

### WBFBP-02C SUGGESTED PAD LAYOUT

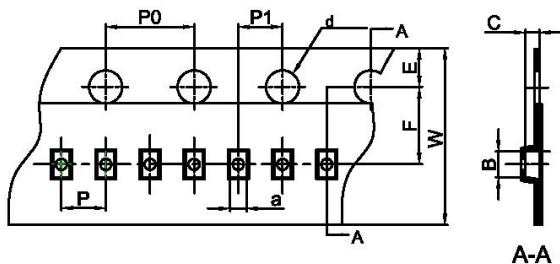


Note:

1. Controlling dimension in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purpose only.

# WBFBP-02C TAPE AND REEL

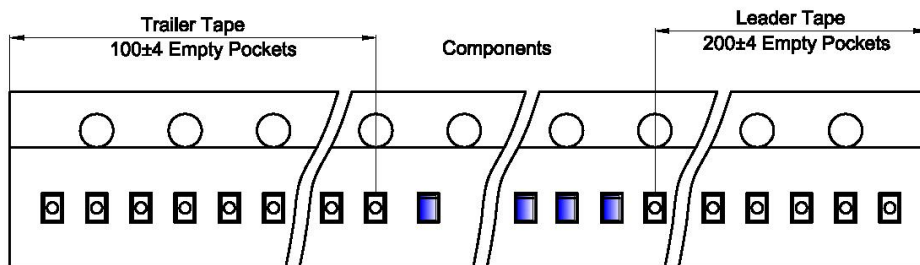
## DFN/FBP(1.0×0.6) Embossed Carrier Tape



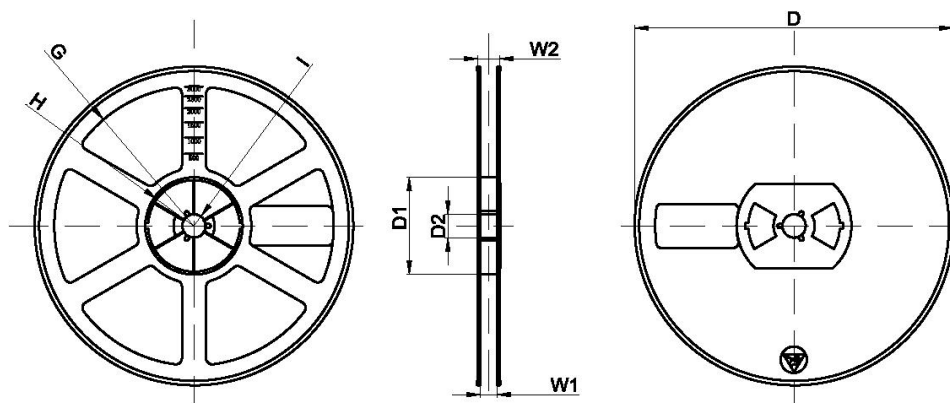
**Packaging Description:**  
**DFN/FBP(1.0×0.6)** parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 10,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
DFN/FBP(1.0×0.6)	0.66	1.15	0.66	∅1.50	1.75	3.50	4.00	2.00	2.00	8.00

## DFN/FBP(1.0×0.6) Tape Leader and Trailer



## DFN/FBP(1.0×0.6) Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	∅178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
10000 pcs	7 inch	150,000 pcs	203×203×195	600,000 pcs	438×438×220	

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13th Floor, C Block, Tengfei Building, Yan Chuang Yuan, Nanjing Jiangbei New Area, China

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