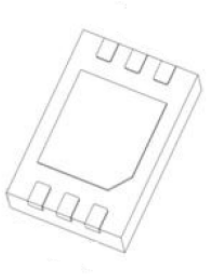
SZCJ

Shenzhen Changji Semiconductor Co., LTD.

# JSCJ DFNWB2×3-6L Plastic-Encapsulate MOSFETS

## CJCD2007A Dual N-Channel MOSFET

**DFNWB2×3-6L**



| $V_{(BR)DSS}$ | $R_{DS(on)}$TYP | $I_D$ |
|---|---|---|
| 20V | 10.5mΩ@10V | 8A |
| | 11.3mΩ@4.5V | |
| | 11.7mΩ@3.8V | |
| | 14.5mΩ@2.5V | |

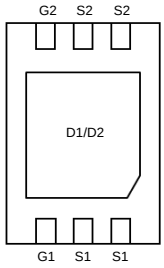
### GENERAL DESCRIPTION

The CJCD2007A uses advanced trench technology to provide excellent $R_{DS(ON)}$ and low gate charge. It is ESD protected. This device is suitable for use as a uni-directional or bi-directional load switch,facilitated by its common-drain configuration.

### MARKING



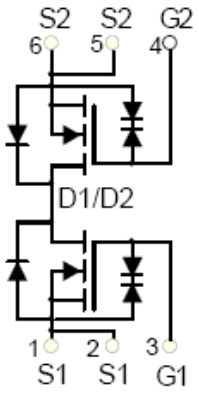

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Back

2007A = Part No.
Solid dot = Pin1 indicator.
XX = Code.

### Equivalent Circuit




### ABSOLUTE MAXIMUM RATINGS ($T_a$=25℃ unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | 20 | V |
| Gate-Source Voltage | $V_{GS}$ | ±10 | V |
| Continuous Drain Current | $I_D$ | 8 | A |
| Pulsed Drain Current | $I_{DM}$ ① | 45 | A |
| Maximum Power Dissipation | $P_D$ ④ | 1.5 | W |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ ④ | 83.3 | ℃/W |
| Operating Junction and Storage Temperature Range | $T_J$ ,$T_{stg}$ | -55~+150 | ℃ |

## MOSFET ELECTRICAL CHARACTERISTICS

**$T_a$=25℃ unless otherwise specified**

| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| **Off characteristics** | | | | | | |
| Drain-source breakdown voltage | $V_{(BR)\ DSS}$ | $V_{GS}$ = 0V, $I_D$ =250μA | 20 | | | V |
| Zero gate voltage drain current | $I_{DSS}$ | $V_{DS}$ =16V, $V_{GS}$ =0V | | | 1 | μA |
| Gate-body leakage current | $I_{GSS}$ | $V_{DS}$ =0V, $V_{GS}$ =±10V | | | ±10 | |
| **On characteristics** ② | | | | | | |
| Gate-threshold voltage | $V_{GS(th)}$ | $V_{DS}$ =$V_{GS}$, $I_D$ =250μA | 0.4 | 0.8 | 1.0 | V |
| Static drain-source on-sate resistance | $R_{DS(on)}$ | $V_{GS}$ =10V, $I_D$ =3A | 7.4 | 10.5 | 13.7 | mΩ |
| | | $V_{GS}$ =4.5V, $I_D$ =3A | 7.9 | 11.3 | 14.7 | |
| | | $V_{GS}$ =3.8V, $I_D$ =3A | 8.2 | 11.7 | 15.2 | |
| | | $V_{GS}$ =2.5V, $I_D$ =3A | 10.2 | 14.5 | 18.9 | |
| **Dynamic characteristics** ③ | | | | | | |
| Input capacitance | $C_{iss}$ | $V_{DS}$ =10V,$V_{GS}$ =0V, f =1MHz | | 762 | | pF |
| Output capacitance | $C_{oss}$ | | | 109 | | |
| Reverse transfer capacitance | $C_{rss}$ | | | 86 | | |
| **Switching characteristics** ③ | | | | | | |
| Total gate charge | $Q_g$ | $V_{GS}$=4.5V, $V_{DS}$=10V, $I_D$=7A | | 7.5 | | nC |
| Gate-source charge | $Q_{gs}$ | | | 1.1 | | |
| Gate-drain charge | $Q_{gd}$ | | | 2.8 | | |
| Turn-on delay time | $t_{d(on)}$ | $V_{DS}$=10V, $V_{GS}$=5V,$R_G$=3Ω, $R_L$=1.5Ω | | 6.9 | | ns |
| Turn-on rise time | $t_r$ | | | 4.5 | | |
| Turn-off delay time | $t_{d(off)}$ | | | 26.1 | | |
| Turn-off fall time | $t_f$ | | | 9.3 | | |
| **Drain-Source Diode Characteristics** | | | | | | |
| Drain-source diode forward voltage | $V_{SD}$ ② | $V_{GS}$ =0V, $I_S$=1.0A | | | 1.2 | V |
| Continuous drain-source diode forward current | $I_S$ | | | | 8 | A |
| Pulsed drain-source diode forward current | $I_{SM}$ ① | | | | 45 | A |

Notes:

1.$P_W$≤10μs, Duty cycle≤1%.

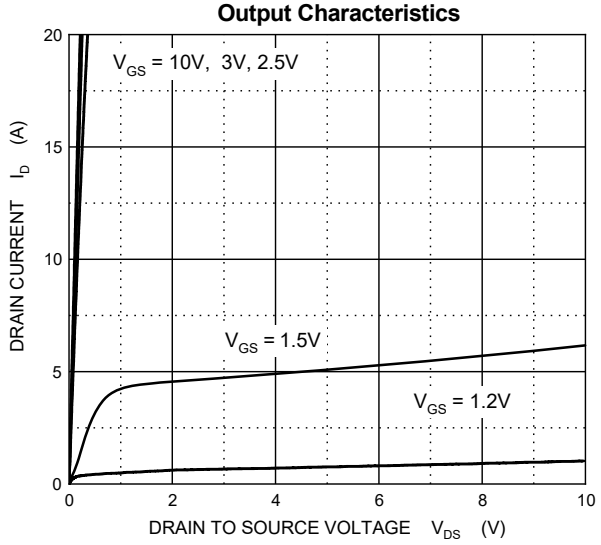
2.Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.

3.Guaranteed by design, not subject to production.

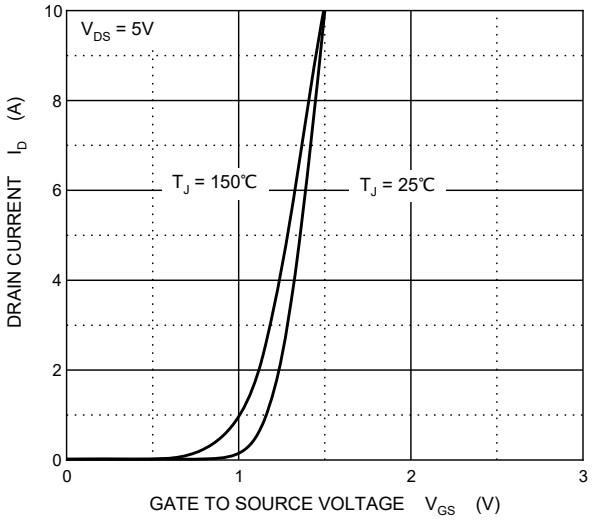
4.Device is single-side active, mounted on 1 $in^2$ FR-4 board with 2oz.Copper, in a still air environment with $T_A$=25℃,t ≤10 sec.

## **Typical Characteristics**($T_J$ = 25℃,unless otherwise specified)

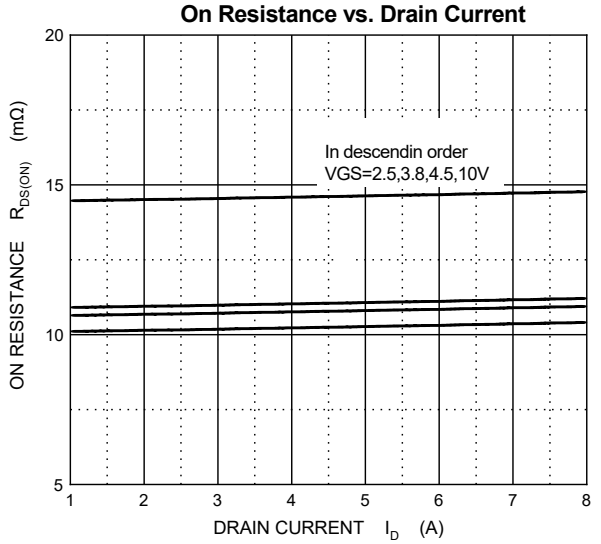
**Output Characteristics**



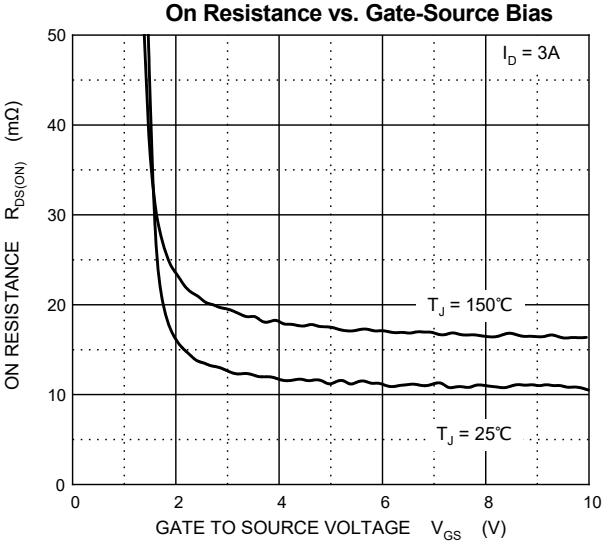

**Transfer Characteristics**



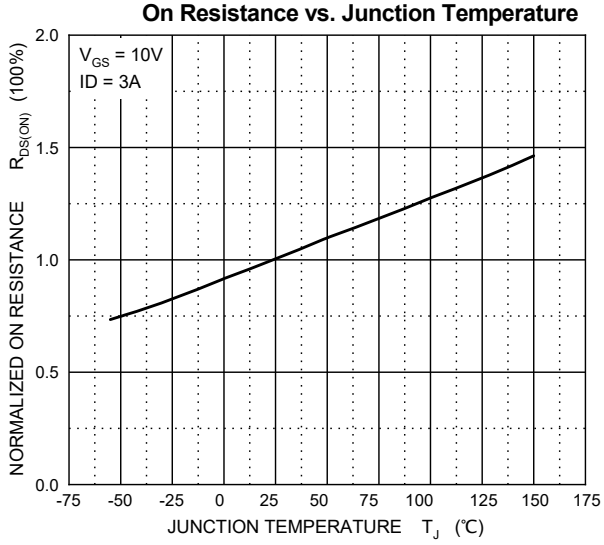

**On Resistance vs. Drain Current**



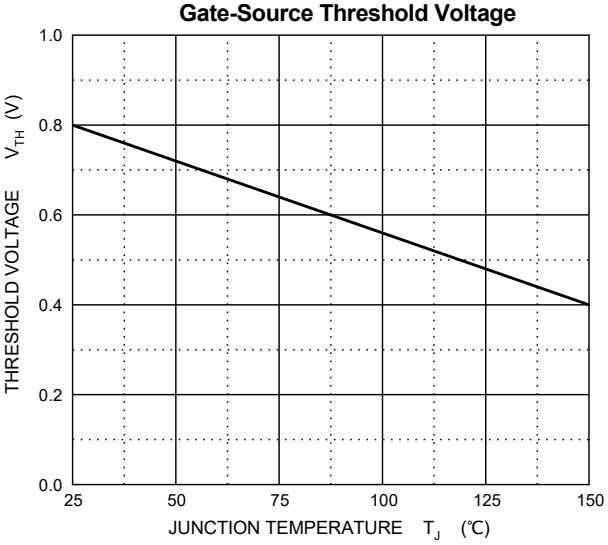

**On Resistance vs. Gate-Source Bias**




**On Resistance vs. Junction Temperature**

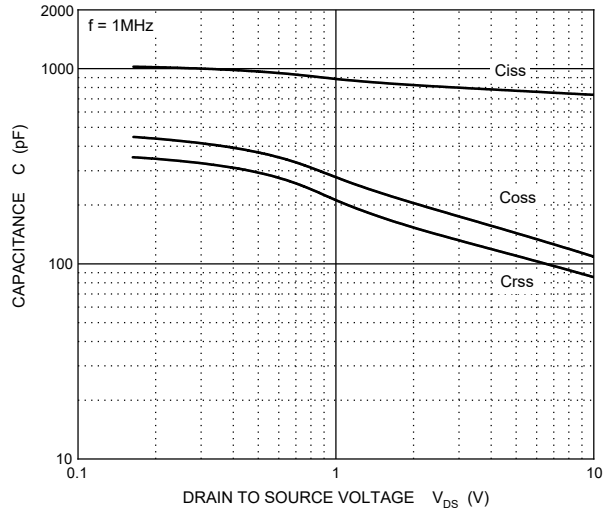



**Gate-Source Threshold Voltage**

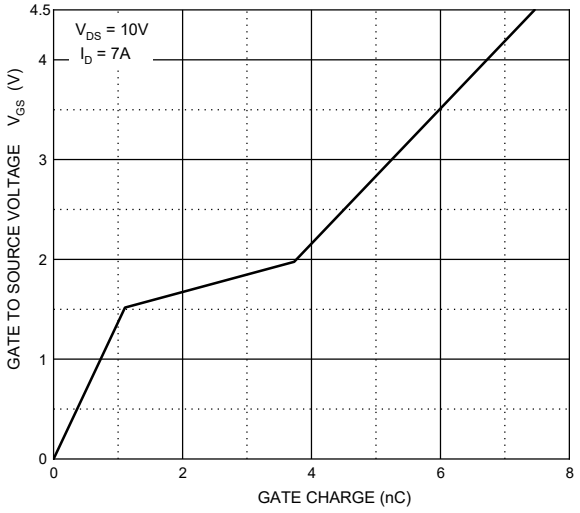


## **Typical Characteristics**($T_J$ = 25℃,unless otherwise specified)

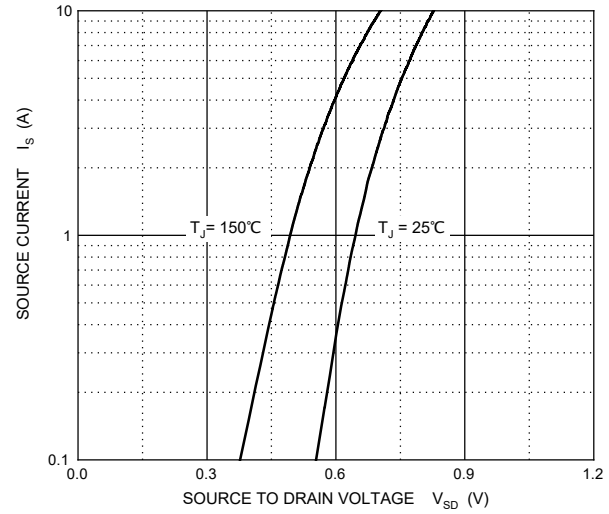
**Typical Capacitances**



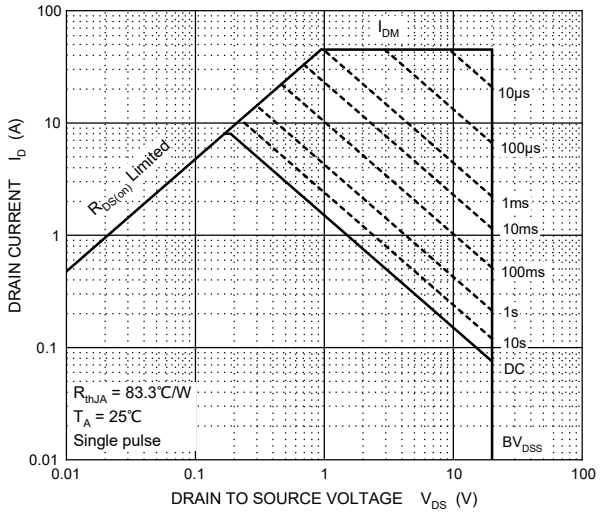

**Gate Charge**



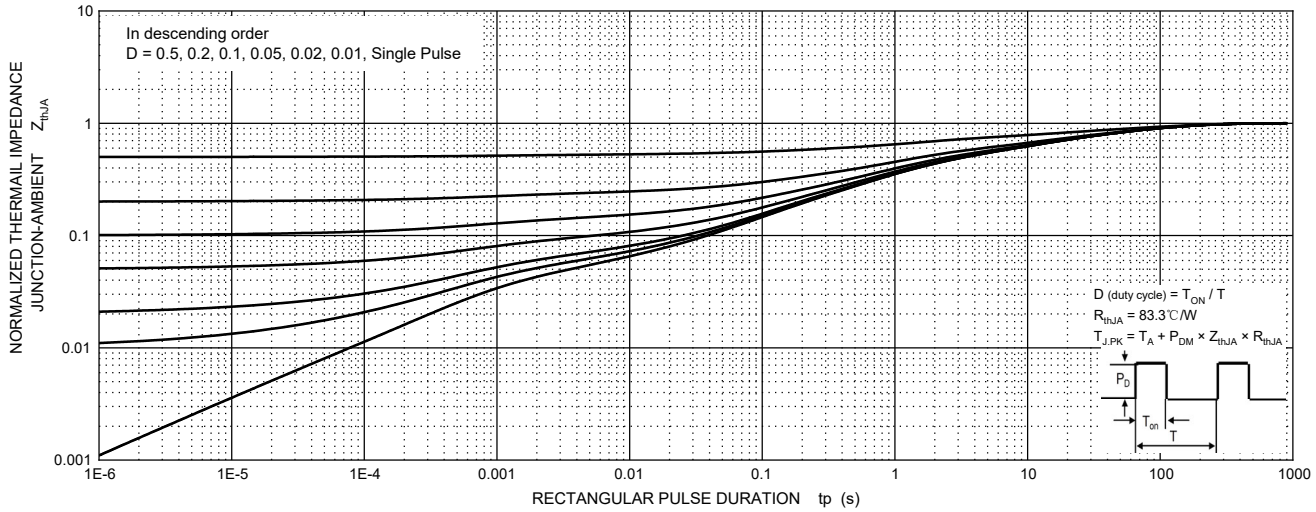

**Source-Drain Diode Forward Characteristics**



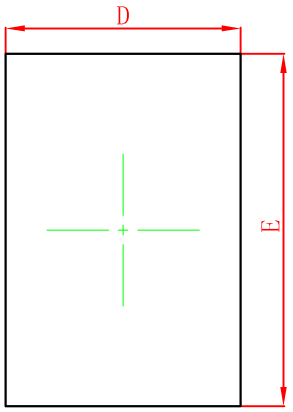

**Maximum Safe Operating Area**



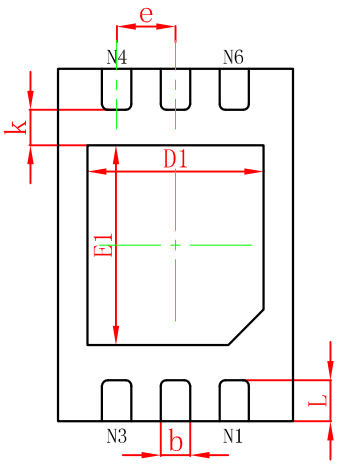

**Transient Thermal Impedance, Junction-Ambient**



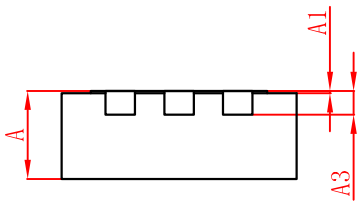
## DFNWB2×3-6L Package Outline Dimensions(Unit:mm)




TOP VIEW



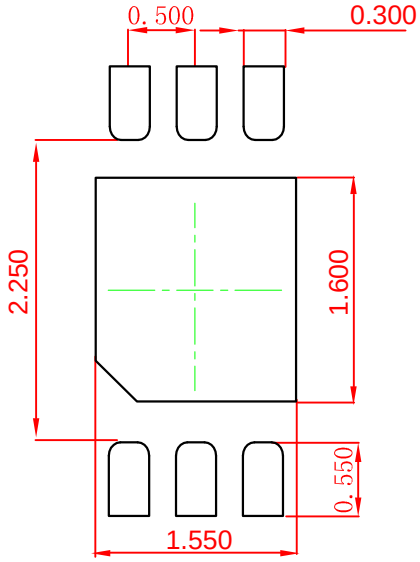

BOTTOM VIEW




SIDE VIEW

| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| A | 0.700 | 0.800 | 0.028 | 0.031 |
| A1 | 0.000 | 0.050 | 0.000 | 0.002 |
| A3 | 0.203REF. | | 0.008REF. | |
| D | 1.950 | 2.050 | 0.077 | 0.081 |
| E | 2.950 | 3.050 | 0.116 | 0.120 |
| D1 | 1.450 | 1.550 | 0.057 | 0.061 |
| E1 | 1.650 | 1.750 | 0.065 | 0.069 |
| k | 0.200MIN. | | 0.008MIN. | |
| b | 0.200 | 0.300 | 0.008 | 0.012 |
| e | 0.500TYP. | | 0.020TYP. | |
| L | 0.300 | 0.400 | 0.012 | 0.016 |

## DFNWB2×3-6L Suggested Pad Layout

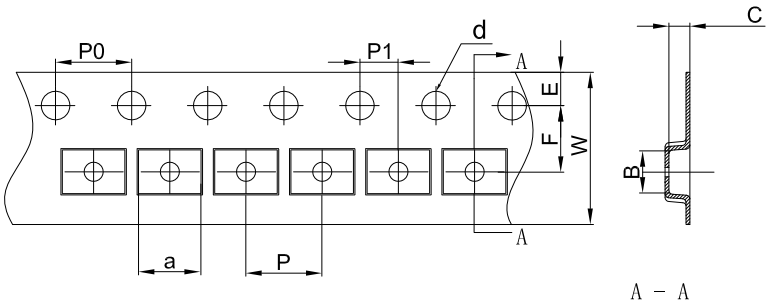



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.050mm.
3.The pad layout is for reference purposes only.

NOTICE

SZCJ reserves the right to make modifications,enhan nts,improvements,corrections or other es without further notice to any product herein. SZCJ does not assume any liability arising out of the application or use of any product described h

## DFNWB2X3-6L Embossed Carrier Tape

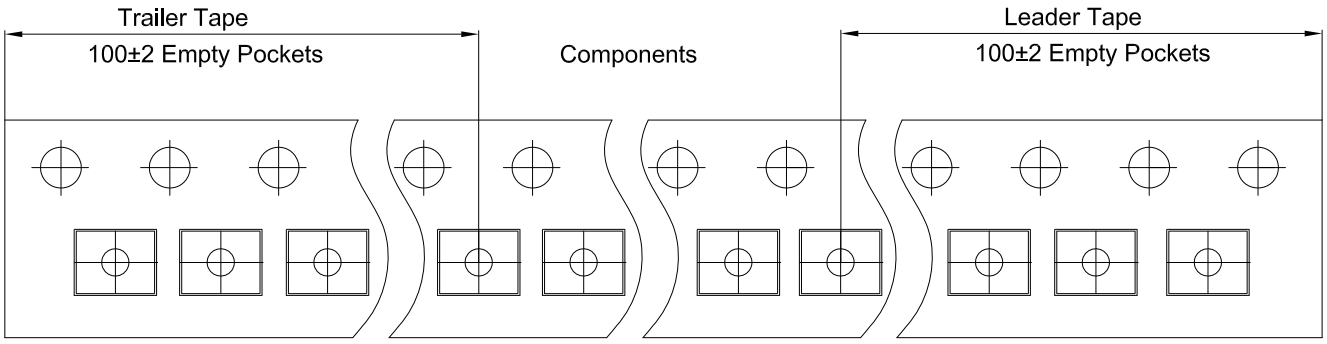



Packaging Description:

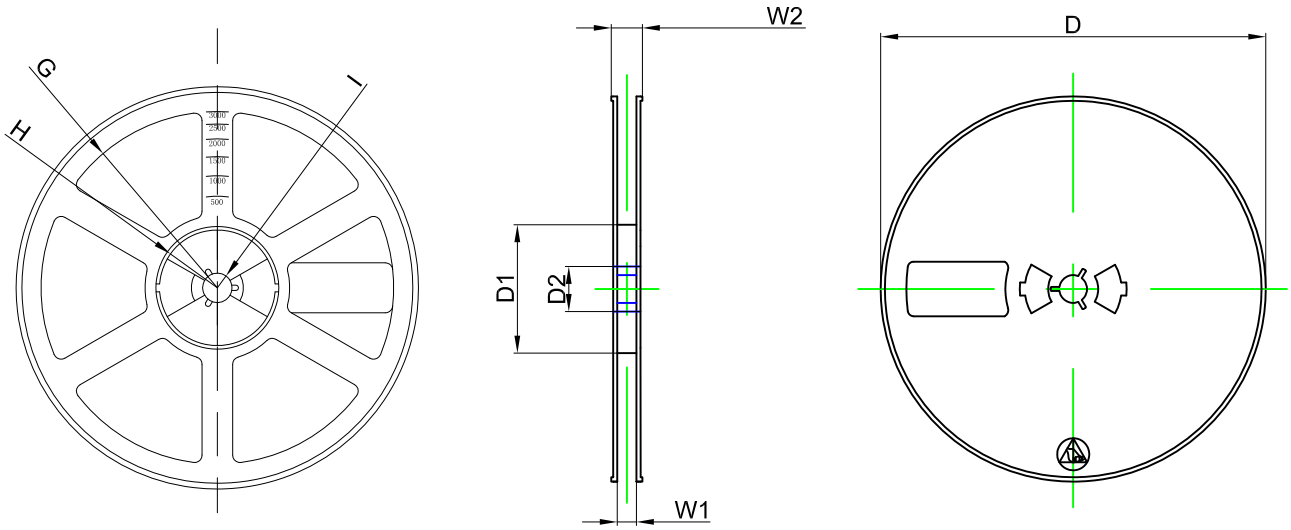
**DFNWB2X3-6L** parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 18.0cm 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 |
| **DFNWB2X3-6L** | **3.30** | 2.30 | 1.10 | Ø1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |

## DFNWB2X3-6L Tape Leader and Trailer




## DFNWB2X3-6L Reel




| Dimensions are in millimeter | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Reel Option | D | D1 | D2 | G | H | I | W1 | W2 |
| 7"Dia | Ø180.00 | 60.00 | 13.00 | R78.00 | R25.60 | R6.50 | 9.50 | 13.10 |

| REEL | Reel Size | Box | Box Size(mm) | Carton | Carton Size(mm) | G.W.(kg) |
|---|---|---|---|---|---|---|
| 3000 pcs | 7 inch | 30,000 pcs | 203×203×195 | 120,000 pcs | 438×438×220 | |