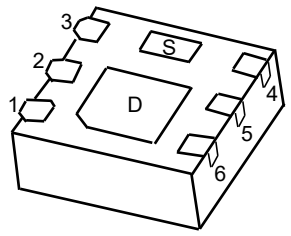
SZCJ

# DFNWB2×2-6L Plastic-Encapsulate MOSFET

## CJMN3010L N-Channel MOSFET

| $V_{(BR)DSS}$ | $R_{DS(on)}$TYP | $I_D$ |
|---|---|---|
| 30V | 8.3mΩ@ 4.5V | 10A |
| | 8.4mΩ@ 3.7V | |
| | 10mΩ@ 2.5V | |
| | 13mΩ@ 1.8V | |

**DFNWB2×2-6L**



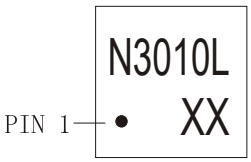

### FEATURES

- TrenchFET Power MOSFET
- Small package DFNWB2×2-6L
- ESD Protected

### APPLICATION

- Load Switch for Portable Applications

### MARKING:

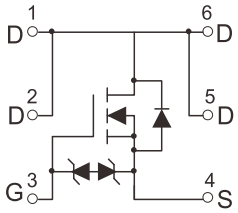



N3010L = Part No.

Solid dot = Pin1 indicator.

XX = Code.

### Equivalent Circuit




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

| Parameter | | Symbol | Value | Unit |
|---|---|---|---|---|
| Drain-Source Voltage | | $V_{DS}$ | 30 | V |
| Gate-Source Voltage | | $V_{GS}$ | ±10 | V |
| Continuous Drain Current | $T_A$=25℃ | $I_D$⑥ | 10 | A |
| | $T_A$ =75℃ | | 7.8 | |
| Pulsed Drain Current | | $I_{DM}$①② | 40 | A |
| Single Pulsed Avalanche Energy | | $E_{AS}$③ | 45 | mJ |
| Maximum Power Dissipation | | $P_D$①⑥ | 2.78 | W |
| Operating Junction and Storage Temperature Range | | $T_J$ ,$T_{stg}$ | -55~+150 | ℃ |

### Thermal Characteristics

| Parameter | | Symbol | Value | | Unit |
|---|---|---|---|---|---|
| | | | Typ | Max | |
| Thermal Resistance from Junction to Ambient | t≤10s | $R_{\theta JA}$⑥ | 29 | 45 | ℃/W |
| | Steady State | | 58 | 90 | ℃/W |

## 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 | | 30 | | | V |
| Zero gate voltage drain current | $I_{DSS}$ | $V_{DS}$ =24V, $V_{GS}$ =0V | $T_J$=25℃ | | | 1.0 | μA |
| | | | $T_J$=125℃ | | | 100 | |
| Gate-body leakage current | $I_{GSS}$ | $V_{DS}$ =0V, $V_{GS}$ =±10V | | | | ±9 | μA |
| **On characteristics** ④ | | | | | | | |
| Gate-threshold voltage | $V_{GS(th)}$ | $V_{DS}$ =$V_{GS}$, $I_D$ =250uA | | 0.45 | 0.8 | 1.0 | V |
| Static drain-source on-sate resistance | $R_{DS(on)}$ | $V_{GS}$ =4.5V, $I_D$ =8A | | | 8.3 | 14 | mΩ |
| | | $V_{GS}$ =3.7V, $I_D$ =8A | | | 8.4 | 15 | |
| | | $V_{GS}$ =2.5V, $I_D$ =7.2A | | | 10 | 19 | |
| | | $V_{GS}$ =1.8V, $I_D$ =3.7A | | | 13 | 23 | |
| **Dynamic characteristics** ⑤ | | | | | | | |
| Input capacitance | $C_{iss}$ | $V_{DS}$ =15V,$V_{GS}$ =0V, f =1MHz | | | 1773 | | pF |
| Output capacitance | $C_{oss}$ | | | | 125 | | |
| Reverse transfer capacitance | $C_{rss}$ | | | | 107 | | |
| Gate resistance | $R_g$ | f =1MHz | | | 3 | | Ω |
| **Switching characteristics** ⑤ | | | | | | | |
| Total gate charge | $Q_g$ | $V_{GS}$=6V, $V_{DS}$=15V, $I_D$=10A | | | 40 | | nC |
| Gate-source charge | $Q_{gs}$ | | | | 3 | | |
| Gate-drain charge | $Q_{gd}$ | | | | 6 | | |
| Turn-on delay time | $t_{d(on)}$ | $V_{DS}$=20V,$I_D$=10A, $V_{GS}$=10V,$R_G$=3Ω | | | 7 | | ns |
| Turn-on rise time | $t_r$ | | | | 45 | | |
| Turn-off delay time | $t_{d(off)}$ | | | | 48 | | |
| Turn-off fall time | $t_f$ | | | | 74 | | |
| **Drain-Source Diode Characteristics** | | | | | | | |
| Drain-source diode forward voltage | $V_{SD}$ ④ | $V_{GS}$ =0V, $I_S$=2A | | | | 1.2 | V |
| Continuous drain-source diode forward current | $I_S$ ① | | | | | 10 | A |
| Pulsed drain-source diode forward current | $I_{SM}$ ①② | | | | | 40 | A |

Notes:

1.Limited only by maximum temperature allowed.

2.$P_W$≤10μs, Duty cycle≤1%.

3.EAS condition: $V_{DD}$=20V,$V_{GS}$=6V, L=0.5mH, $R_g$=25Ω Starting $T_J$ = 25℃.

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

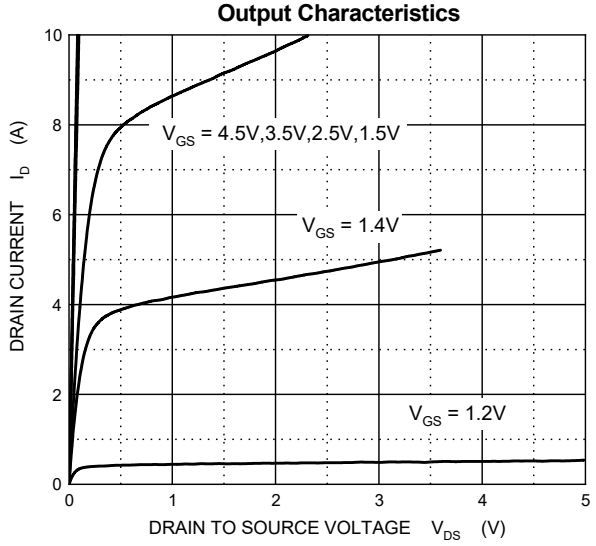
5.Guaranteed by design, not subject to production.

6.Device mounted on 1 $in^2$ FR-4 board with 2oz. double-sided Copper, in a still air environment with TA=25℃.The current rating is based on the ≤10s thermal resistance rating.

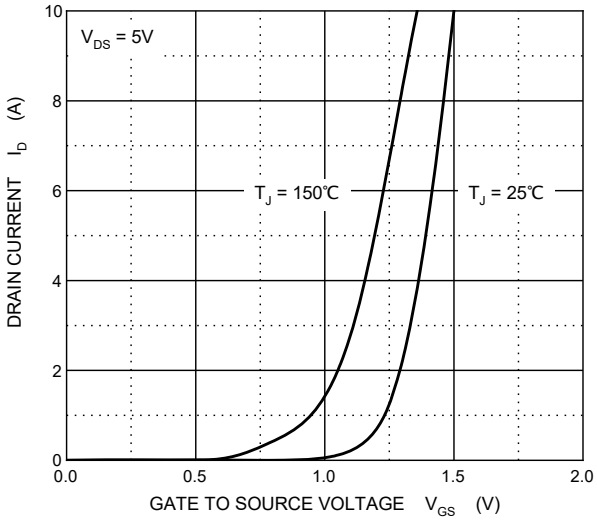

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## Typical Characteristics

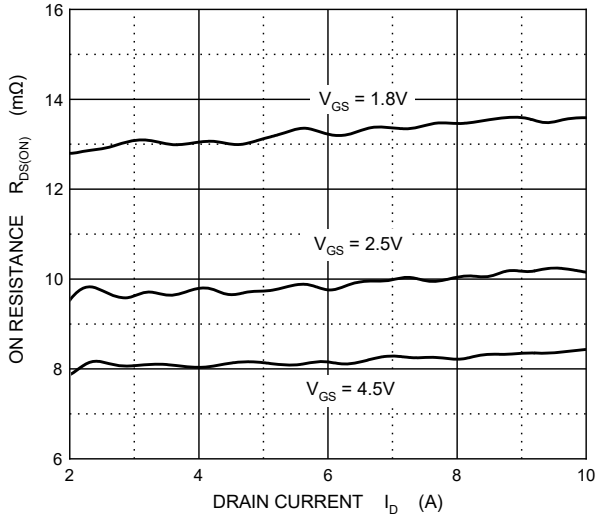
**Output Characteristics**



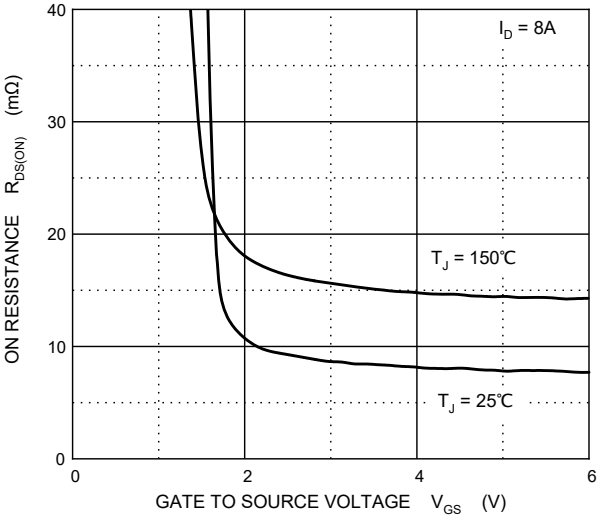

**Transfer Characteristics**



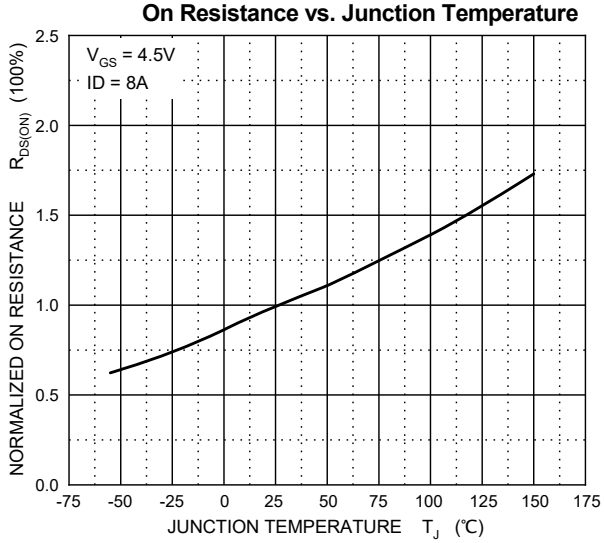

**On Resistance vs. Drain Current**



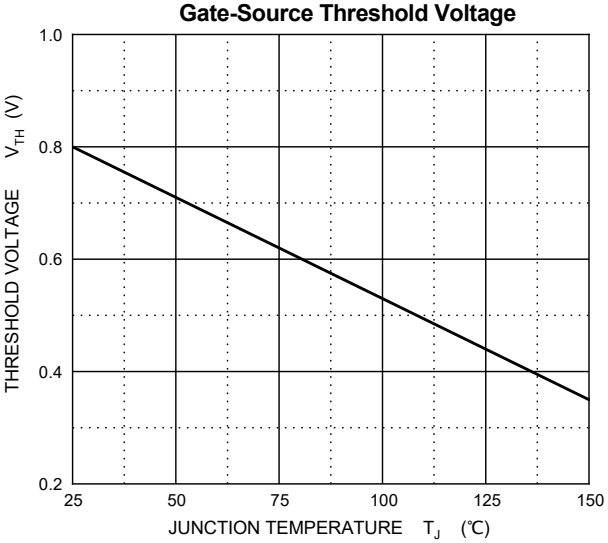

**On Resistance vs. Gate-Source Bias**




**On Resistance vs. Junction Temperature**

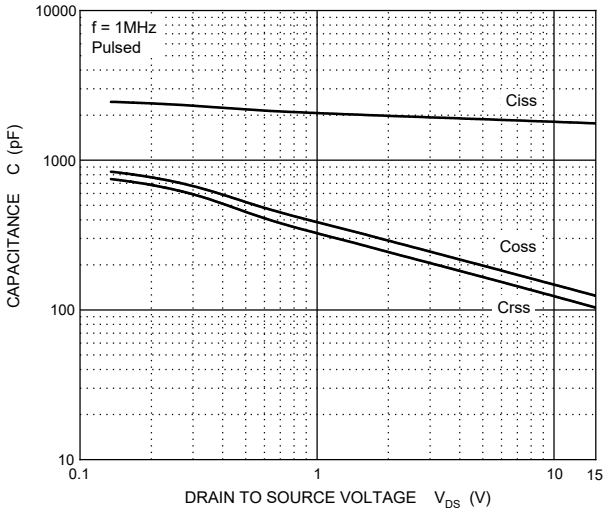



**Gate-Source Threshold Voltage**

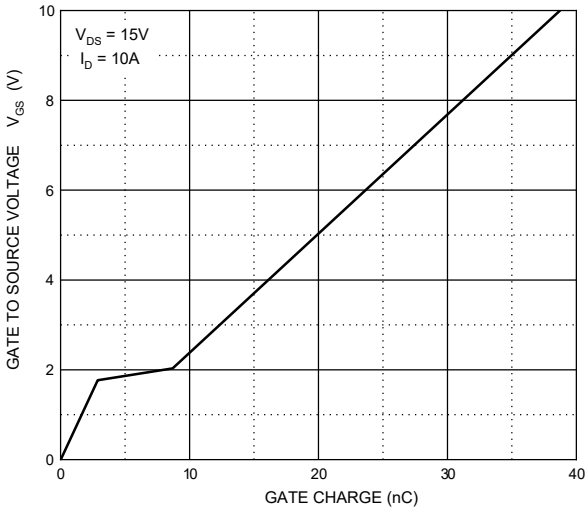


# Typical Characteristics

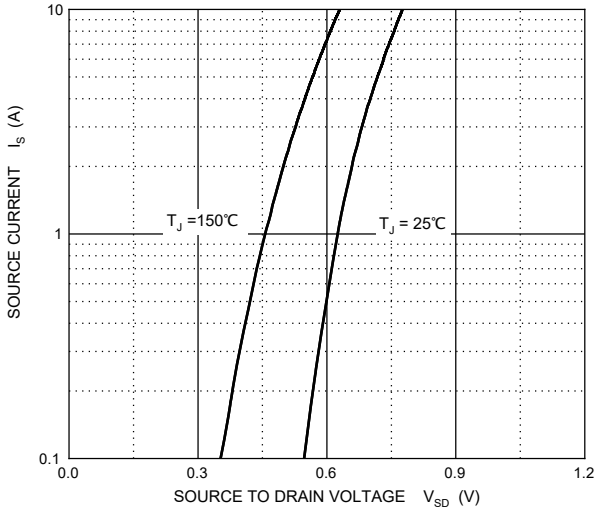
**Typical Capacitances**



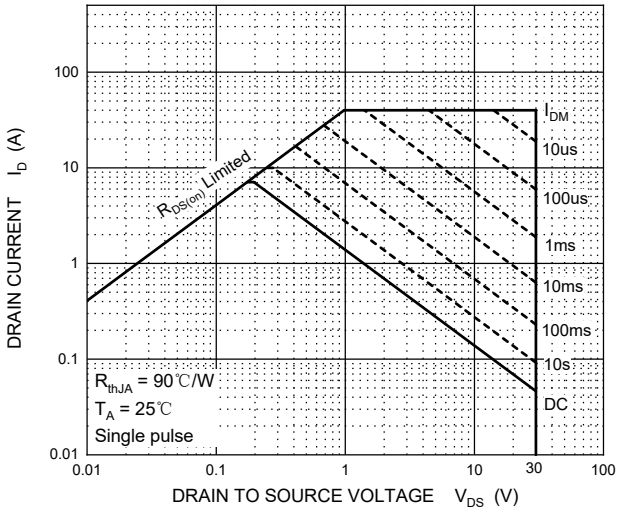

**Gate Charge**



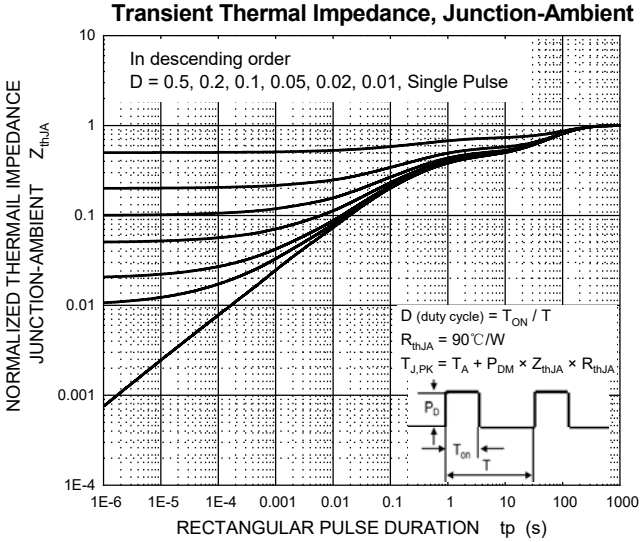

**Source-Drain Diode Forward Characteristics**



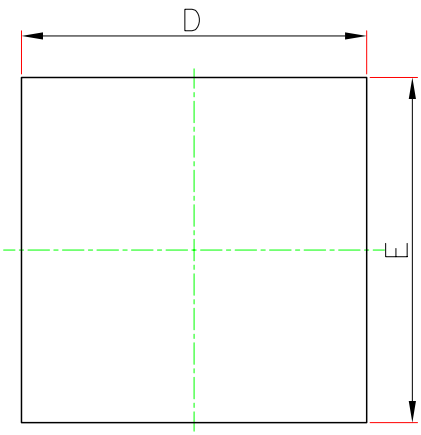

**Maximum Safe Operating Area**



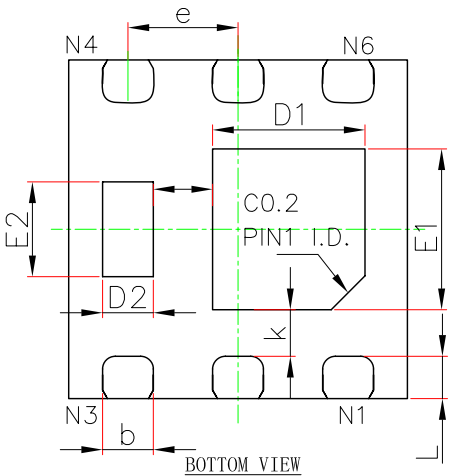

**Transient Thermal Impedance, Junction-Ambient**



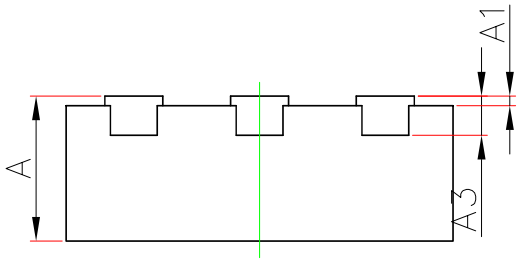
## DFNWB2X2-6L-J Package Outline Dimensions




TOP VIEW
[顶视图]



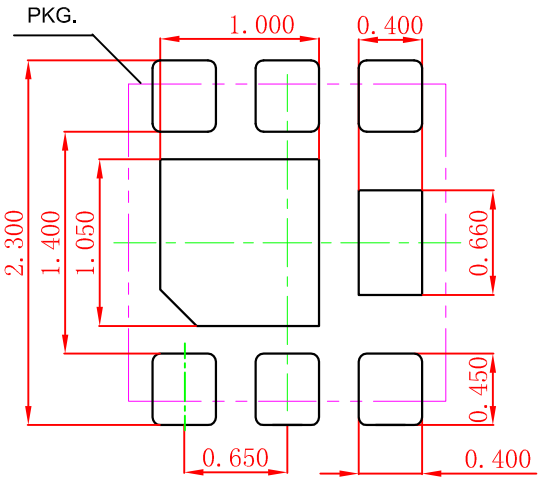

BOTTOM VIEW
[背视图]




SIDE VIEW
[侧视图]

| Symbols | Dimensions in Milimeters | | 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 | 1.900 | 2.100 | 0.075 | 0.083 |
| E | 1.900 | 2.100 | 0.075 | 0.083 |
| D1 | 0.800 | 1.000 | 0.031 | 0.039 |
| E1 | 0.850 | 1.050 | 0.033 | 0.041 |
| D2 | 0.200 | 0.400 | 0.008 | 0.016 |
| E2 | 0.460 | 0.660 | 0.018 | 0.026 |
| b | 0.250 | 0.350 | 0.010 | 0.014 |
| e | 0.650BSC. | | 0.026BSC. | |
| k | 0.275REF. | | 0.011REF. | |
| k1 | 0.350REF. | | 0.014REF. | |
| L | 0.174 | 0.326 | 0.007 | 0.013 |

## DFNWB2X2-6L-J Suggested Pad Layout



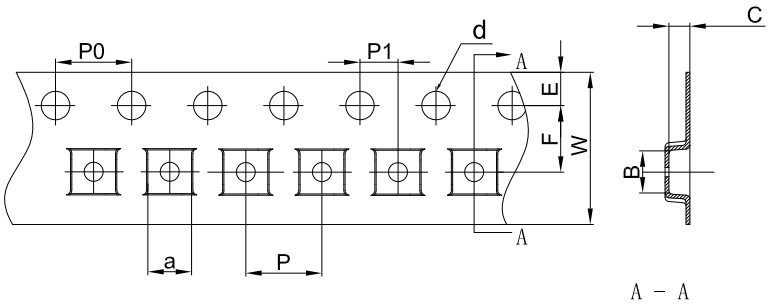

Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.050mm.
3.The pad layout is for reference purposes only.

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

## DFNWB2X2-6L Tape and Reel

### DFNWB2×2-6L Embossed Carrier Tape

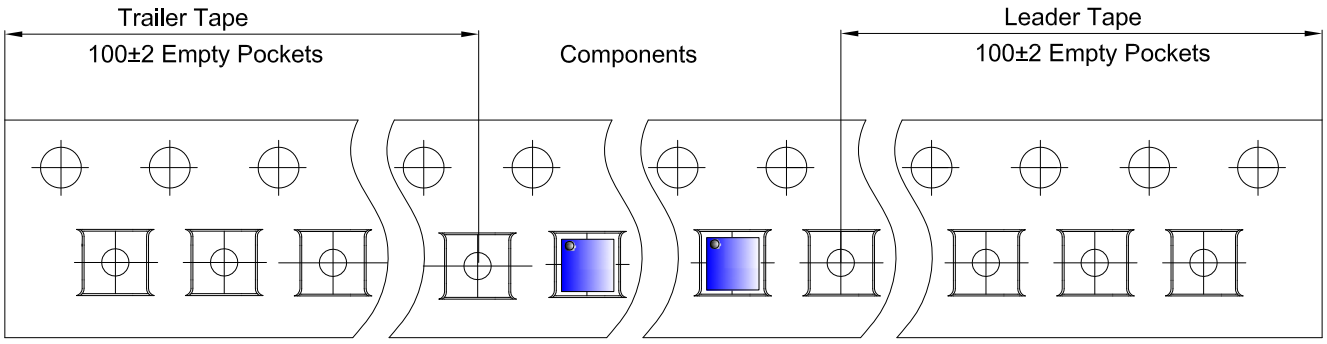



Packaging Description:

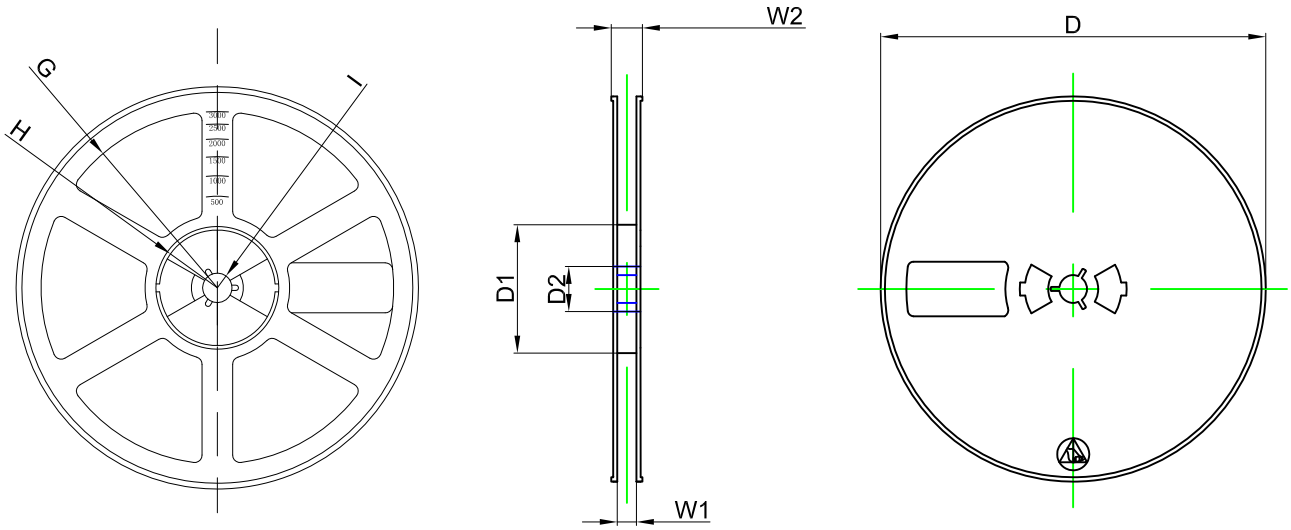
DFNWB2×2-6L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts 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 |
| DFNWB2×2-6L | 2.30 | 2.30 | 1.10 | Ø1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |

### DFNWB2×2-6L Tape Leader and Trailer




### DFNWB2×2-6L 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 | |