



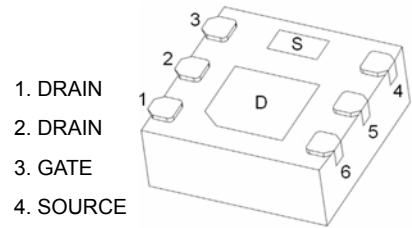
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

## **DFNWB2×2-6L Plastic-Encapsulate MOSFETS**

### **CJM1206** P-Channel Power MOSFET

| $V_{(BR)DSS}$ | $R_{DS(on)TYP}$ | $I_D$ |
|---------------|-----------------|-------|
| -12V          | 30 mΩ@-4.5V     | -6A   |
|               | 40 mΩ@-2.5V     |       |
|               | 60 mΩ@-1.8V     |       |

**DFNWB2×2-6L**



1. DRAIN  
2. DRAIN  
3. GATE  
4. SOURCE  
5. DRAIN  
6. DRAIN

### **DESCRIPTION**

The CJM1206 uses advanced trench technology to provide excellent  $R_{DS(on)}$ , low gate charge and operation with low gate voltage. This device is suitable for use as a load switching application and a wide variety of other applications.

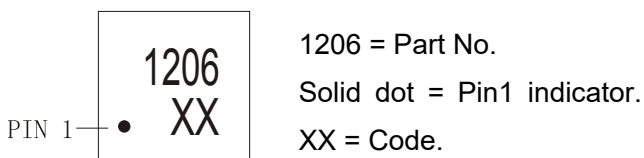
### **FEATURES**

- Advanced trench MOSFET process technology
- Ultra low on-resistance with low gate charge

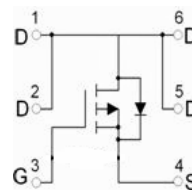
### **APPLICATIONS**

- PWM application
- Load switch
- Battery charge in cellular handset

### **MARKING**



### **Equivalent Circuit**



### **Maximum ratings ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)**

| Parameter                                        | Symbol          | Value      | Unit                 |
|--------------------------------------------------|-----------------|------------|----------------------|
| Drain-Source Voltage                             | $V_{DS}$        | -12        | V                    |
| Gate-Source Voltage                              | $V_{GS}$        | $\pm 8$    |                      |
| Drain Current-Continuous                         | $I_D$           | -6         | A                    |
| Drain Current-Pulsed                             | $I_{DM}^*$      | -20        |                      |
| Thermal Resistance from Junction to Ambient      | $R_{\theta JA}$ | 357        | $^{\circ}\text{C/W}$ |
| Operation Junction and Storage Temperature Range | $T_J, T_{STG}$  | -55 ~ +150 | $^{\circ}\text{C}$   |

\*Repetitive rating: Pluse width limited by junction temperature.

# MOSFET ELECTRICAL CHARACTERISTICS

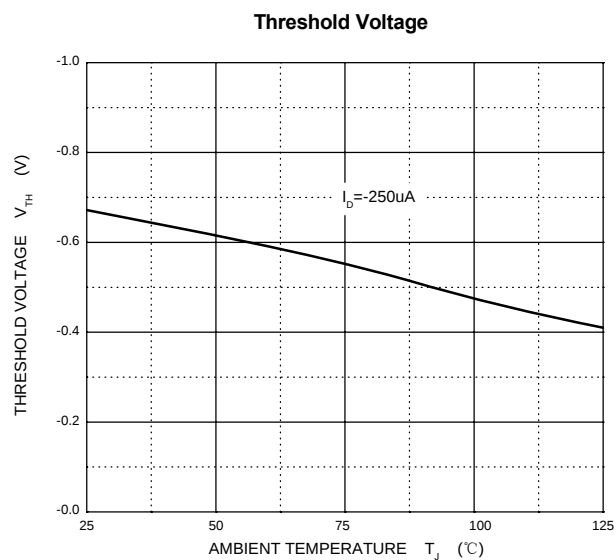
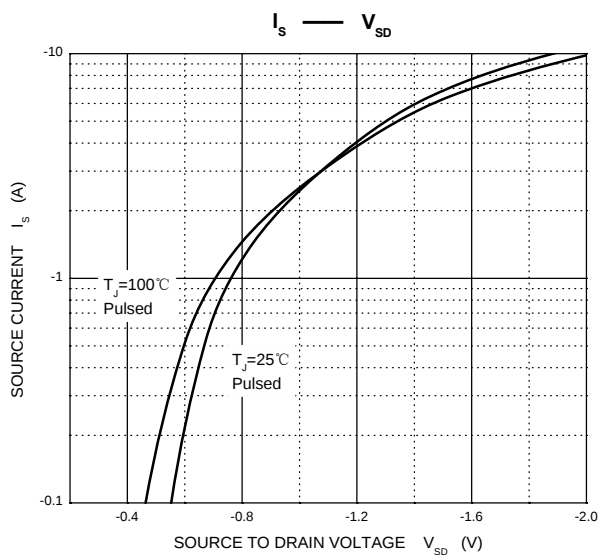
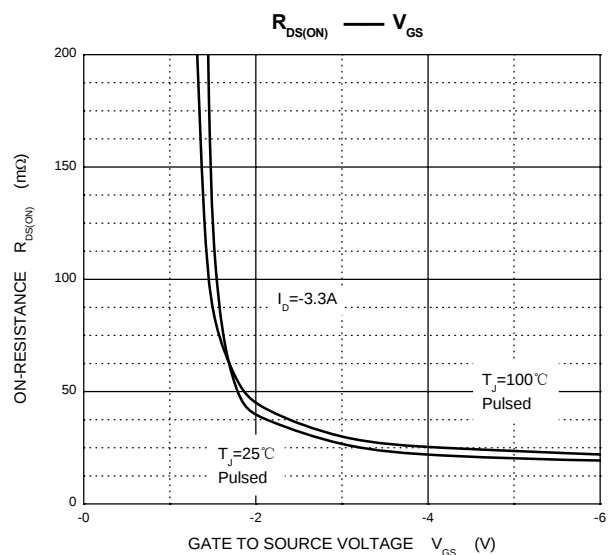
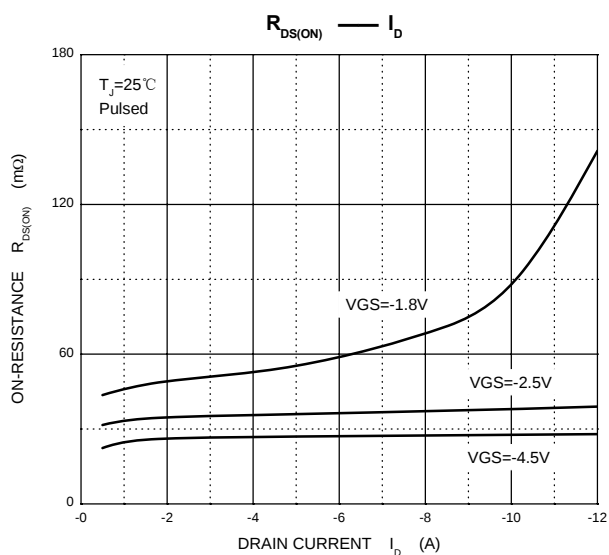
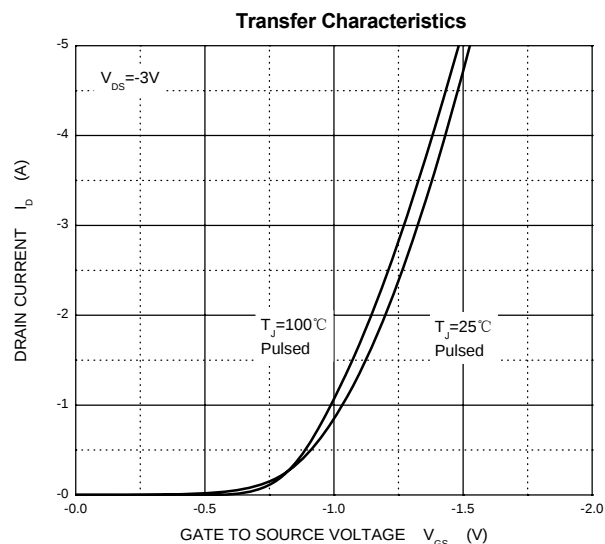
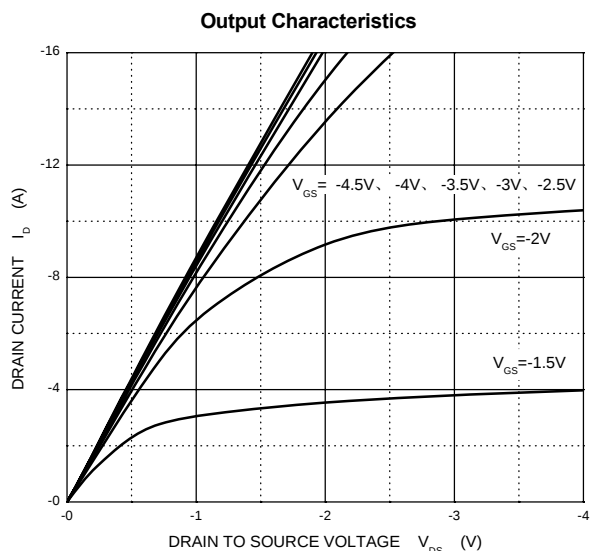
$T_a = 25^\circ\text{C}$  unless otherwise specified

| Parameter                                     | Symbol        | Test Condition                                                                     | Min  | Typ | Max       | Units      |
|-----------------------------------------------|---------------|------------------------------------------------------------------------------------|------|-----|-----------|------------|
| Static                                        |               |                                                                                    |      |     |           |            |
| Drain-source breakdown voltage                | $V_{(BR)DSS}$ | $V_{GS} = 0V, I_D = -250\mu A$                                                     | -12  |     |           | V          |
| Gate-source threshold voltage                 | $V_{GS(th)}$  | $V_{DS} = V_{GS}, I_D = -250\mu A$                                                 | -0.5 |     | -0.9      |            |
| Gate-source leakage                           | $I_{GSS}$     | $V_{DS} = 0V, V_{GS} = \pm 8V$                                                     |      |     | $\pm 100$ | nA         |
| Zero gate voltage drain current               | $I_{DSS}$     | $V_{DS} = -8V, V_{GS} = 0V$                                                        |      |     | -1        | $\mu A$    |
| Drain-source on-state resistance <sup>a</sup> | $R_{DS(on)}$  | $V_{GS} = -4.5V, I_D = -3.5A$                                                      |      | 30  | 45        | m $\Omega$ |
|                                               |               | $V_{GS} = -2.5V, I_D = -3A$                                                        |      | 40  | 60        |            |
|                                               |               | $V_{GS} = -1.8V, I_D = -2.0A$                                                      |      | 60  | 90        |            |
| Forward transconductance <sup>a</sup>         | $g_{fs}$      | $V_{DS} = -5V, I_D = -4.1A$                                                        | 6    |     |           | S          |
| Dynamic                                       |               |                                                                                    |      |     |           |            |
| Input capacitance <sup>b,c</sup>              | $C_{iss}$     | $V_{DS} = -4V, V_{GS} = 0V, f = 1MHz$                                              |      | 740 |           | pF         |
| Output capacitance <sup>b,c</sup>             | $C_{oss}$     |                                                                                    |      | 290 |           |            |
| Reverse transfer capacitance <sup>b,c</sup>   | $C_{rss}$     |                                                                                    |      | 190 |           |            |
| Total gate charge <sup>b</sup>                | $Q_g$         | $V_{DS} = -4V, V_{GS} = -4.5V, I_D = -4.1A$                                        |      | 7.8 | 15        | nC         |
|                                               |               | $V_{DS} = -4V, V_{GS} = -2.5V, I_D = -4.1A$                                        |      | 4.5 | 9         |            |
| Gate-source charge <sup>b</sup>               | $Q_{gs}$      |                                                                                    |      | 1.2 |           |            |
| Gate-drain charge <sup>b</sup>                | $Q_{gd}$      |                                                                                    |      | 1.6 |           |            |
| Gate resistance <sup>b,c</sup>                | $R_g$         | $f = 1MHz$                                                                         | 1.4  | 7   | 14        | $\Omega$   |
| Turn-on delay time <sup>b,c</sup>             | $t_{d(on)}$   | $V_{DD} = -4V, R_L = 1.2\Omega, I_D \approx -3.3A, V_{GEN} = -4.5V, R_g = 1\Omega$ |      | 13  | 20        | ns         |
| Rise time <sup>b,c</sup>                      | $t_r$         |                                                                                    |      | 35  | 53        |            |
| Turn-off Delay time <sup>b,c</sup>            | $t_{d(off)}$  |                                                                                    |      | 32  | 48        |            |
| Fall time <sup>b,c</sup>                      | $t_f$         |                                                                                    |      | 10  | 20        |            |
| Turn-on delay time <sup>b,c</sup>             | $t_{d(on)}$   | $V_{DD} = -4V, R_L = 1.2\Omega, I_D \approx -3.3A, V_{GEN} = -8V, R_g = 1\Omega$   |      | 5   | 10        |            |
| Rise time <sup>b,c</sup>                      | $t_r$         |                                                                                    |      | 11  | 17        |            |
| Turn-off delay time <sup>b,c</sup>            | $t_{d(off)}$  |                                                                                    |      | 22  | 33        |            |
| Fall time <sup>b,c</sup>                      | $t_f$         |                                                                                    |      | 16  | 24        |            |
| Drain-source body diode characteristics       |               |                                                                                    |      |     |           |            |
| Continuous source-drain diode current         | $I_S$         |                                                                                    |      |     | -6        | A          |
| Pulse diode forward current <sup>a</sup>      | $I_{SM}$      |                                                                                    |      |     | -20       |            |
| Body diode voltage                            | $V_{SD}$      | $I_F = -3.3A$                                                                      |      |     | -1.2      | V          |

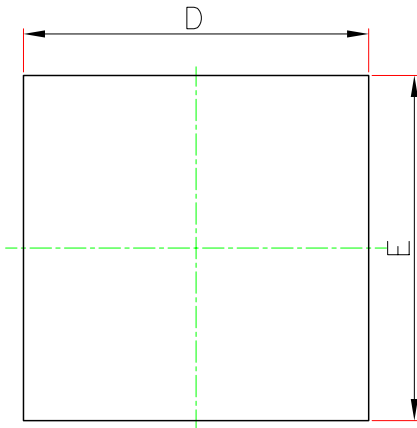
## Note :

- Pulse Test ; Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .
- Guaranteed by design, not subject to production testing.
- These parameters have no way to verify.

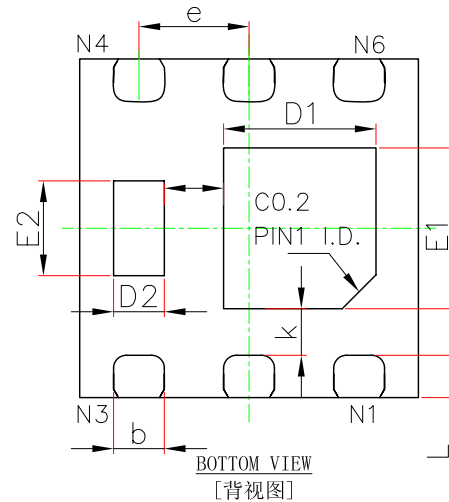
# Typical Characteristics



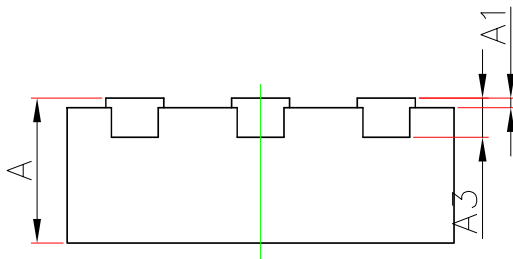
## DFNWB2×2-6L-J Package Outline Dimensions



TOP VIEW  
[顶视图]



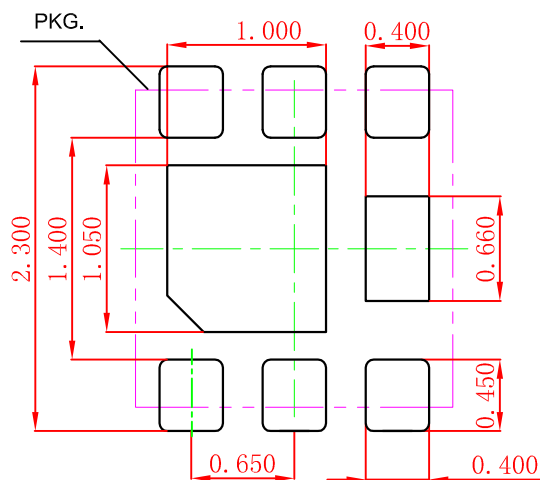
BOTTOM VIEW  
[背视图]



SIDE VIEW  
[侧视图]

| Symbols | 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       | 1.900                     | 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 |

## DFNWB2×2-6L-J Suggested Pad Layout



Note:

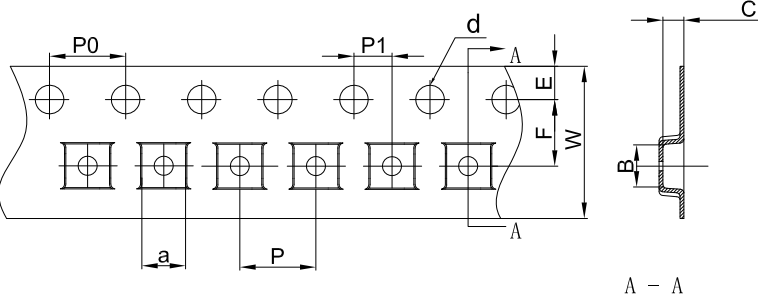
1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.050\text{mm}$ .
3. The pad layout is for reference purposes only.

### NOTICE

JSCJ reserves the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JSCJ does not assume any liability arising out of the application or use of any product described herein.

DFNWB2X2-6L Tape and Reel

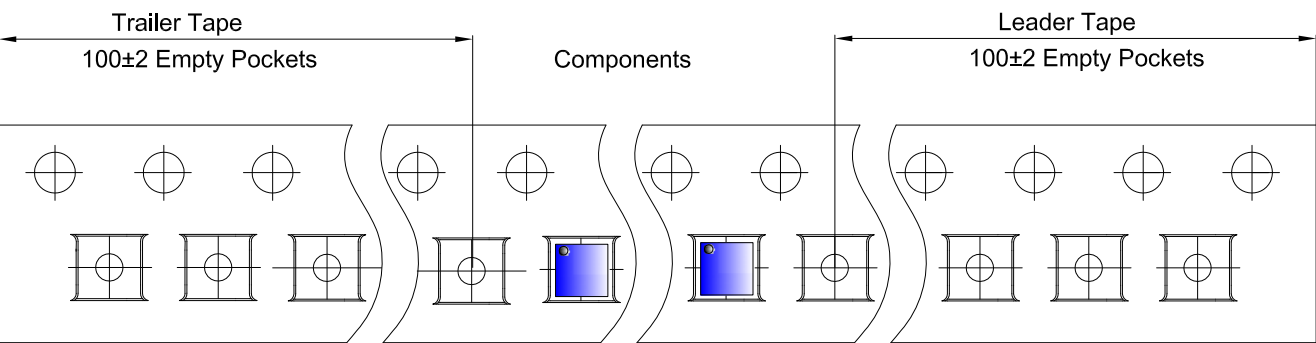
DFNWB2×2-6L Embossed Carrier Tape



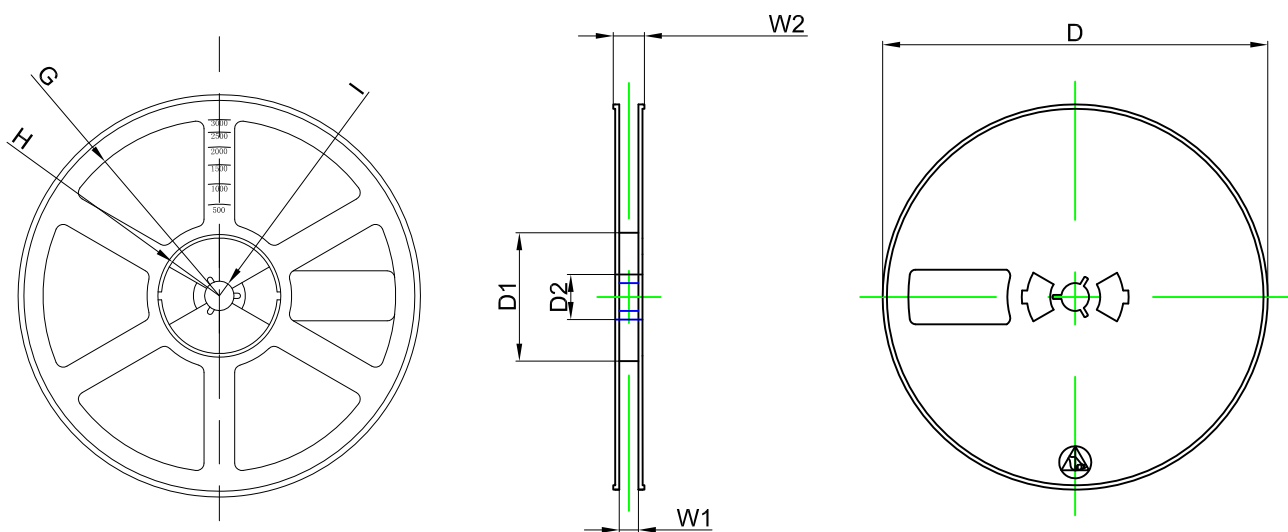
**Packaging Description:**  
DFNWB2×2-6L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed 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     |          |