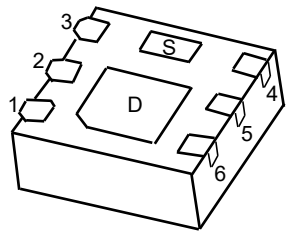
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

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



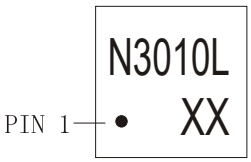
FEATURES

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

APPLICATION

- Load Switch for Portable Applications

MARKING:

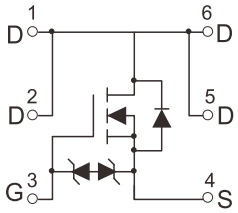


N3010L = Part No.

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_D⑥	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_D①⑥	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℃.

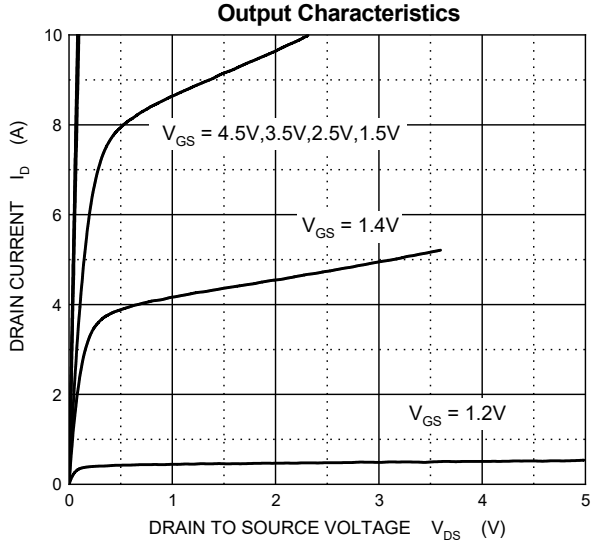
4.Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.

5.Guaranteed by design, not subject to production.

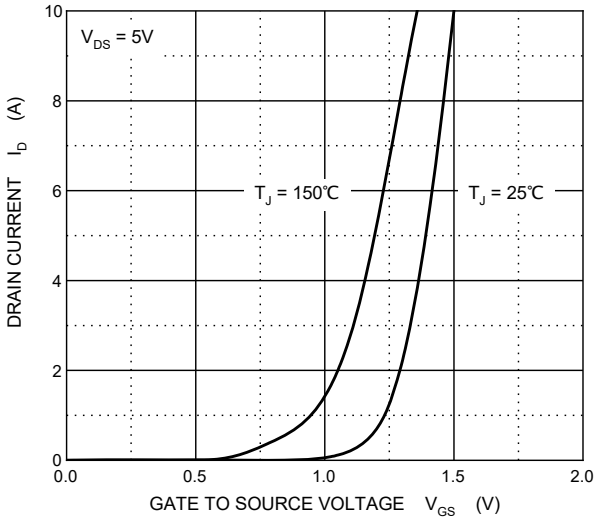
6.Device mounted on 1 in^2 FR-4 board with 2oz. double-sided Copper, in a still air environment with TA=25℃.The current rating is based on the ≤10s thermal resistance rating.

Typical Characteristics

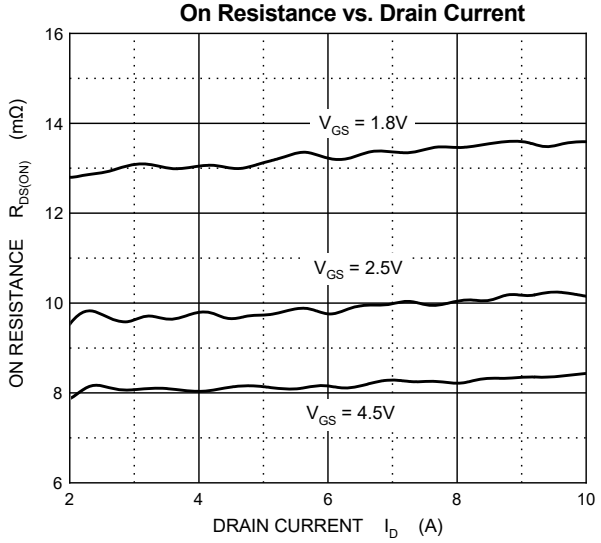
Output Characteristics



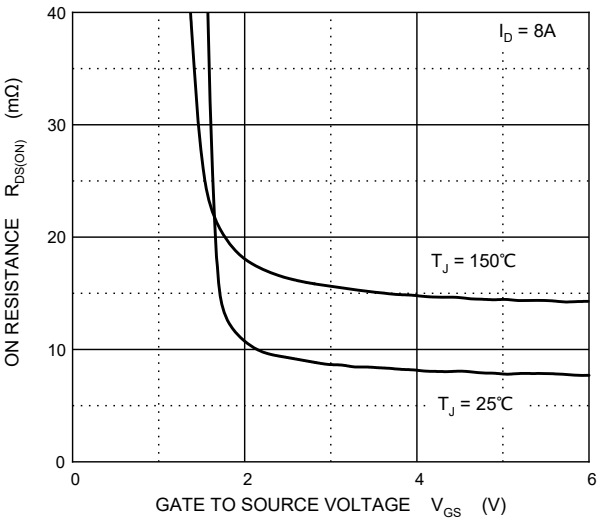
Transfer Characteristics



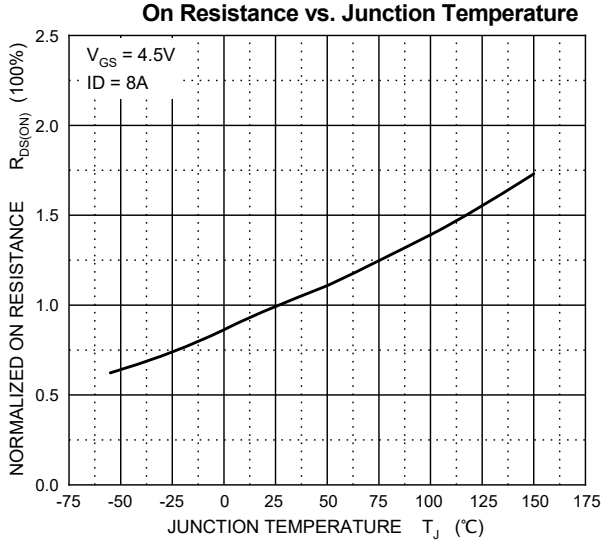
On Resistance vs. Drain Current



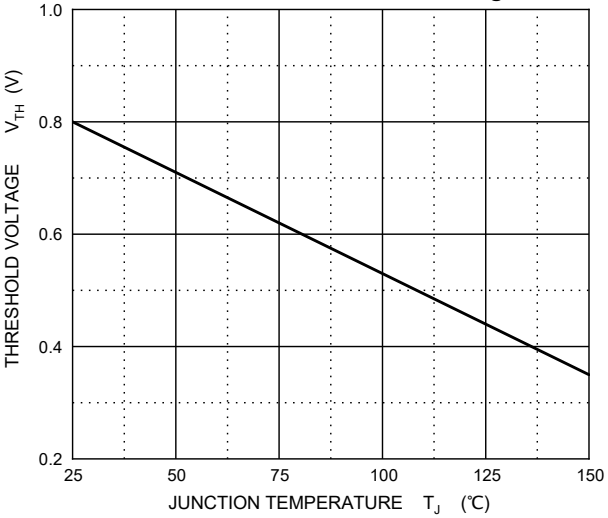
On Resistance vs. Gate-Source Bias



On Resistance vs. Junction Temperature

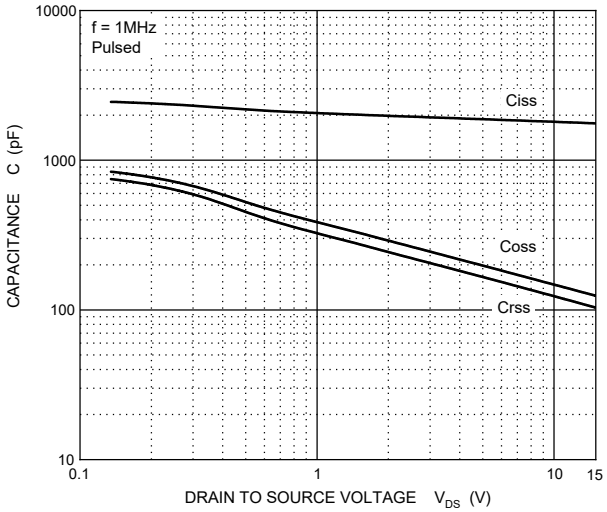


Gate-Source Threshold Voltage

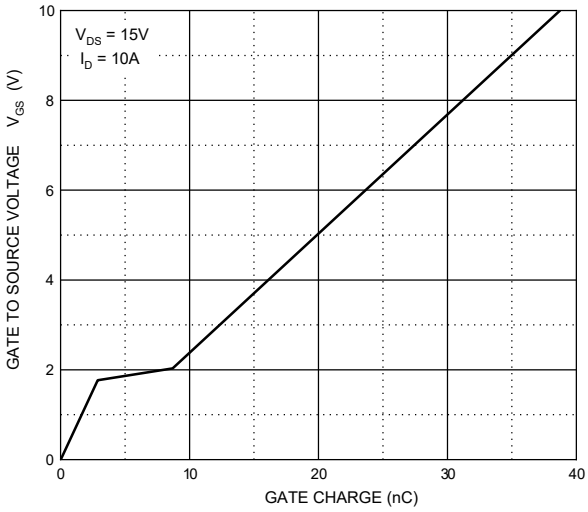


Typical Characteristics

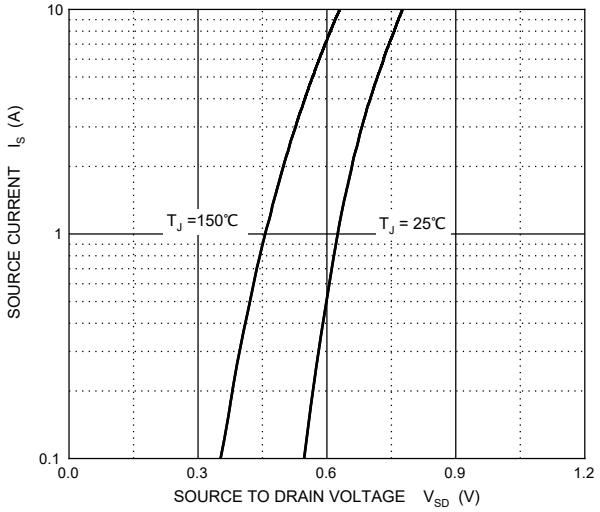
Typical Capacitances



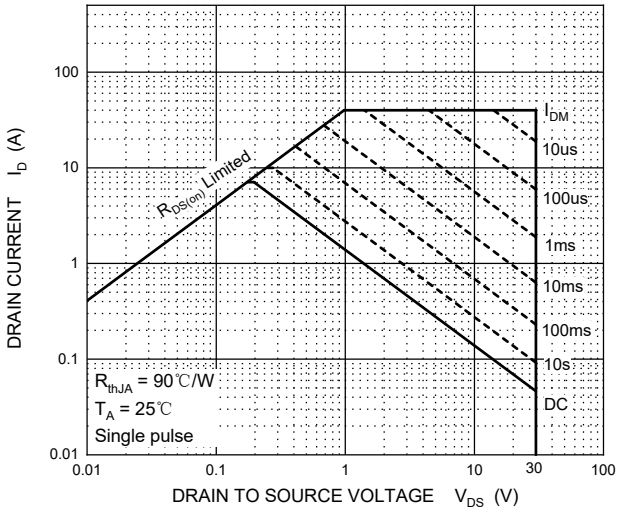
Gate Charge



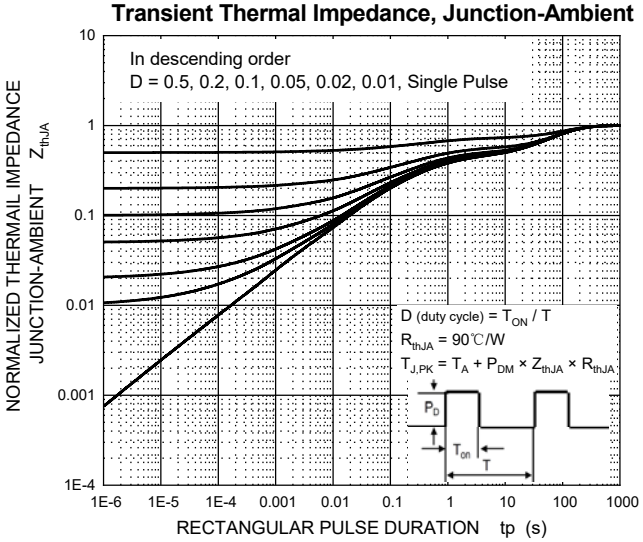
Source-Drain Diode Forward Characteristics



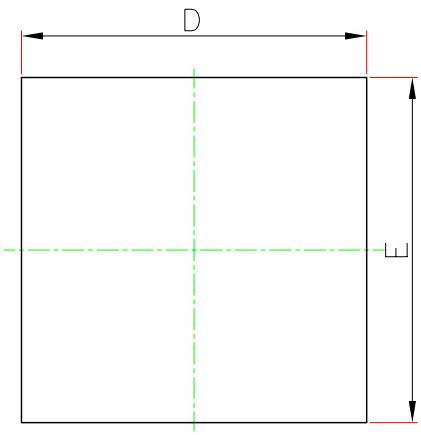
Maximum Safe Operating Area



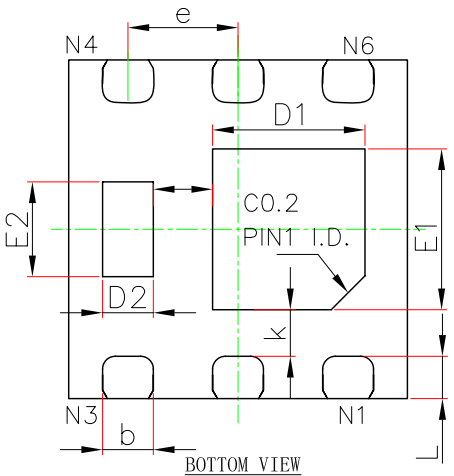
Transient Thermal Impedance, Junction-Ambient



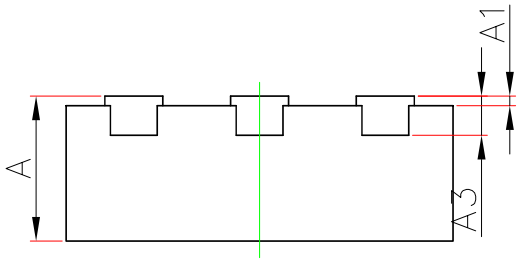
DFNWB2X2-6L-J Package Outline Dimensions



TOP VIEW
[顶视图]



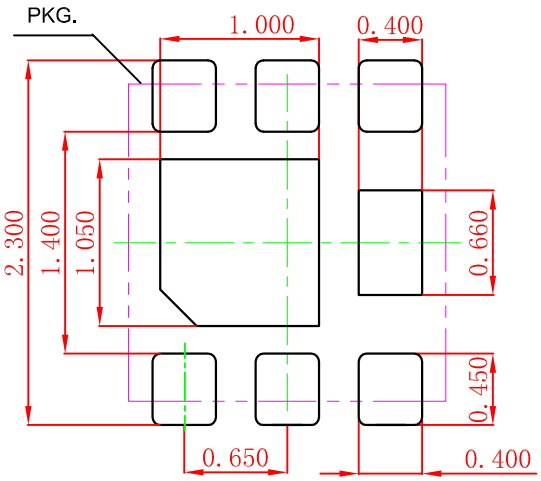
BOTTOM VIEW
[背视图]



SIDE VIEW
[侧视图]

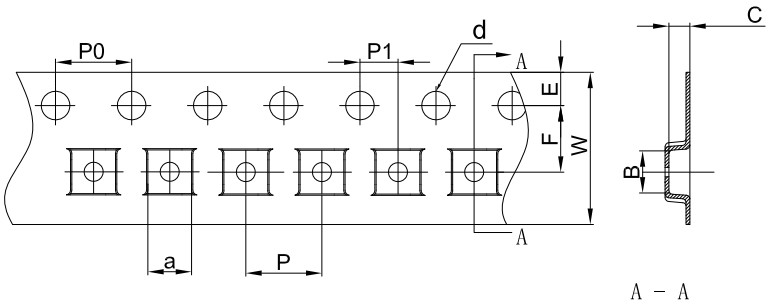
Symbols	Dimensions in Milimeters		Dimensions in Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	1.900	2.100	0.075	0.083
E	1.900	2.100	0.075	0.083
D1	0.800	1.000	0.031	0.039
E1	0.850	1.050	0.033	0.041
D2	0.200	0.400	0.008	0.016
E2	0.460	0.660	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.

DFNWB2×2-6L Embossed Carrier Tape

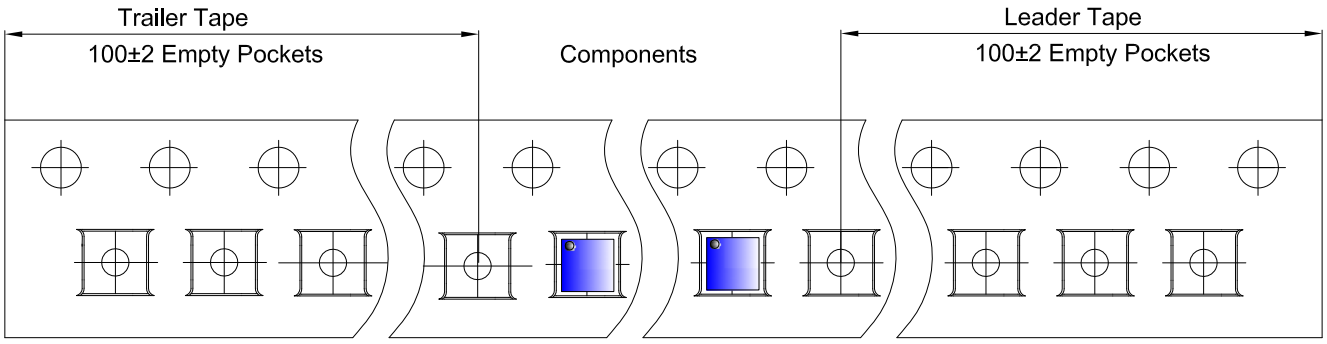


Packaging Description:

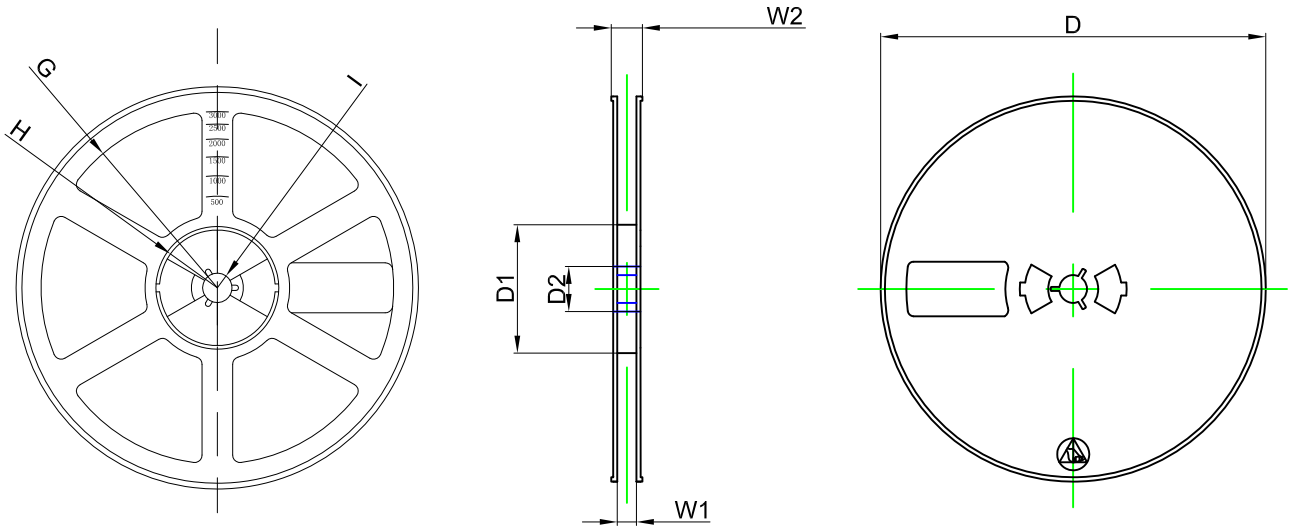
DFNWB2×2-6L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts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