

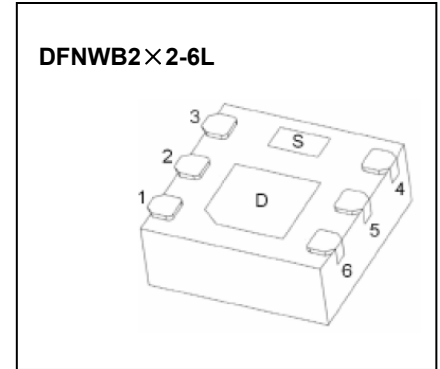


# DFNWB2×2-6L Plastic-Encapsulate MOSFETS

## M3005

## N-Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$ TYP	$I_D$
30V	32 mΩ@10V	5A
	35 mΩ@4.5V	
	42 mΩ@2.5V	



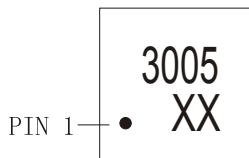
### FEATURE

- TrenchFET Power MOSFET
- Low  $R_{DS(ON)}$
- Typical ESD Protection

### APPLICATION

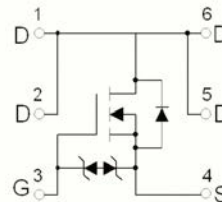
- Ideal for Load Swith and Battery Protection Applications

### MARKING



3005 = Part No.  
 Solid dot = Pin1 indicator.  
 XX = Code.

### Equivalent Circuit



### ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	±10	V
Continuous Drain Current	$I_D$	5	A
Pulsed Drain Current	$I_{DM}^*$	20	A
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	250	$^\circ\text{C/W}$
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

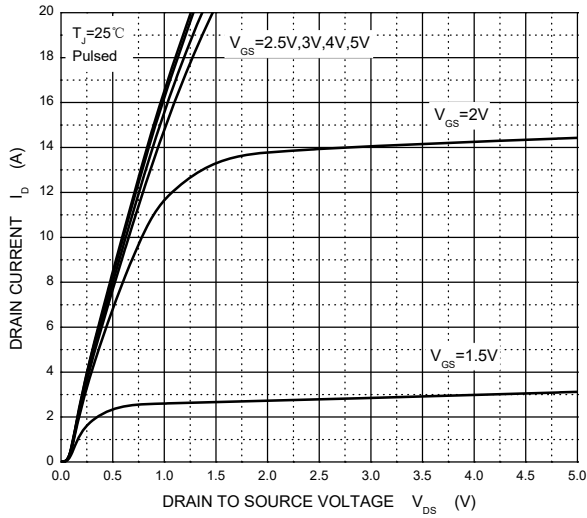
$T_a=25\text{ }^\circ\text{C}$  unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>STATIC PARAMETERS</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 30V, V_{GS} = 0V$			1	$\mu A$
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 10V, V_{DS} = 0V$			$\pm 10$	$\mu A$
Gate threshold voltage(note 1)	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.6		1	V
Drain-source on-resistance (note 1)	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 5A$	22	32	42	m $\Omega$
		$V_{GS} = 4.5V, I_D = 5A$	25	35	44	m $\Omega$
		$V_{GS} = 2.5V, I_D = 4A$	32	42	50	m $\Omega$
Forward tranconductance (note 1)	$g_{FS}$	$V_{DS} = 5V, I_D = 4A$		15		S
Diode forward voltage (note 1)	$V_{SD}$	$I_S = 1A, V_{GS} = 0V$			1	V
<b>DYNAMIC PARAMETERS (note2)</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$		245		pF
Output Capacitance	$C_{oss}$			35		pF
Reverse Transfer Capacitance	$C_{rss}$			20		pF
<b>SWITCHING PARAMETERS (note 2)</b>						
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 15V, V_{GS} = 10V$ $R_L = 3.75\Omega, R_{GEN} = 3\Omega$		2		ns
Turn-on rise time	$t_r$			3.5		ns
Turn-off delay time	$t_{d(off)}$			22		ns
Turn-off fall time	$t_f$			3.5		ns
Total Gate Charge	$Q_g$	$V_{DS} = 15V, V_{GS} = 10V, I_D = 4A$			10	nC
Gate-Source Charge	$Q_{gs}$			0.5		nC
Gate-Drain Charge	$Q_{gd}$			1		nC

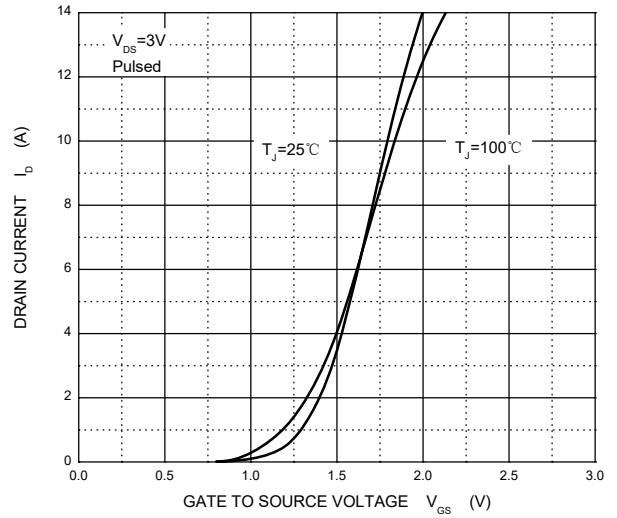
- Notes :**
1. Pulse Test : Pulse width $\leq 300\mu s$ , duty cycle $\leq 0.5\%$ .
  2. Guaranteed by design, not subject to production testing.

# Typical Characteristics

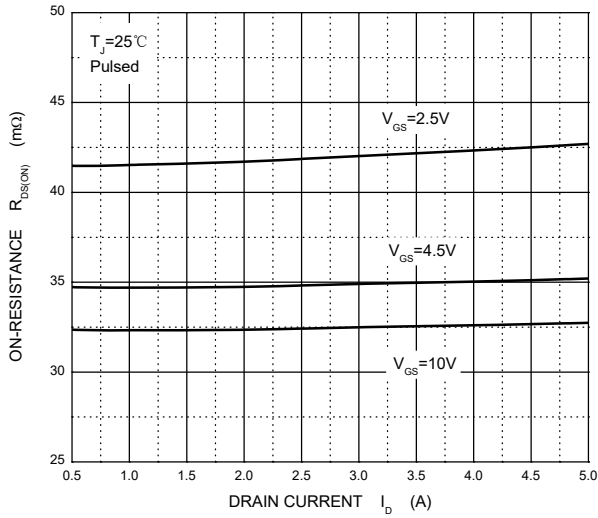
Output Characteristics



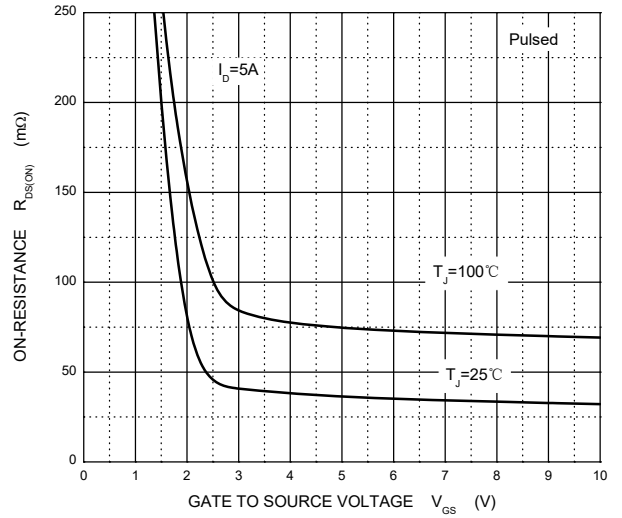
Transfer Characteristics



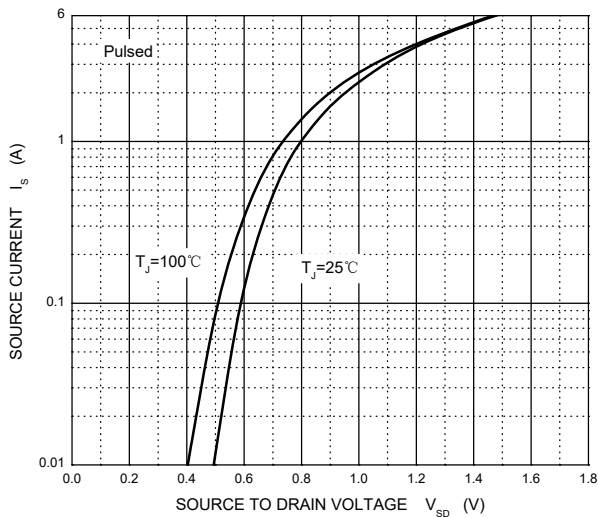
$R_{DS(ON)}$  —  $I_D$



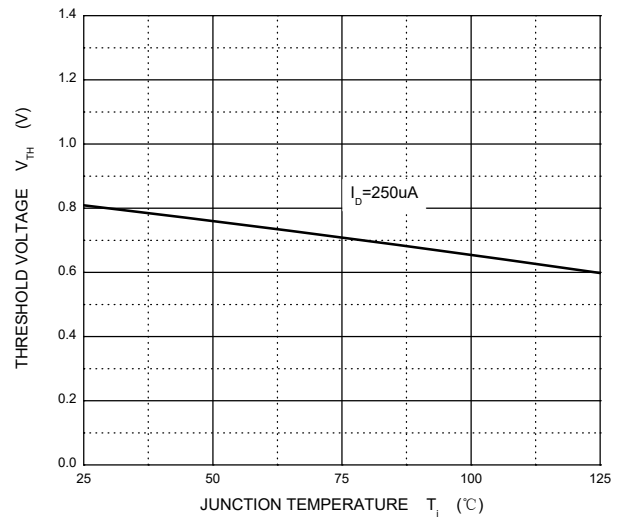
$R_{DS(ON)}$  —  $V_{GS}$



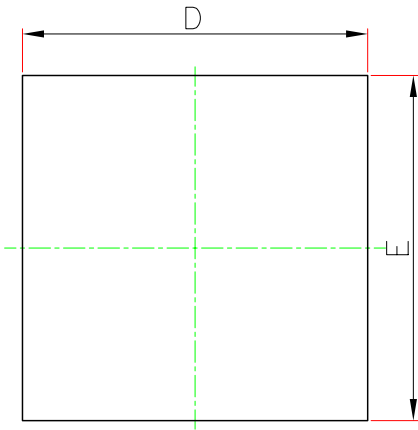
$I_S$  —  $V_{SD}$



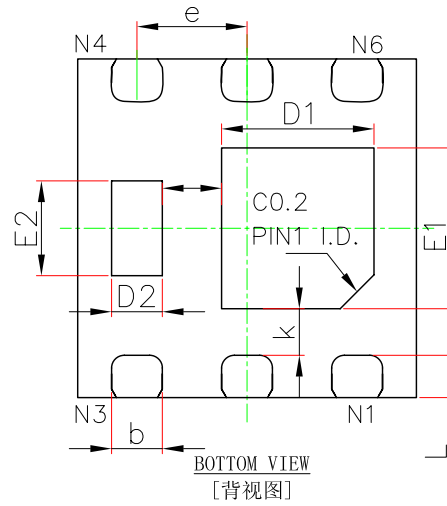
Threshold Voltage



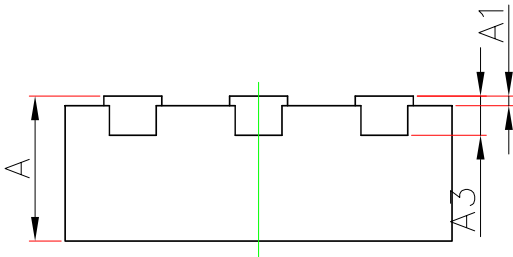
## DFNWB2X2-6L-J Package Outline Dimensions



TOP VIEW  
[顶视图]



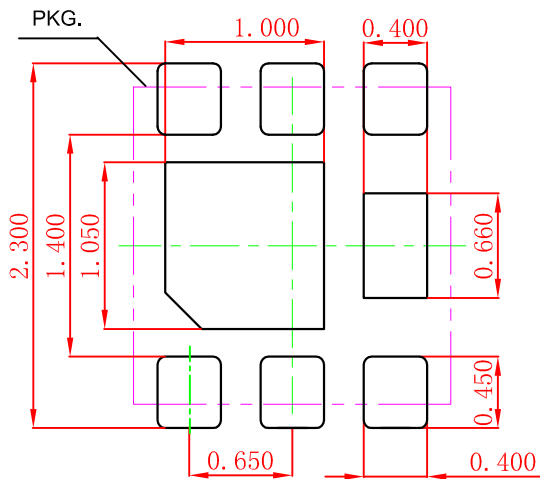
BOTTOM VIEW  
[背视图]



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

## DFNWB2X2-6L-J Suggested Pad Layout

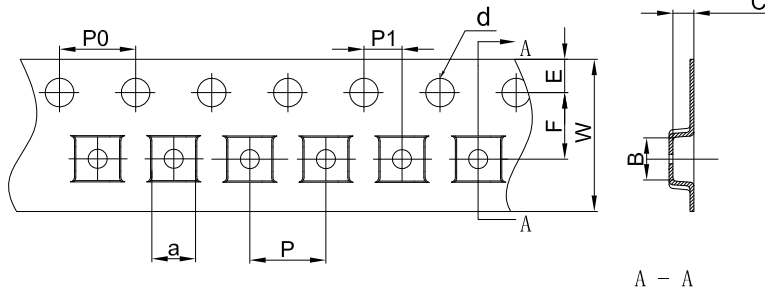


Note:

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

# DFNWB2X2-6L Tape and Reel

## DFNWB2×2-6L Embossed Carrier Tape



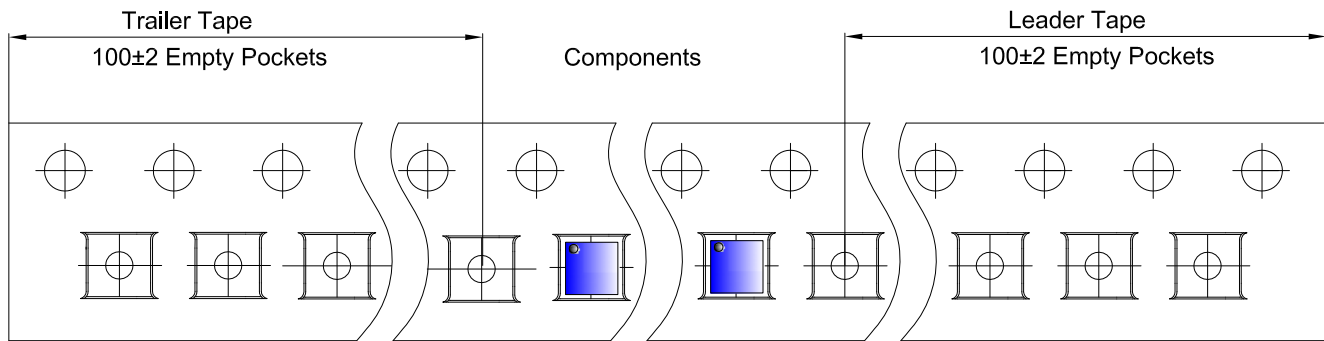
### Packaging Description:

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).

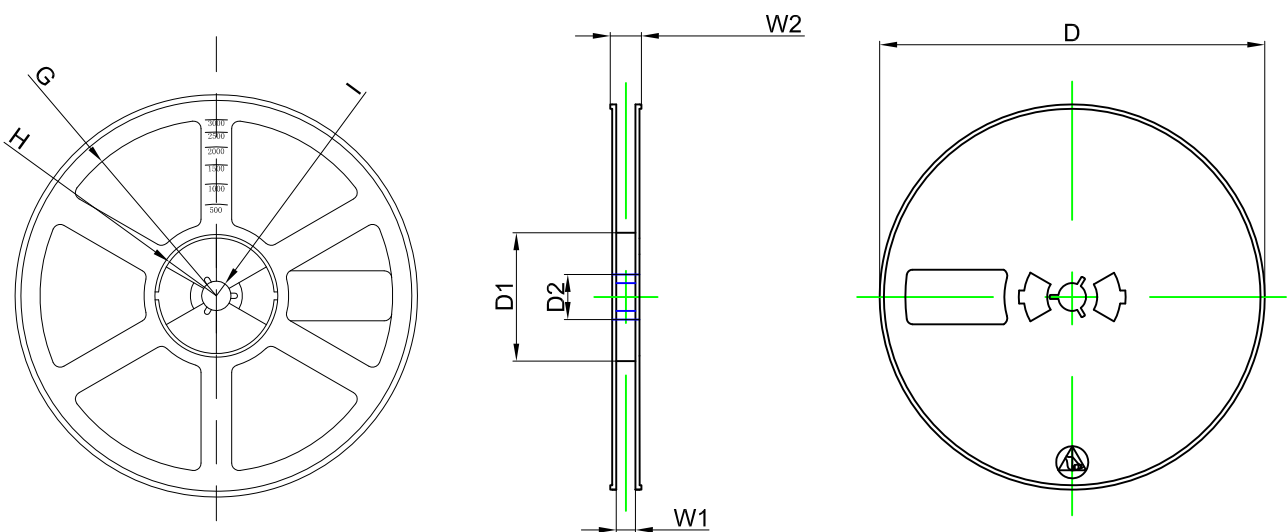
Dimensions are in millimeter

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	