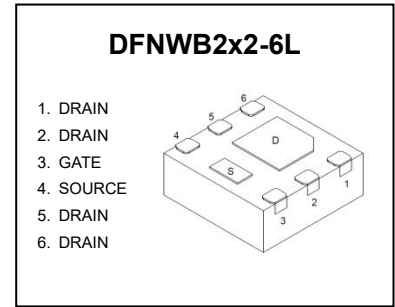


DFNWB2x2-6L Plastic-Encapsulate MOSFET

CJMP2202 P-Channel MOSFET

Key Performance Parameters

$V_{BR(DSS)}$	$R_{DS(on)TYP}$	I_D
-20V	14.5mΩ@-4.5V	-8.6A
	18.5mΩ@-2.5V	



DESCRIPTION

The P-Channel MOSFET uses advanced trench technology to provide excellent $R_{DS(on)}$ with low gate charge. It can be used in a wide variety of applications. .

FEATURES

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

APPLICATIONS

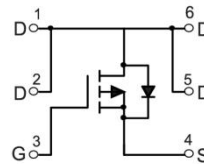
- PWM applications
- Load switch
- Battery charge in cellular handset

MARKING



XXXXX = P2202
 Solid dot = Pin1 indicator.
 YY = Code.

EQUIVALENT CIRCUIT



ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	$I_D^{(6)}$	$T_A=25^\circ\text{C}$	-8.6
		$T_A=75^\circ\text{C}$	-6.7
Avalanche Current	$I_{AS}^{(3)}$	-9	A
Single Pulsed Avalanche Energy	$E_{AS}^{(3)}$	20	mJ
Pulsed Drain Current	$I_{DM}^{(1)(2)}$	-34.4	A
Power Dissipation	$P_D^{(1)(6)}$	2.3	W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55~+150	°C

Thermal Characteristics

Parameter	Symbol	Value		Unit
		Typ	Max	
Thermal Resistance from Junction to Ambient	$R_{\theta JA}^{(6)}$	≤10s	36	°C/W
		Steady State	66	°C/W

Typical Characteristics

ELECTRICAL CHARACTERISTICS ($T_J=25^\circ\text{C}$ unless otherwise specified)

Static Characteristics

Parameter	Symbol	Test Condition	Value			Unit	
			Min	Typ	Max		
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20	-	-	V	
Zero gate voltage drain current	I_{DSS}	$V_{DS} = -20V, V_{GS} = 0V$	$T_J = 25^\circ\text{C}$	-	-	-1.0	μA
			$T_J = 125^\circ\text{C}$	-	-	-100	
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$	-	-	± 100	nA	
Gate-threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.45	-0.68	-1.0	V	
Static drain-source on-state resistance	$R_{DS(on)}^{(4)}$	$V_{GS} = -4.5V, I_D = -7.2A$	$T_J = 25^\circ\text{C}$	-	14.5	22.0	m Ω
			$T_J = 125^\circ\text{C}$	-	18.9	28.7	
		$V_{GS} = -2.5V, I_D = -6.4A$	-	18.5	29.0		

Dynamic Characteristics⁽⁵⁾

Input capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = -10V,$ $f = 1\text{MHz}$	-	1434	-	μF
Output capacitance	C_{oss}		-	196	-	
Reverse transfer capacitance	C_{rss}		-	181	-	
Gate resistance	R_g	$f = 1\text{MHz}$	-	8	-	Ω
Total gate charge	Q_g	$V_{GS} = -2.5V, V_{DS} = -10V, I_D = -5A$	-	10	-	nC
Total gate charge	Q_g	$V_{GS} = -4.5V, V_{DS} = -10V, I_D = -5A$	-	17.5	-	
Gate charge at threshold	$Q_{G(th)}$		-	1.5	-	
Gate-source charge	Q_{gs}		-	2.4	-	
Gate-drain charge	Q_{gd}		-	3.3	-	
Turn-on delay time	$t_{d(on)}$	$V_{DD} = -10V, V_{GS} = -4.5V,$ $I_D = -5A, R_g = 10\Omega$	-	5.1	-	ns
Turn-on rise time	t_r		-	6.8	-	
Turn-off delay time	$t_{d(off)}$		-	77	-	
Turn-off fall time	t_f		-	29	-	

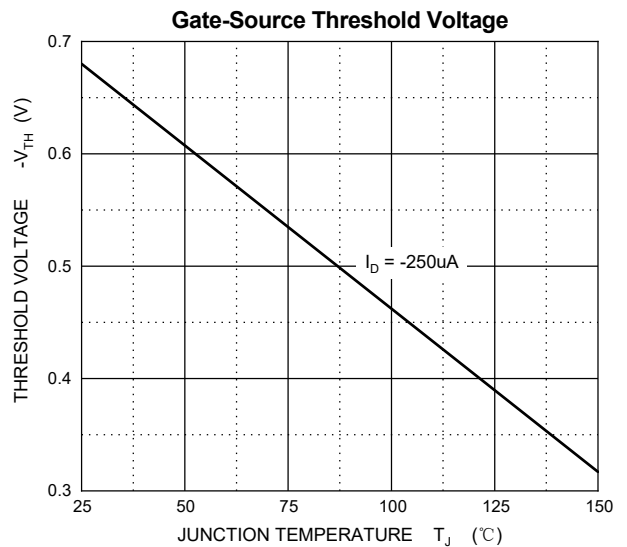
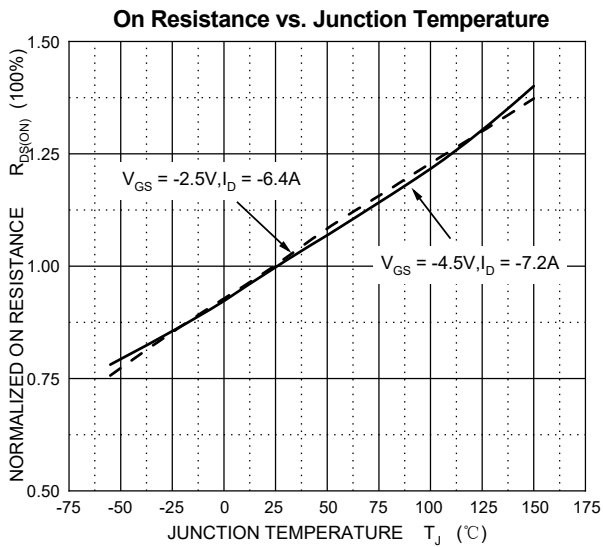
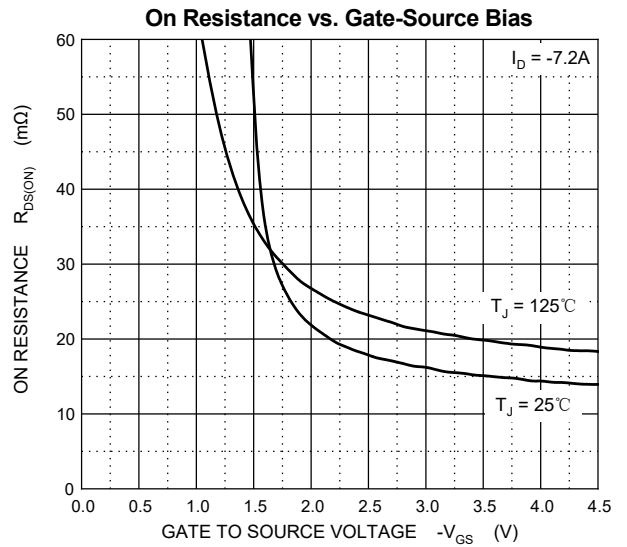
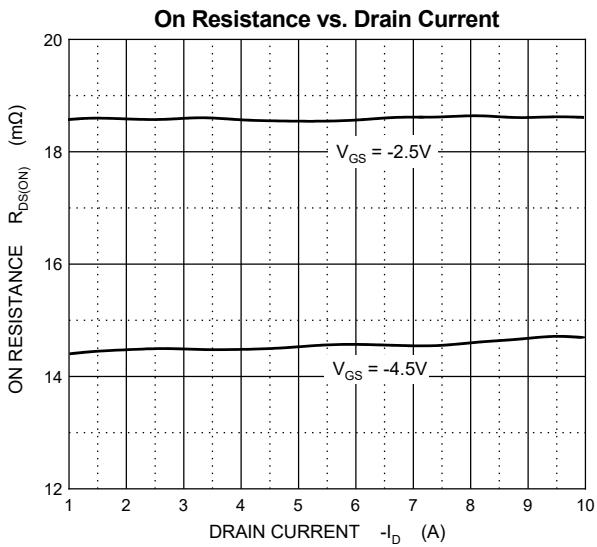
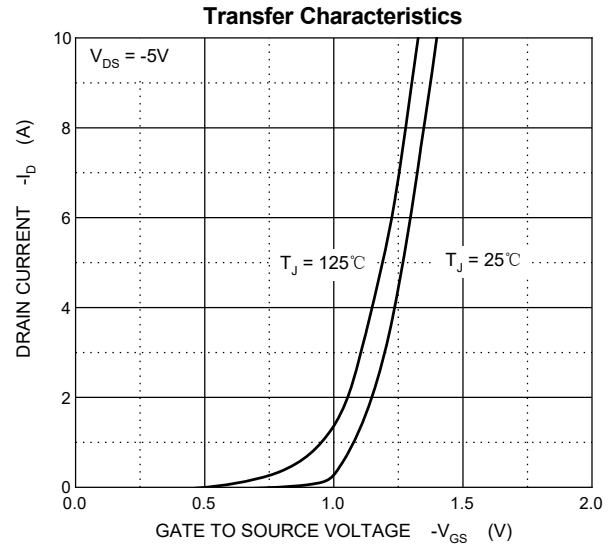
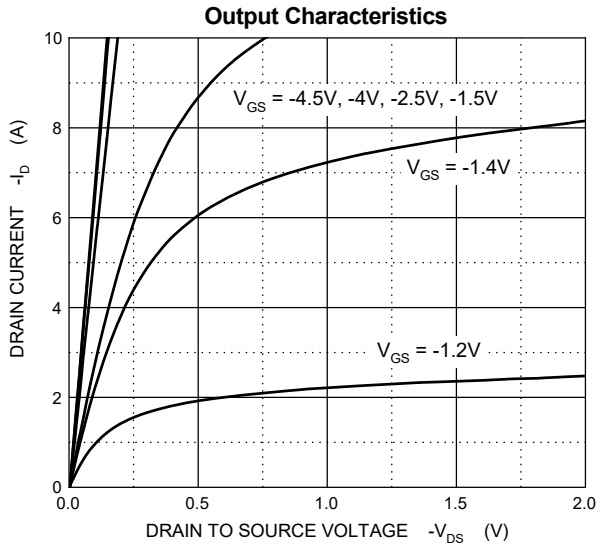
Reverse Diode Characteristics

Drain-source diode forward voltage	$V_{SD}^{(4)}$	$V_{GS} = 0V, I_S = -1.9A$	-	-	-1.2	V
Continuous drain-source diode forward current	$I_S^{(1)}$		-	-	-8.6	A
Pulsed drain-source diode forward current	$I_{SM}^{(1)(2)}$		-	-	-34.4	A

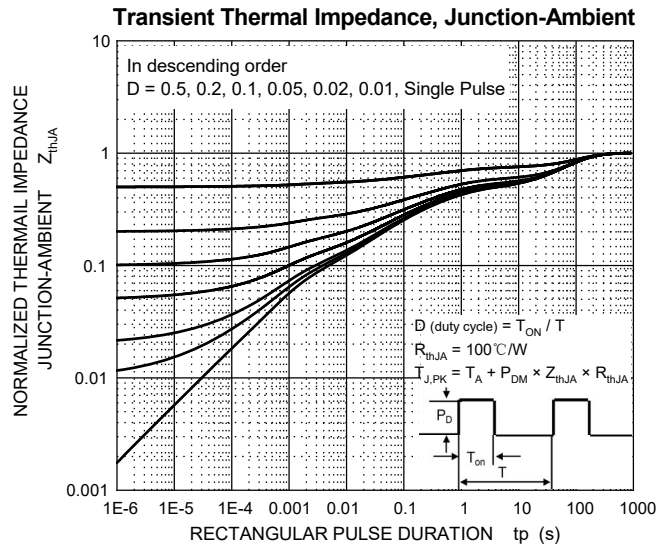
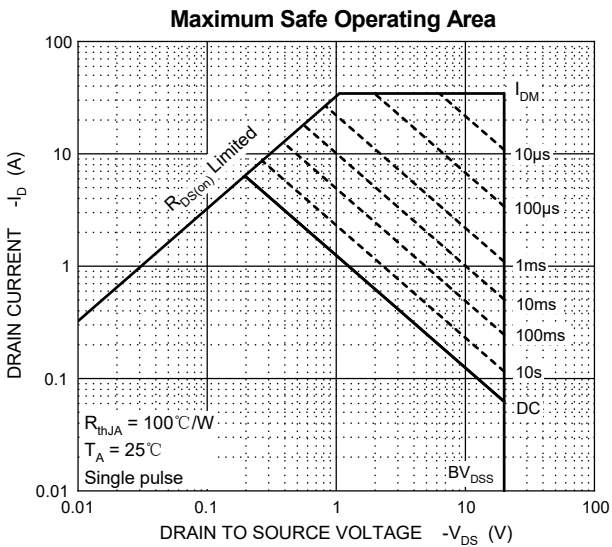
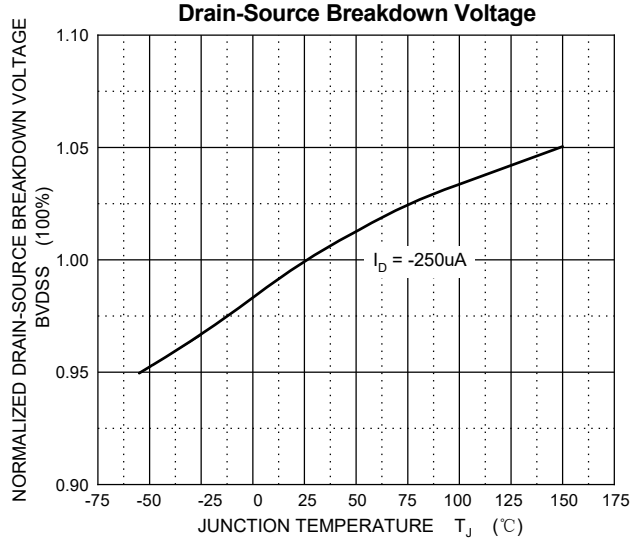
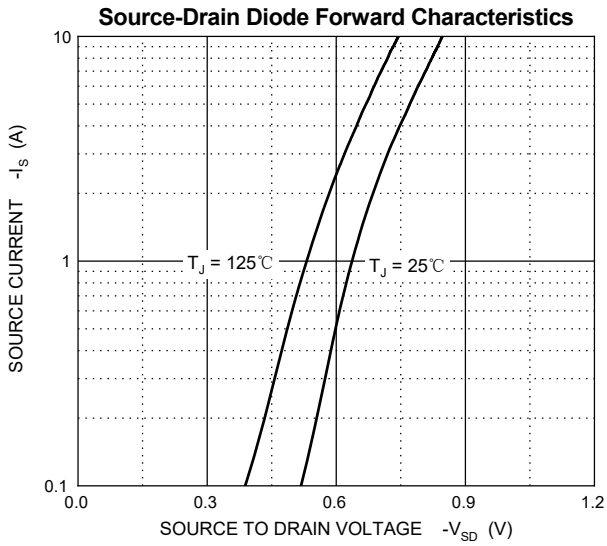
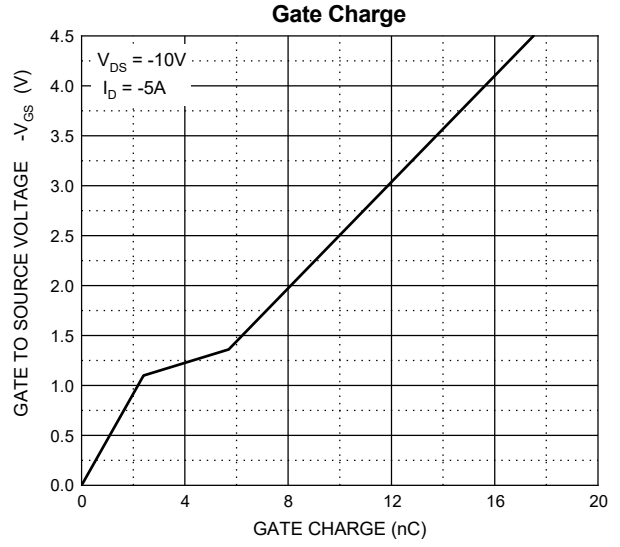
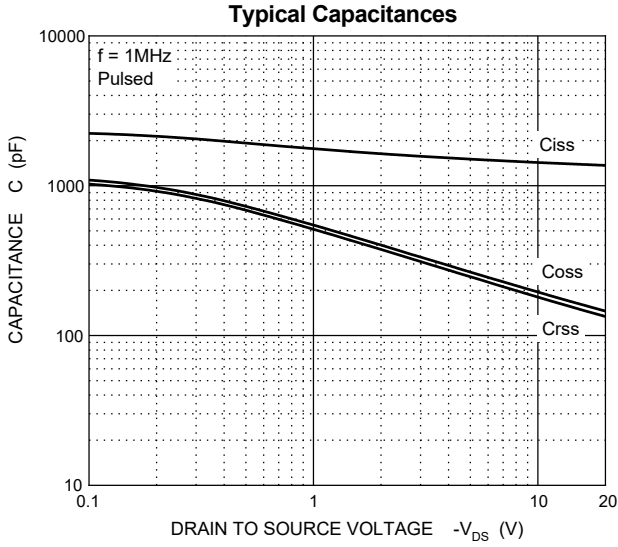
Notes:

- ①. Limited only by maximum temperature allowed.
- ②. $P_w \leq 10\mu s$, Duty cycle $\leq 1\%$.
- ③. EAS condition: $V_{DD} = -10V, V_{GS} = -10V, L = 0.5mH, R_g = 25\Omega$ Starting $T_J = 25^\circ\text{C}$.
- ④. Pulse Test : Pulse Width $\leq 380\mu s$, duty cycle $\leq 2\%$.
- ⑤. Guaranteed by design, not subject to production.
- ⑥. Device mounted on 1 in² FR-4 board with 2oz. double-sided Copper, in a still air environment with $T_A = 25^\circ\text{C}$. The current rating is based on the $t \leq 10s$ thermal resistance rating.

Typical Characteristics



Typical Characteristics

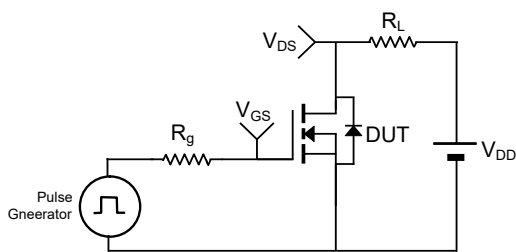


TEST CIRCUIT AND WAVEFORMS

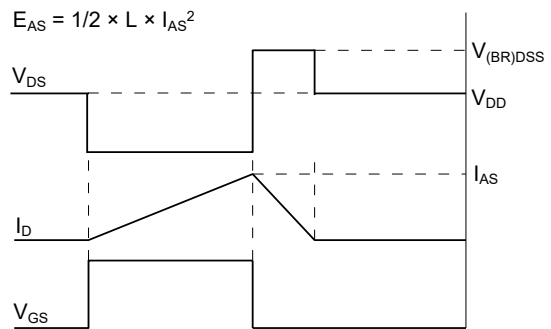
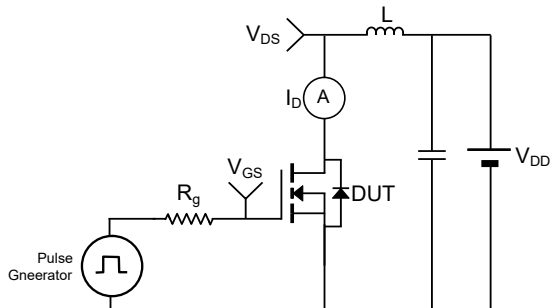
Gate Charge



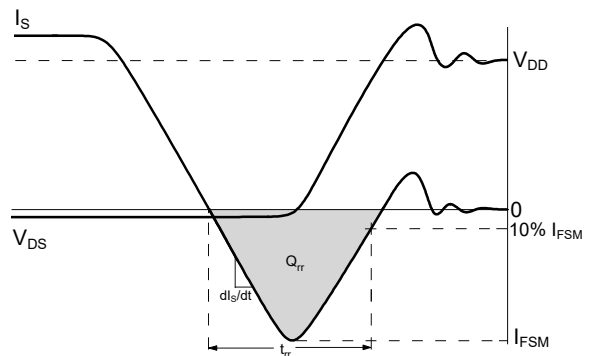
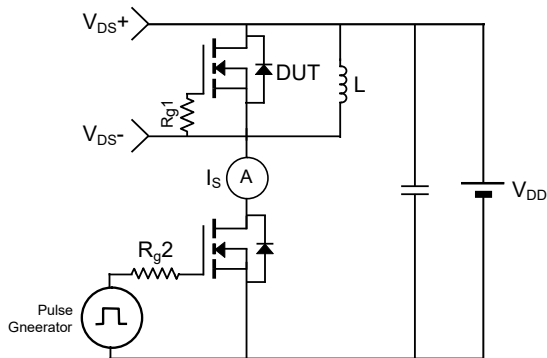
Resistive Load Switching Time



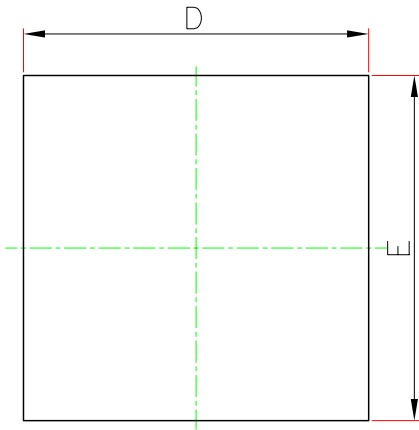
Un-clamped Inductive Load Switching



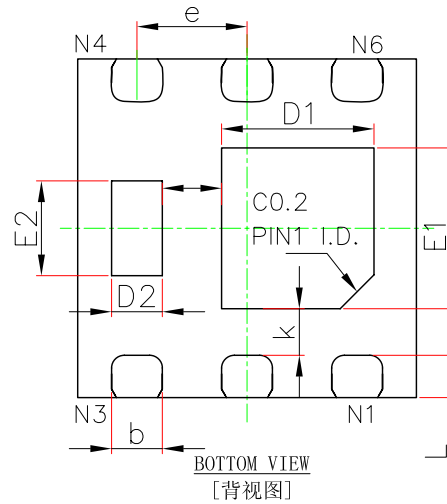
Drain-Source Body Diode Reverse Recovery



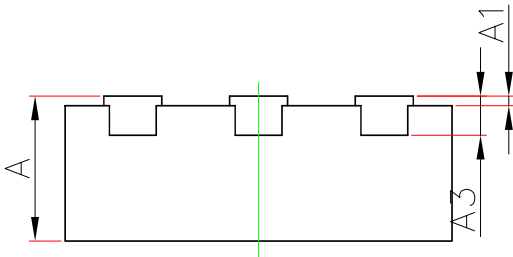
DFNWB2×2-6L-J Package Outline Dimensions



TOP VIEW
[顶视图]



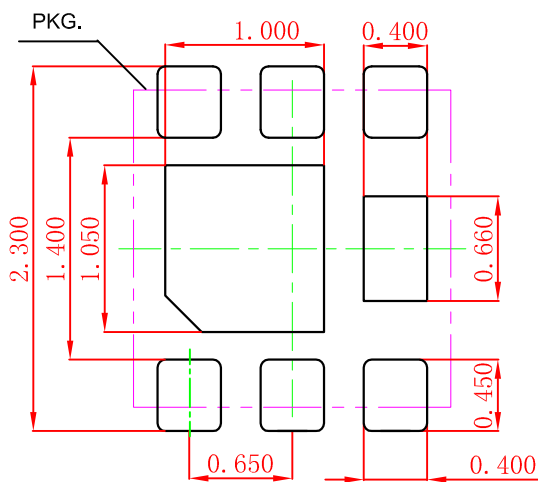
BOTTOM VIEW
[背视图]



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:

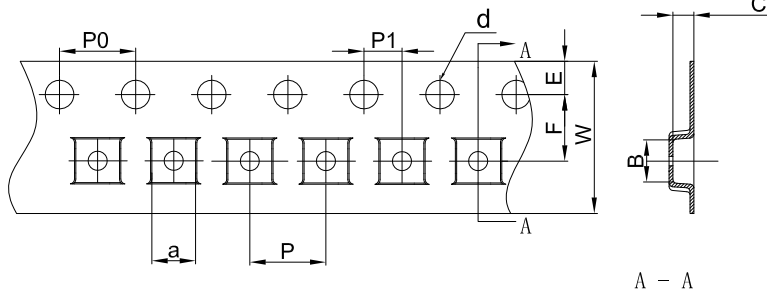
1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.050\text{mm}$.
3. The pad layout is for reference purposes only.

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.

DFNWB2×2-6L Tape and Reel

DFNWB2×2-6L Embossed Carrier Tape



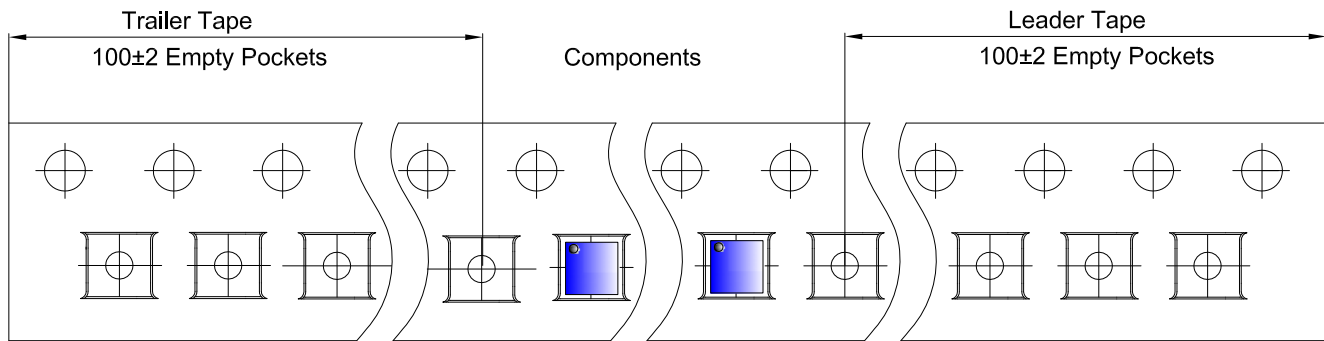
Packaging Description:

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).

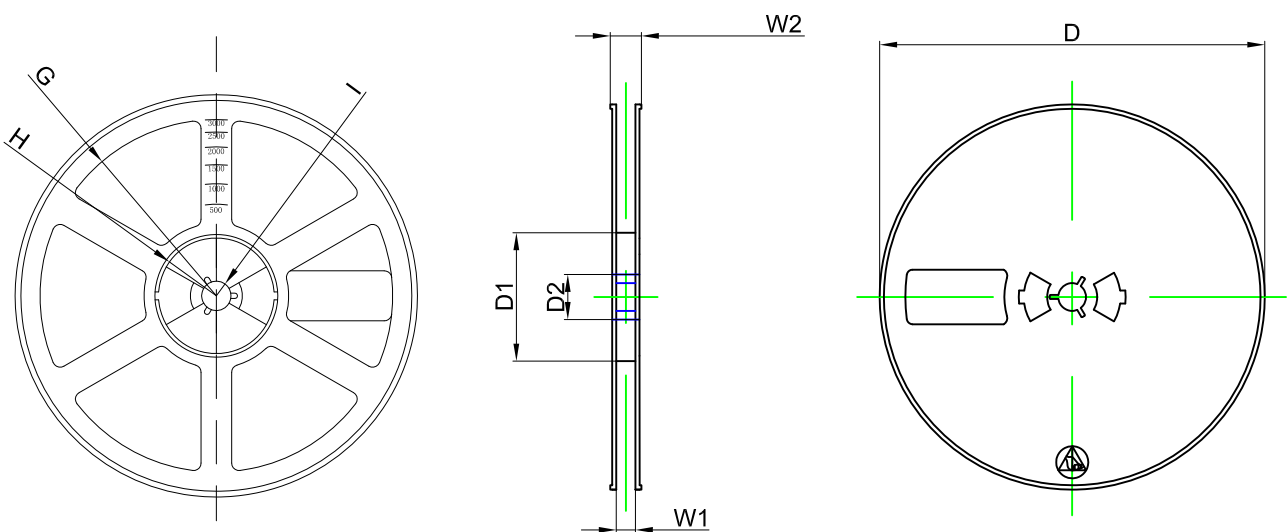
Dimensions are in millimeter

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	