

## PWMPD11

### 20V P-Channel MOSFET

-2.3A -20V;  $R_{DS(ON)typ}=70m\Omega@-4.5V$ ,  $R_{DS(ON)typ}=110m\Omega@-2.5V$ .

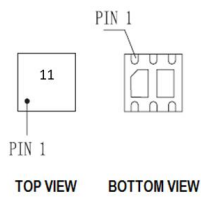
#### FEATURE

- TrenchFET Power MOSFET
- Excellent  $R_{DS(on)}$  and Low Gate Charge

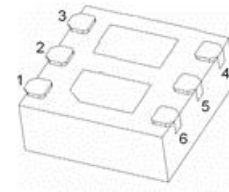
#### Application

- Optimized for Battery and Load Management Applications in Portable Equipment
- Li-Ion Battery Charging and Protection Circuits
- High Power Management in Portable , Battery Powered Products
- High Side Load Switch

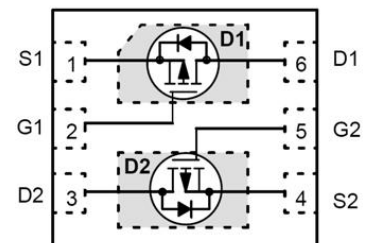
#### MARKING:



DFNWB2 × 2-6L



Schematic diagram



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	-20	V
Gate-Source Voltage	$V_{GS}$	$\pm 8$	V
Continuous Drain Current	$I_D$	-2.3	A
Pulsed Drain Current	$I_{DM}$	-10	A
Power Dissipation	$P_D$	0.7	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	178	$^{\circ}\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55~ +150	$^{\circ}\text{C}$

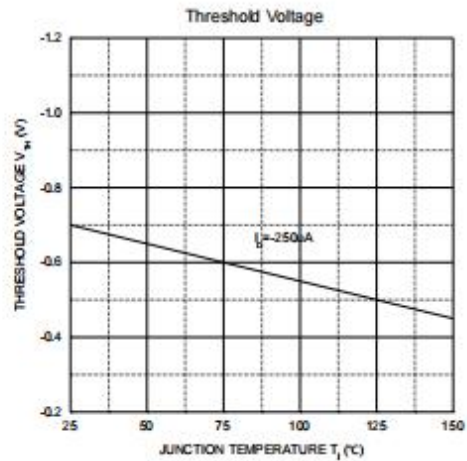
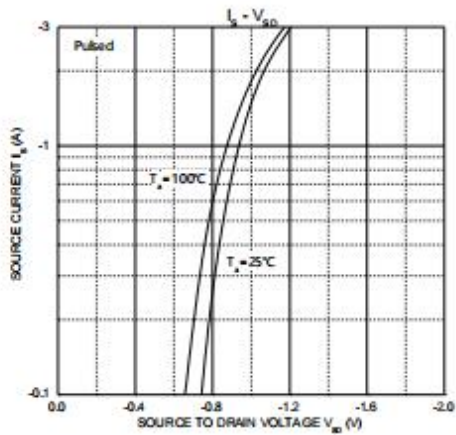
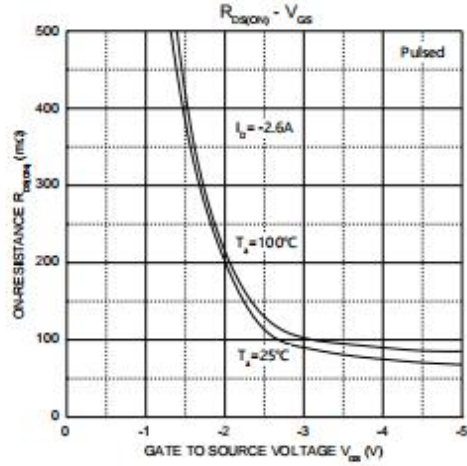
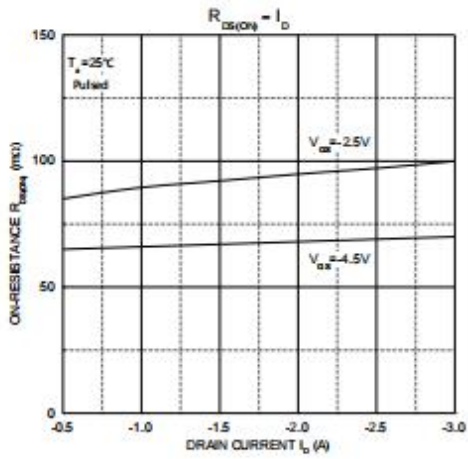
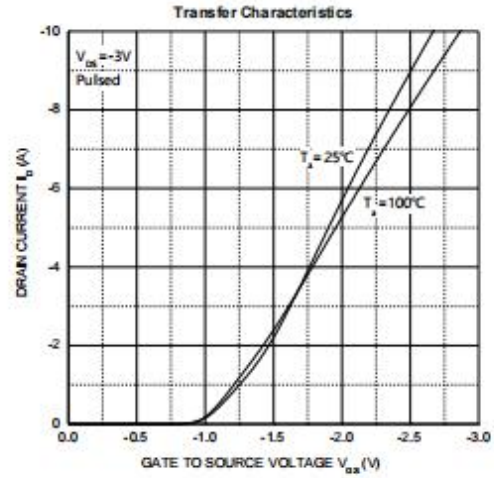
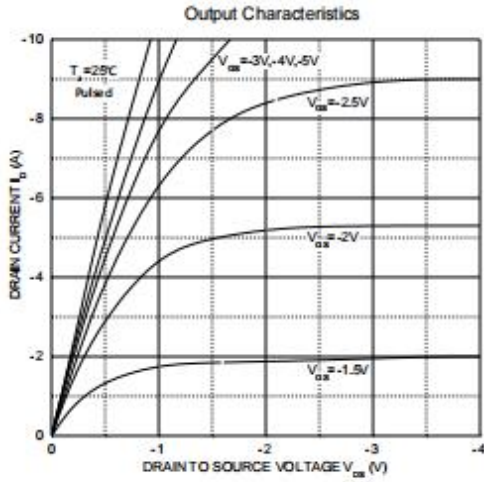
**MOSFET ELECTRICAL CHARACTERISTICS(T<sub>a</sub>=25°C unless otherwise noted)**

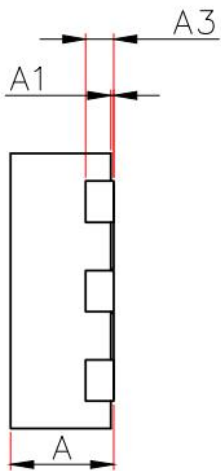
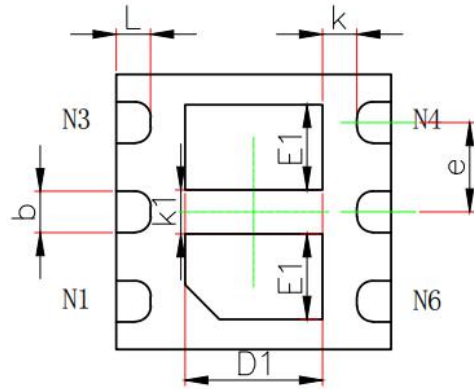
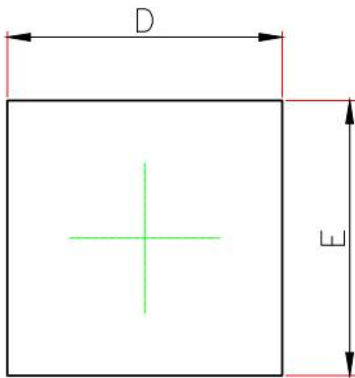
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>STATIC CHARACTERISTICS</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-20			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = -18V, V <sub>GS</sub> = 0V			-1	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±8V, V <sub>DS</sub> = 0V			±100	nA
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA	-0.4	-0.7	-1	V
Drain-source on-resistance <sup>a</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -2.8A		70	90	mΩ
		V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -2A		100	130	
<b>DYNAMIC CHARACTERISTICS<sup>b</sup></b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -10V, V <sub>GS</sub> = 0V, f = 1MHz		363		pF
Output Capacitance	C <sub>oss</sub>			70		
Reverse Transfer Capacitance	C <sub>rss</sub>			60		
Gate resistance	R <sub>g</sub>	f = 1MHz			50	Ω
Total gate charge	Q <sub>g</sub>	V <sub>DS</sub> = -10V, V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -3A		3.2		nC
Gate-source charge	Q <sub>gs</sub>			0.6		
Gate-drain charge	Q <sub>gd</sub>			1.2		
Turn-on delay time	t <sub>d(on)</sub>	V <sub>DD</sub> = -10V, V <sub>GEN</sub> = -4.5V, I <sub>D</sub> = -1A R <sub>L</sub> = 10Ω, R <sub>GEN</sub> = 1Ω		9		nS
Turn-on rise time	t <sub>r</sub>			33		
Turn-off delay time	t <sub>d(off)</sub>			29		
Turn-off fall time	t <sub>f</sub>			9		
<b>SOURCE-DRAIN DIODE CHARACTERISTICS</b>						
Diode forward current	I <sub>S</sub>	T <sub>C</sub> = 25°C			-2.3	A
Diode pulsed forward current <sup>a</sup>	I <sub>SM</sub>				-10	A
Diode Forward voltage	V <sub>DS</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = -1.3A			-1.2	V

**Notes :**

a. Pulse Test : Pulse Width &lt; 300μs, Duty Cycle ≤ 2%.

b. Guaranteed by design, not subject to production testing

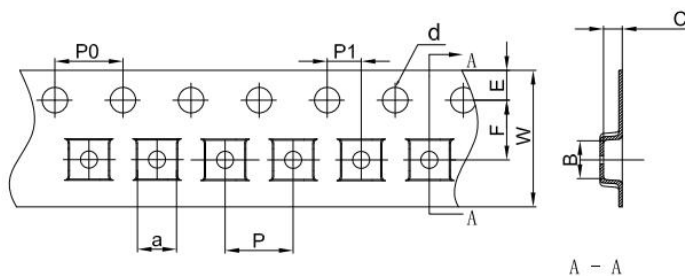




Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN.	MAX.	MIN.	MAX.
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	1.900	2.100	0.075	0.083
E	1.900	2.100	0.075	0.083
D1	0.900	1.100	0.035	0.043
E1	0.520	0.720	0.020	0.028
b	0.250	0.350	0.010	0.014
e	0.650TYP.		0.026TYP.	
k	0.200MIN.		0.008MIN.	
k1	0.320REF.		0.013REF.	
L	0.200	0.300	0.008	0.012

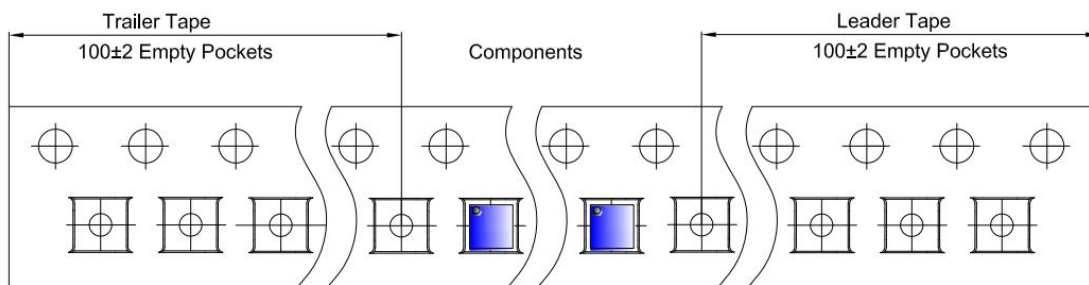
**DFNWB2×2-6L Tape and Reel**

**DFNWB2×2-6L Embossed Carrier Tape**

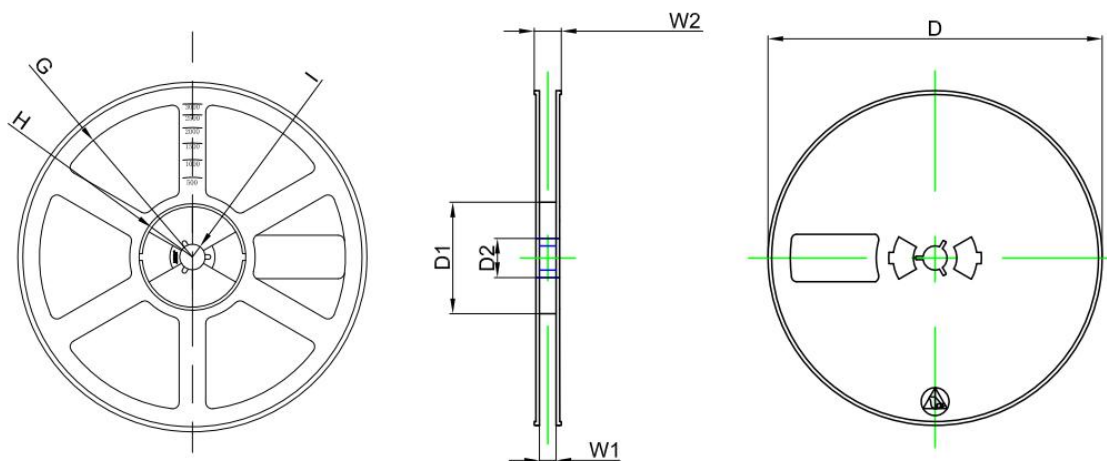


Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
DFNWB2×2-6L	2.30	2.30	1.10	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

**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	