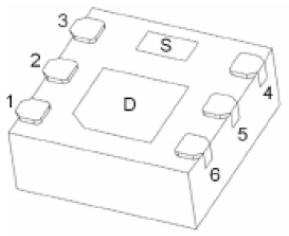
GPM3005

30V N-Channel MOSFET

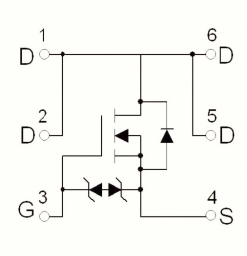
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	30mΩ@10V	5A
	32mΩ@4.5V	
	38mΩ@2.5V	

DFNWB2×2-6L



Schematic diagram



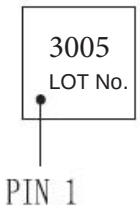
Feature

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$
- Typical ESD Protection

Application

- Battery Protection
- Load Switch

MARKING:



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[1,2]	I_D	5	A
Pulsed Drain Current	I_{DM}	20	A
Power Dissipation	P_D	0.75	W
Thermal Resistance from Junction to Ambient[1,2]	$R_{\theta JA}$	250	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	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} = 30V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} = ±10V,V_{DS} = 0V			±10	μA
On Characteristics						
Gate threshold voltage[3]	$V_{GS(th)}$	V_{DS} = V_{GS},I_D = 250μA	0.6	0.75	1	V
Drain-source on-resistance[3]	$R_{DS(on)}$	V_{GS} = 10V,I_D = 5A		30	40	mΩ
		V_{GS} = 4.5V,I_D = 5A		32	42	
		V_{GS} = 2.5V,I_D = 4A		38	50	
Forward Transconductance[3]	g_{fs}	V_{DS} = 5V,I_D = 4A		15		S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS} = 15V,V_{GS} = 0V,f = 1MHz		245		pF
Output Capacitance	C_{oss}			35		
Reverse Transfer Capacitance	C_{rss}			20		
Switching Characteristics						
Total Gate Charge	Q_g	V_{DS} = 15V,V_{GS} = 10V,I_D = 4A			10	nC
Gate-Source Charge	Q_{gs}			0.5		
Gate-Drain Charge	Q_{gd}			1		
Turn-on delay time	$t_{d(on)}$	V_{DD} = 15V,V_{GS} = 10V,R_L = 3.75Ω R_G = 3Ω		2		ns
Turn-on rise time	t_r			3.5		
Turn-off delay time	$t_{d(off)}$			22		
Turn-off fall time	t_f			3.5		
Source-Drain Diode Characteristics						
Continuous Source Current	I_S	V_G = V_D = 0V , Force Current			5	A
Pulsed Source Current	I_{SM}				20	
Diode Forward Voltage	V_{SD}	V_{GS} = 0V , I_S = 1A			1.2	V

Notes :

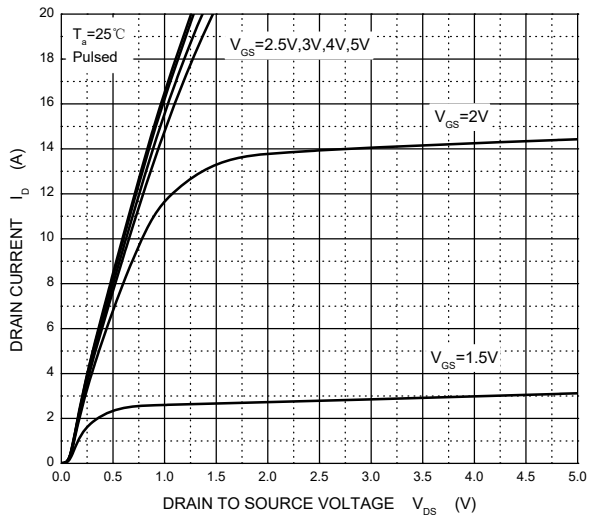
1.$R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR4 board with 1oz. single side copper, in a still air environment with T_A = 25°C.

2. $R_{\theta JA}$ is measured in the steady state

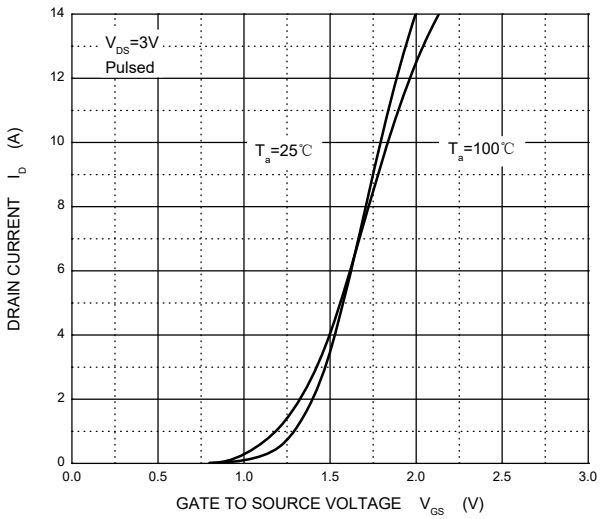
3.Pulse test : Pulse width ≤ 380μs, duty cycle ≤ 2%.

Typical Electrical and Thermal Characteristics

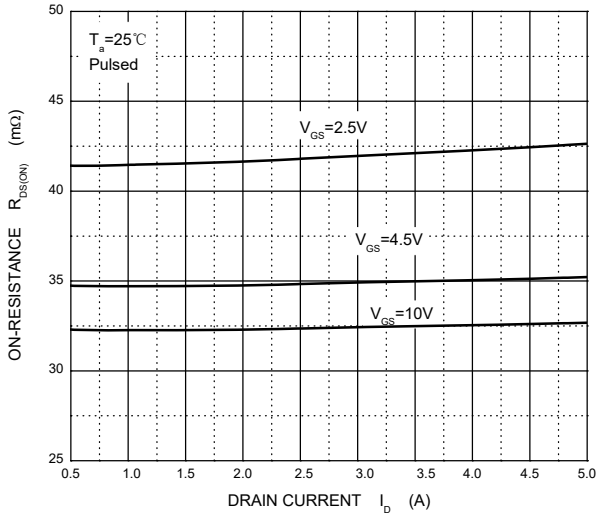
Output Characteristics



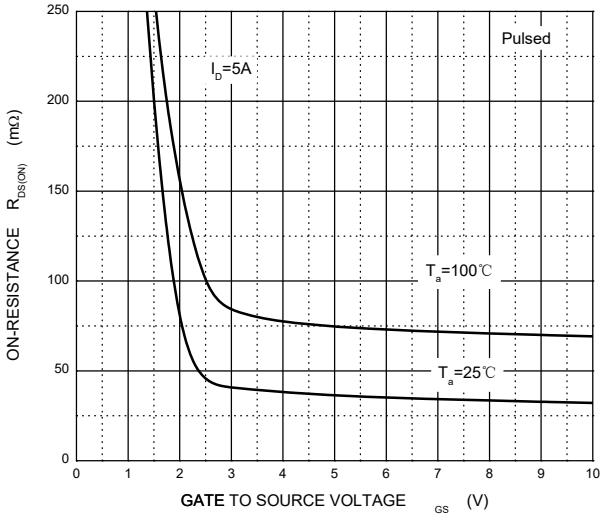
Transfer Characteristics



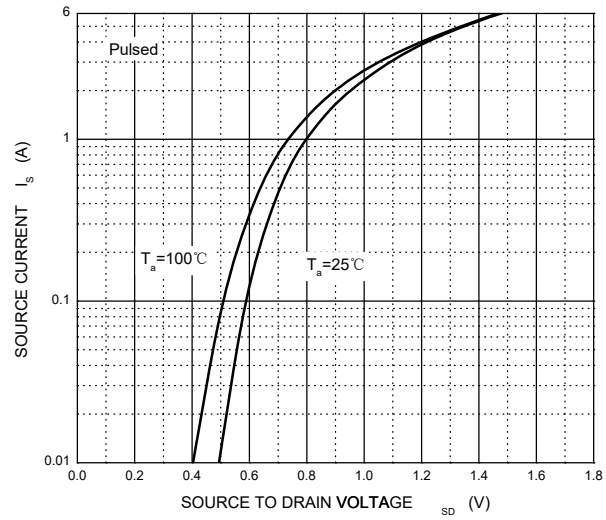
$R_{DS(ON)}$ —— I_D



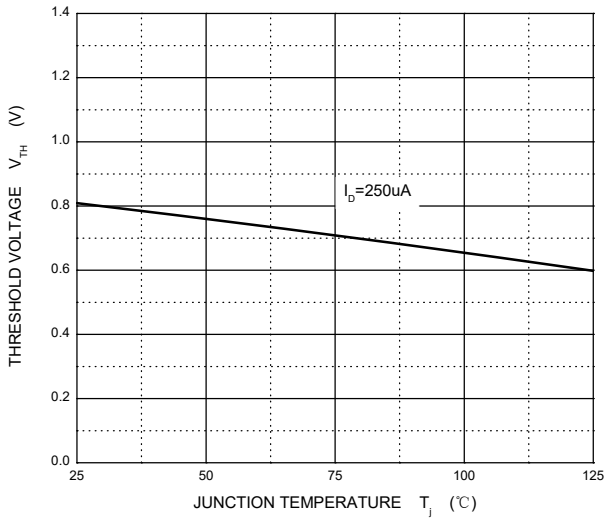
$R_{DS(ON)}$ —— V_{GS}



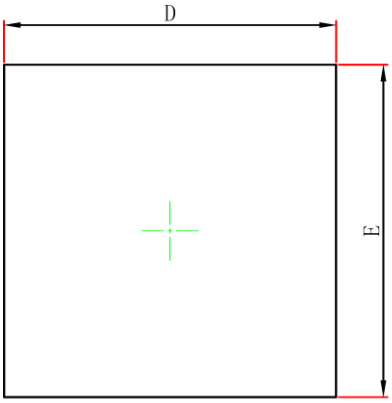
I_S —— V_{SD}



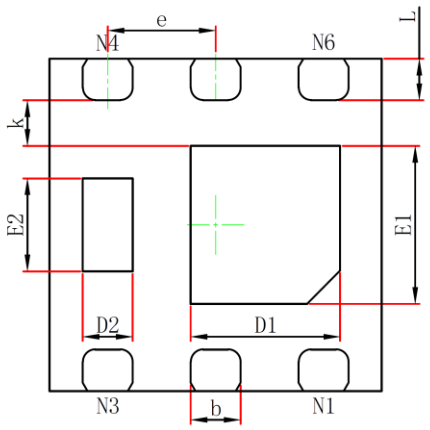
Threshold Voltage



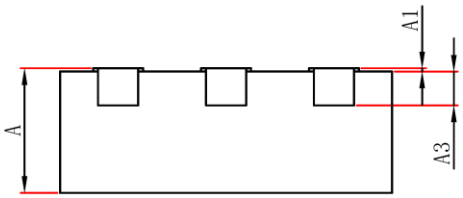
DFNWB2X2-6L Package Information



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.800	0.028	0.031
A1	0	0.050	0	0.002
A3	2.03REF		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
k	0.200MIN		0.008MIN	
b	0.250	0.350	0.010	0.014
e	0.65BSC		0.026TYP	
L	0.174	0.326	0.007	0.013