重庆平伟实业股份有限公司
CHONGQING PINGWEI ENTERPRISE CO.,LTD

PWMN2012

20V N-Channel MOSFET

12A 20V；$R_{DS(ON)typ}$=10mΩ@4.5V，$R_{DS(ON)typ}$=14mΩ@2.5V，$R_{DS(ON)typ}$=23mΩ@1.8V

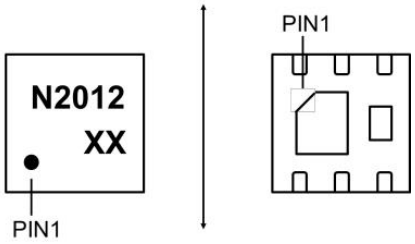
FEATURE

- TrenchFET Power MOSFET
- Small package DFNWB2×2-6L-J

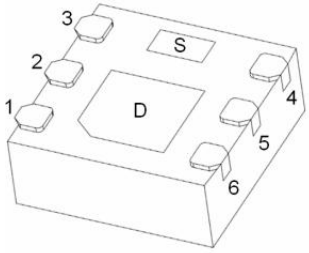
Application

- Load Switch for Portable Applications

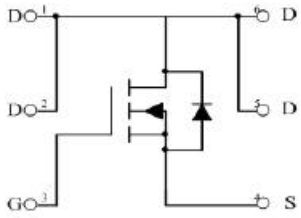
MARKING:



DFNWB2×2-6L-J



Schematic diagram



ABSOLUTE MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current[1,2]	I_D	12	A
Plused Drain Current	I_{DM}	40	A
Power Dissipation	P_D	0.75	W
Thermal Resistance from Junction to Ambient[1,2]	$R_{\theta JA}$	167	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
OFF CHARACTERISTICS						
Drainsource breakdown voltage	$V_{(BR)DSS}$	VGS = 0V, ID = 250μA	20			V
Zero gate voltage drain current	I_{DSS}	VDS = 16V, VGS = 0V			1	μA
Gatebody leakage current	I_{GSS}	VGS = ±10V, VDS = 0V			±100	nA
ON CHARACTERISTICS						
Gate threshold voltage[3]	$V_{GS(th)}$	VDS = VGS , ID = 250μA	0.35	0.7	1.0	V
Drainsource onresistance[3]	$R_{DS(on)}$	VGS = 4.5V, ID = 3A		10	13	mΩ
		VGS = 2.5V, ID = 3A		14	18	
		VGS = 1.8V, ID = 3A		23	30	
Forward tranconductance[3]	g_{FS}	VDS = 4V, ID = 10A	10			S
DYNAMIC CHARACTERISTICS						
Input Capacitance	Ciss	VDS = 4V, VGS = 0V, f = 1MHz		1900		pF
Output Capacitance	Coss			700		
Reverse Transfer Capacitance	Crss			480		
SWITCHING CHARACTERISTICS						
Total Gate Charge	Qg	VDS = 4V, VGS = 5V, ID = 10A		20		nC
GateSource Charge	Qgs			2.5		
GateDrain Charge	Qgd			6.5		
Turnon delay time	$t_{d(on)}$	VGEN = 4.5V, VDD = 4V, Rg = 1Ω , RL = 0.4Ω		15		ns
Turnon rise time	t_r			10		
Turnoff delay time	$t_{d(off)}$			70		
Turnoff fall time	t_f			15		
SOURCE-DRAIN DIODE CHARACTERISTICS						
Diode Forward Current	I_S				12	A
Diode Forward Voltage	V_{SD}	VGS = 0V, ISD = 1A			1.2	V

Notes :

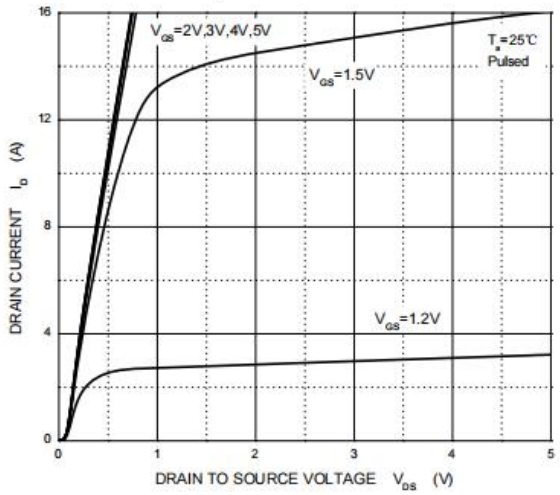
1.RθJA is measured with the device mounted on 1 in2 FR4 board with 1oz. single side copper, in a still air environment with TA = 25°C.

2.RθJA is measured in the steady state

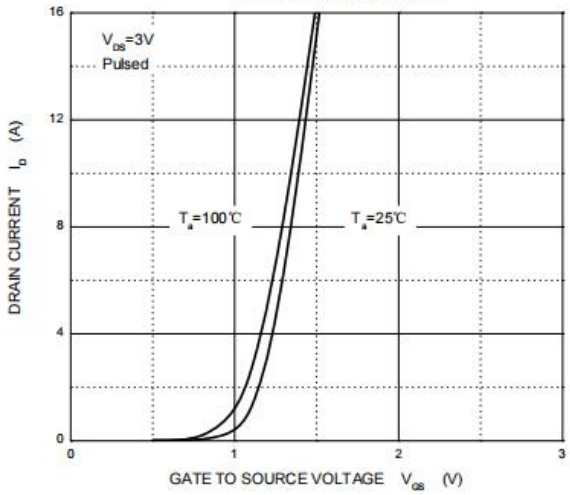
3.Pulse test : Pulse width ≤ 380μs, duty cycle ≤ 2%.

Typical Electrical and Thermal Characteristics

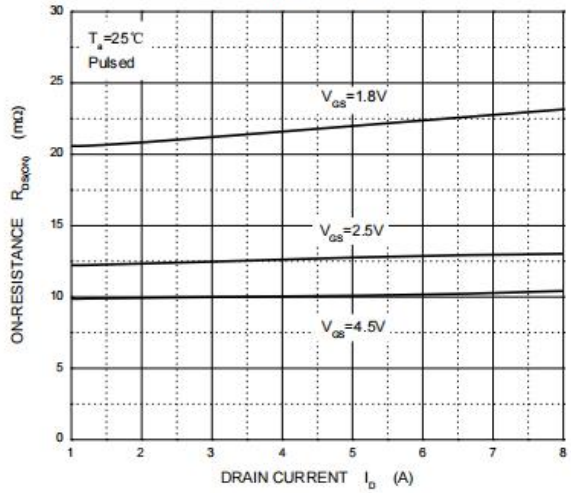
Output Characteristics



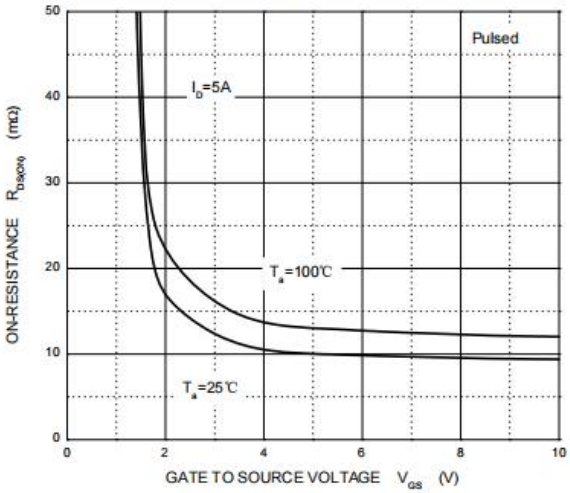
Transfer Characteristics



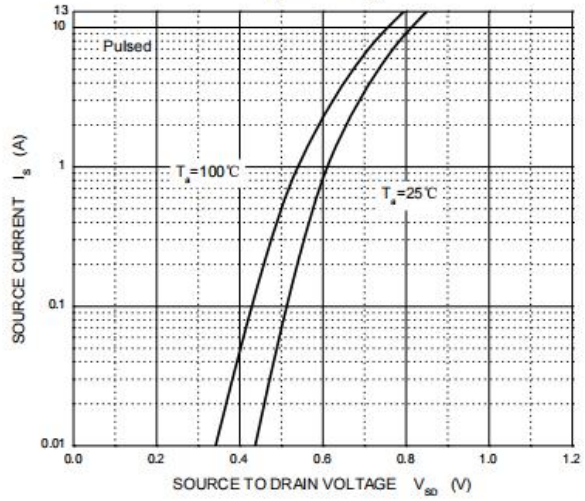
$R_{DS(ON)}$ — I_D



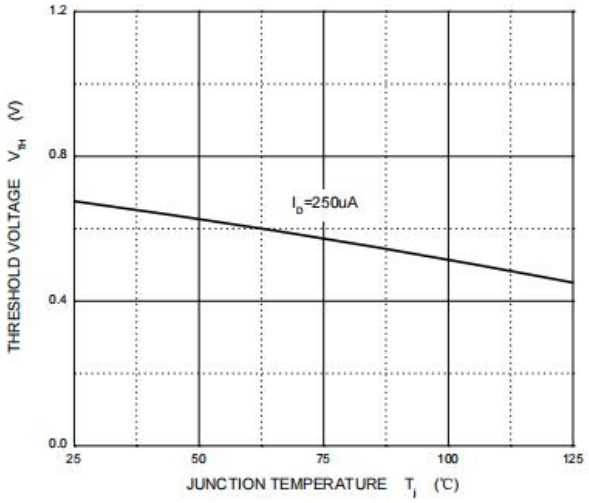
$R_{DS(ON)}$ — V_{GS}



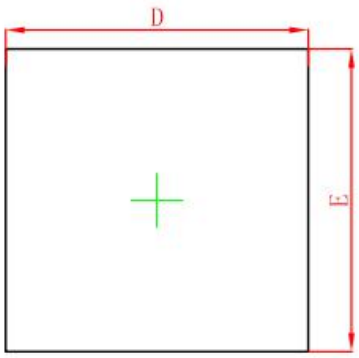
I_S — V_{SD}

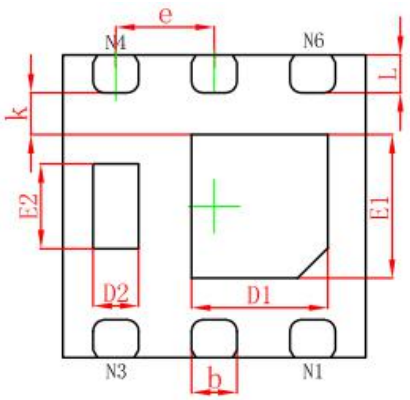


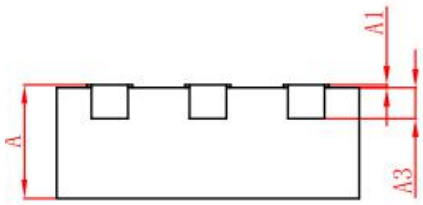
Threshold Voltage



DFNWB2×2-6L-J Package Information







Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.800		0.032
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	1.924	2.076	0.076	0.082
E	1.924	2.076	0.076	0.082
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	0.650TYP.		0.026TYP.	
L	0.174	0.326	0.007	0.013