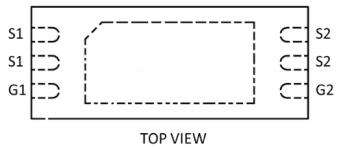
GPND12N02

20V Dual N-Channel MOSFET

Product Summary

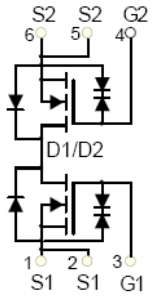
$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	11mΩ@4.5V	8A
	14mΩ@2.5V	

DFN2x5-6L



TOP VIEW

Schematic diagram



Feature

- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- ESD Protected

Application

- Load Switch
- DC/DC Converter

MARKING:

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}	±12	V
Continuous Drain Current[1,5]	T_A = 25℃	I_D	8	A
Pulsed Drain Current[2]		I_{DM}	32	A
Power Dissipation[4,5]	T_A = 25℃	P_D	2	W
Thermal Resistance from Junction to Ambient[5]		$R_{\theta JA}$	61	℃/W
Junction Temperature		T_J	150	℃
Storage Temperature		T_{STG}	-55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS (T_J = 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	20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 16V, V_{GS} = 0V			1	μA
Gate - Body Leakage Current	I_{GSS}	V_{GS} = ±8V, V_{DS} = 0V			±5	μA
On Characteristics[3]						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	0.4	0.7	1.0	V
Drain-source On-resistance	$R_{DS(on)}$	V_{GS} = 4.5V, I_D = 3A		11	14	mΩ
		V_{GS} = 2.5V, I_D = 3A		14	21	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS} = 10V, V_{GS} = 0V, f = 0.1MHz		756		pF
Output Capacitance	C_{oss}			156		
Reverse Transfer Capacitance	C_{rss}			16		
Gate Resistance	R_g	V_{DS} = 0V, V_{GS} = 0V, f = 1MHz		3223		Ω
Switching Characteristics						
Total Gate Charge	Q_g	V_{DS} = 10V, V_{GS} = 4.5V, I_D = 10A		13		nC
Gate-source Charge	Q_{gs}			5.5		
Gate-drain Charge	Q_{gd}			7.5		
Turn-on Delay Time	$t_{d(on)}$	V_{DD} = 10V, V_{GS} = 4.5V, R_L = 1Ω, R_G = 3Ω		2		ns
Turn-on Rise Time	t_r			2.8		
Turn-off Delay Ttime	$t_{d(off)}$			7		
Turn-off Fall Time	t_f			7.4		
Source - Drain Diode Characteristics						
Diode Forward Voltage[3]	V_{SD}	V_{GS} = 0V, I_S = 1A			1.2	V

Notes :

1.The maximum current rating is limited by package.

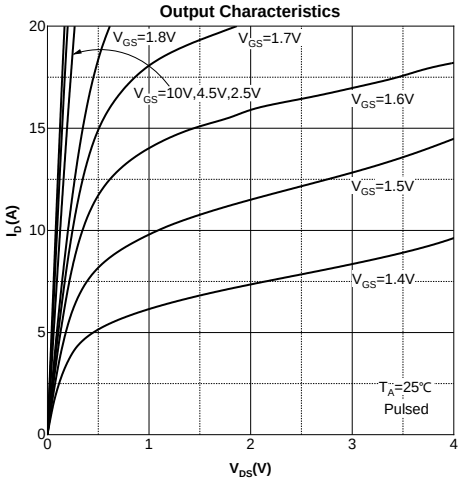
2.Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.

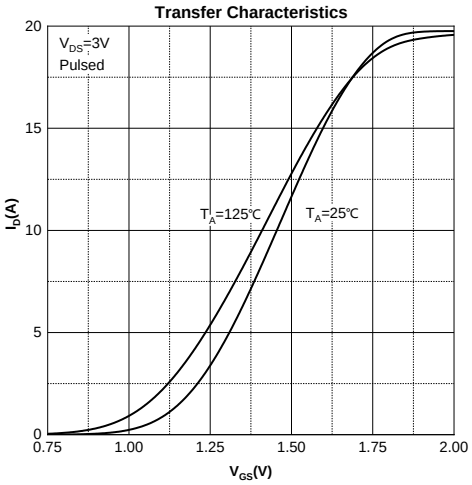
3.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.

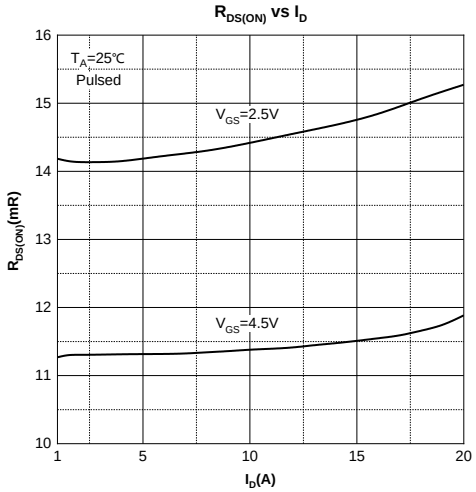
4.The power dissipation P_D is limited by $T_{J(MAX)}$ = 150°C.

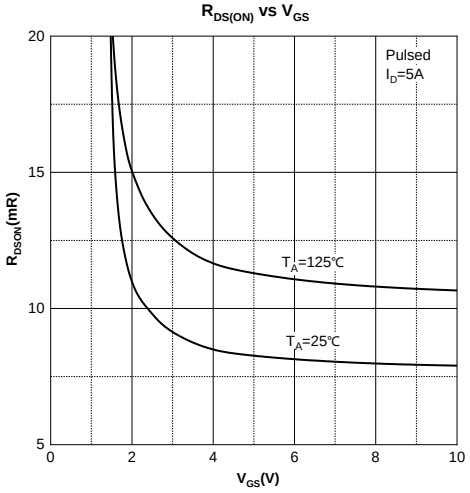
5.Device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.

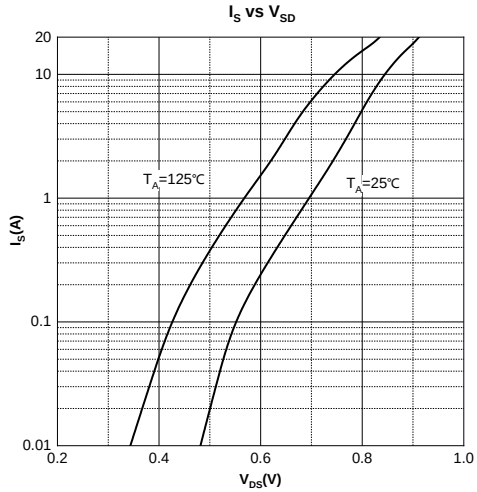
Typical Characteristics

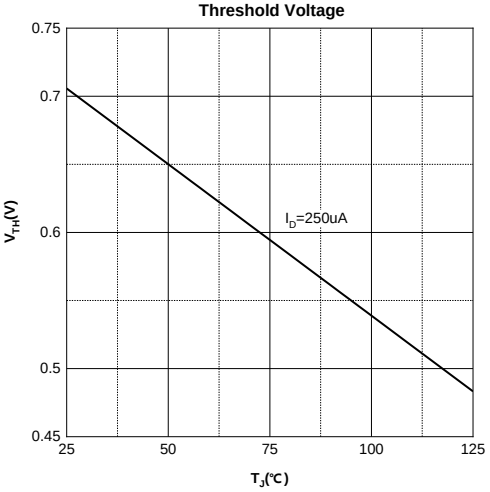




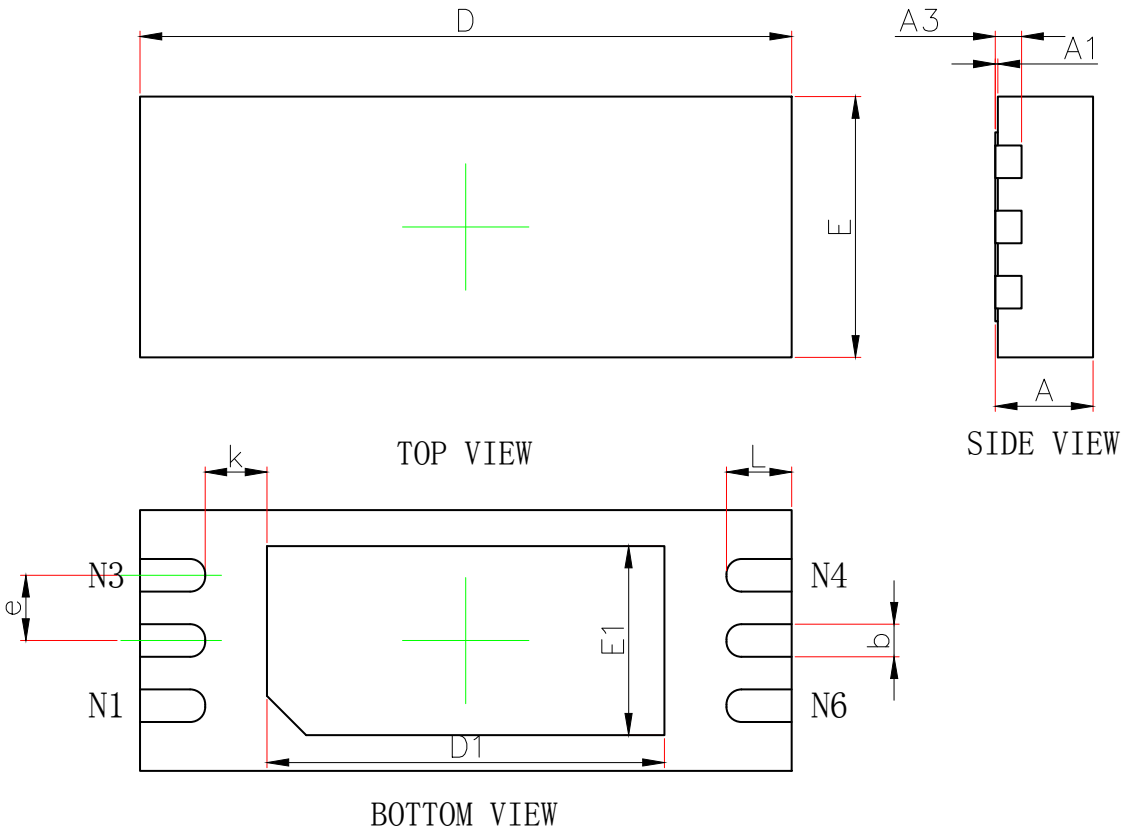








DFN2x5-6L Package Information



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	4.900	5.100	0.193	0.201
E	1.900	2.100	0.075	0.083
D1	2.950	3.150	0.116	0.124
E1	1.350	1.550	0.053	0.061
b	0.200	0.300	0.008	0.012
e	0.500TYP.		0.020TYP.	
k	0.200MIN.		0.008MIN.	
L	0.450	0.550	0.018	0.022