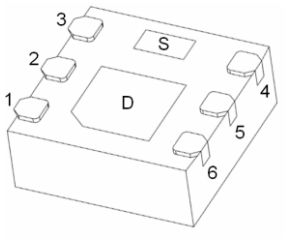
GPMP1216-T

12V P-Channel MOSFET

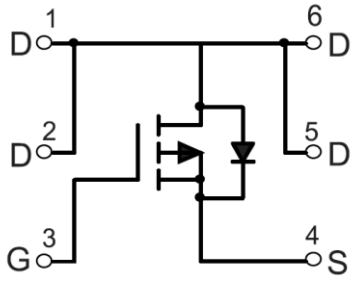
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-12V	12mΩ@-4.5V	-16A
	14mΩ@-2.5V	

DFN2×2-6L



Schematic diagram



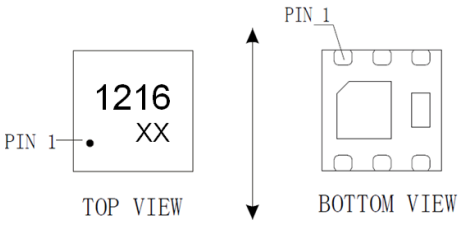
Feature

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

Application

- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

MARKING:



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-12	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current	I_D	-16	A
Pulsed Drain Current[1]	I_{DM}	-65	A
Power Dissipation[2] (T_a=25℃)	P_D	2.5	W
Maximum Power Dissipation[3](T_c=25℃)		18	W
Thermal Resistance from Junction to Ambient[4]	$R_{\theta JA}$	50	℃/W
Thermal Resistance from Junction to Case[4]	$R_{\theta JC}$	6.9	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

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

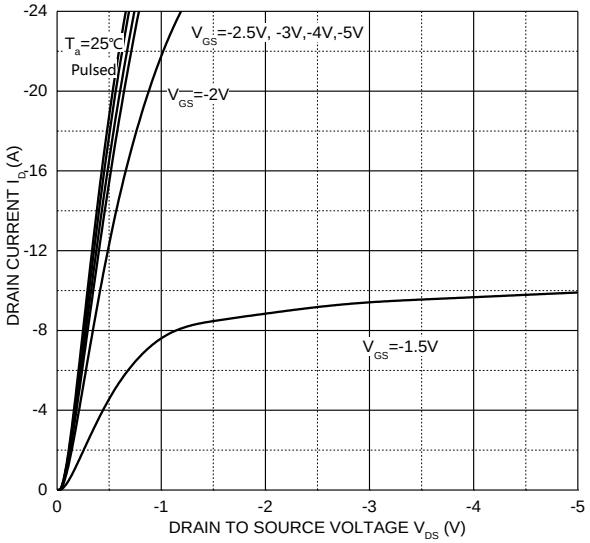
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-12			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-12V,V_{GS} = 0V			-1	μA
Gate-body Leakage Current	I_{GSS}	V_{GS} =±10V, V_{DS} = 0V			±100	nA
Gate Threshold Voltage(5)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.4	-0.7	-1	V
Drain-source On-resistance(5)	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-6.7A		12	18	mΩ
		V_{GS} =-2.5V, I_D =-4.2A		14	27	
Forward Tranconductance(5)	g_{FS}	V_{DS} =-10V, I_D =-6.7A		40		S
Dynamic characteristics(6)						
Input Capacitance	C_{iss}	V_{DS} =-6V,V_{GS} =0V,f =1MHz		1658		pF
Output Capacitance	C_{oss}			354		
Reverse Transfer Capacitance	C_{rss}			341		
Gate Resistance	R_g	f =1MHz		45		Ω
Total Gate Charge	Q_g	V_{DS} =-6V,V_{GS} =-4.5V,I_D=-5A		18	23	nC
Gate-Source Charge	Q_{gs}			3		
Gate-Drain Charge	Q_{gd}			4.7		
Turn-on delay Time	$t_{d(on)}$	V_{DD}=-6V,V_{GEN}=-4.5V,I_D=-4A R_L=6Ω,R_{GEN}=1Ω		33	40	ns
Turn-on rise Time	t_r			31	40	
Turn-off delay Time	$t_{d(off)}$			58	75	
Turn-off fall Time	t_f			26	35	
Source-Drain Diode characteristics						
Diode Forward Current	I_S	T_C=25℃			-16	A
Diode Pulsed Forward Current(1)	I_{SM}				-48	A
Diode Forward Voltage(4)	V_{SD}	V_{GS} =0V, I_S=-2A		-0.82	-1.2	V

Notes:

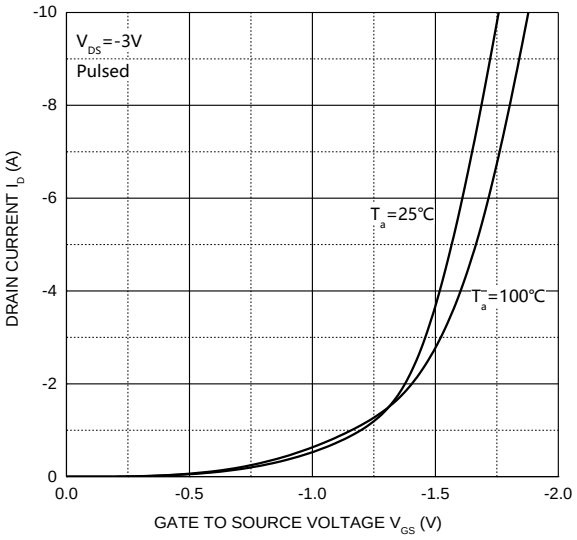
1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. This test is performed with no heat sink at T_a=25℃.
3. This test is performed with infinite heat sink at T_c=25℃.
4. Surface mounted on FR4 board, t≤10S.
5. Pulse Test: Pulse With ≤300μs,Duty Cycle≤2%.
6. Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristics

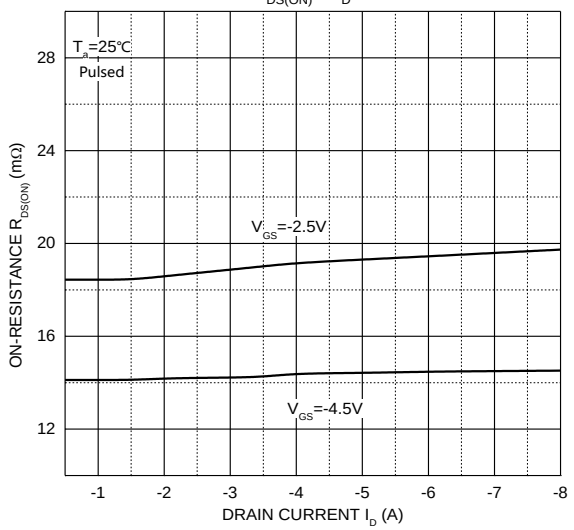
Output Characteristics



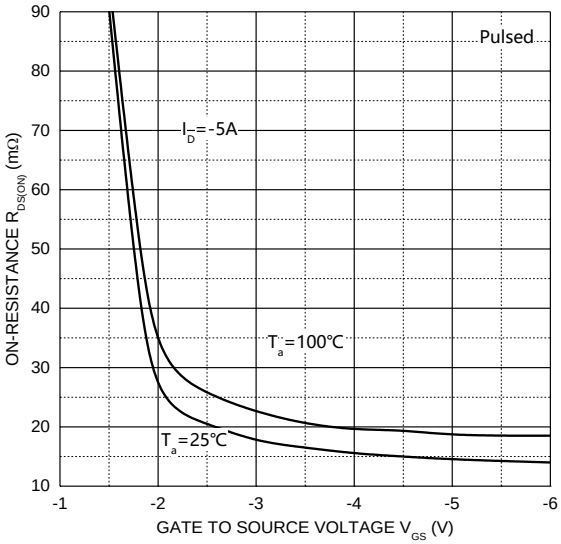
Transfer Characteristics



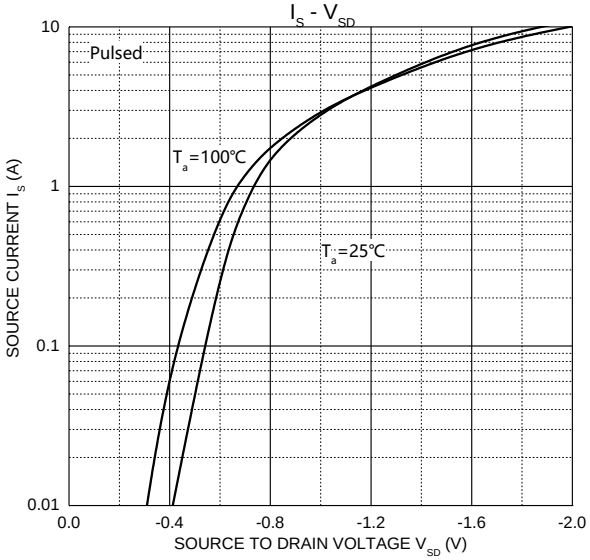
$R_{DS(ON)}$ – I_D



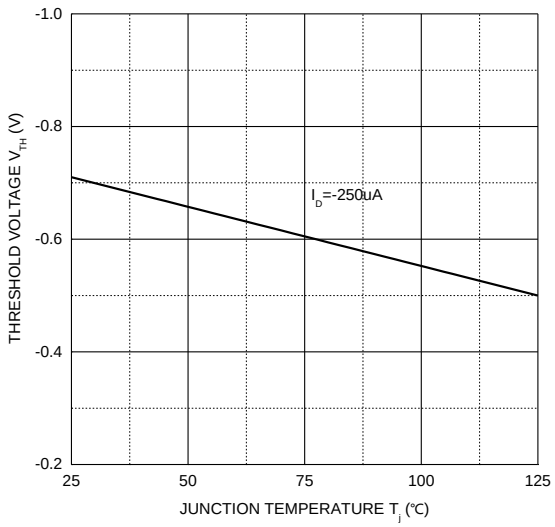
$R_{DS(ON)}$ - V_{GS}



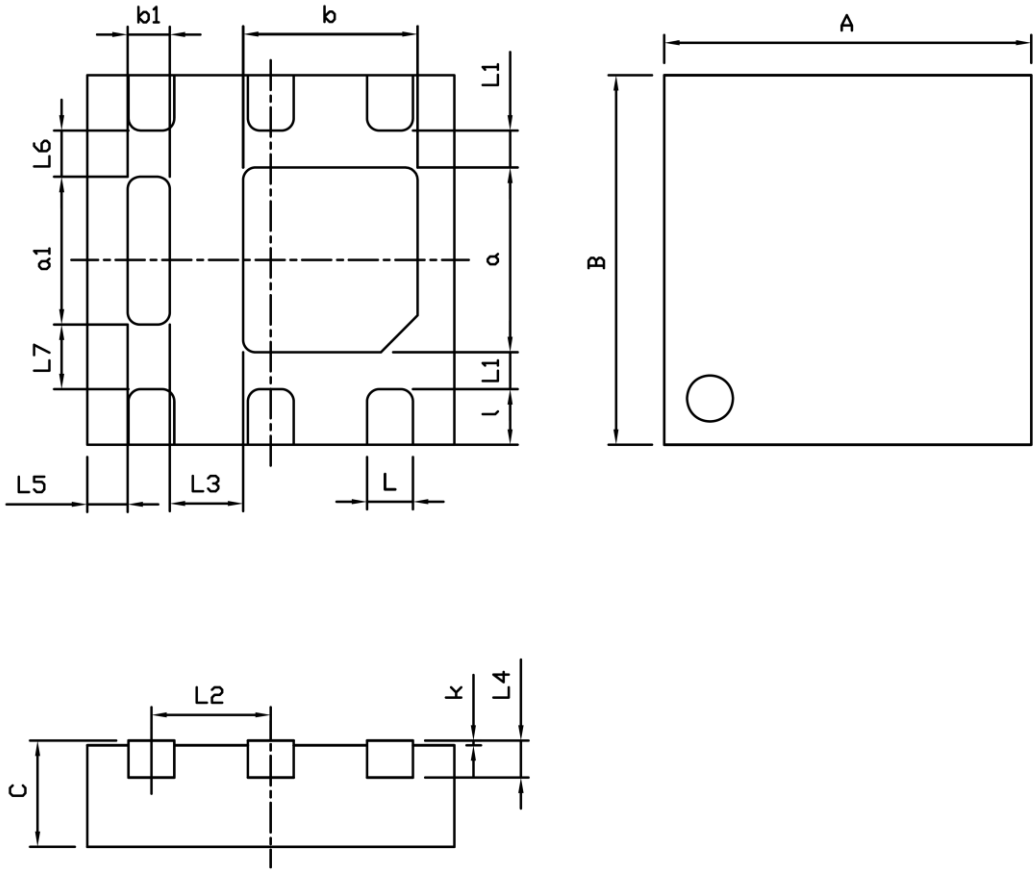
I_S - V_{SD}



Threshold Voltage



DFN2×2-6L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.950	2.050	0.077	0.081
B	1.950	2.050	0.077	0.081
C	0.450	0.550	0.018	0.022
L	0.250	0.350	0.010	0.014
L1	0.100	0.300	0.004	0.012
L2	0.650TYP		0.026TYP	
L3	0.300	0.500	0.012	0.020
L4	0.152TYP		0.006TYP	
L5	0.120	0.320	0.005	0.013
L6	0.150	0.350	0.006	0.014
L7	0.230	0.430	0.009	0.017
a	0.900	1.100	0.035	0.043
a1	0.720	0.920	0.028	0.036
b	0.850	1.050	0.033	0.041
b1	0.130	0.330	0.005	0.013
l	0.250	0.350	0.010	0.014
k	0.000	0.050	0.000	0.002