

Product Summary

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

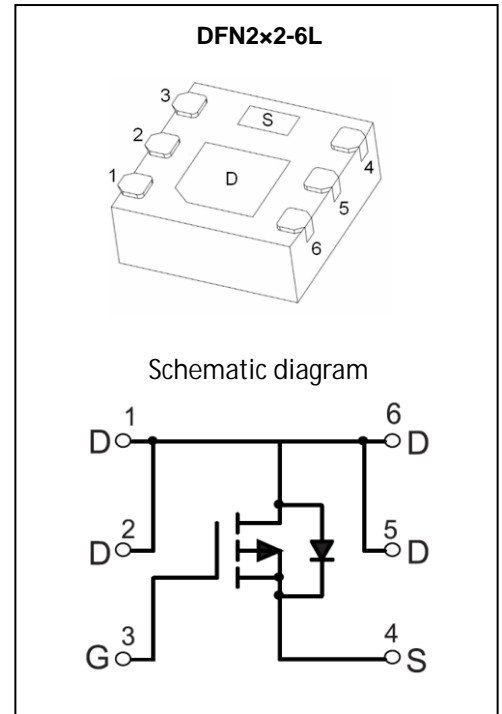
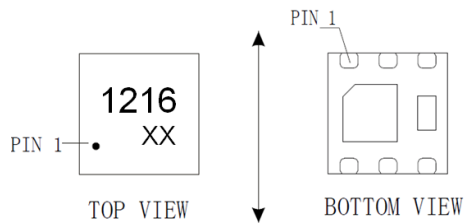
Feature

- 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 ($T_a=25^{\circ}C$ 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⁾ ($T_a=25^{\circ}C$)	P_D	2.5	W
Maximum Power Dissipation ⁽³⁾ ($T_c=25^{\circ}C$)		18	W
Thermal Resistance from Junction to Ambient ⁽⁴⁾	$R_{\theta JA}$	50	$^{\circ}C/W$
Thermal Resistance from Junction to Case ⁽⁴⁾	$R_{\theta JC}$	6.9	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}C$

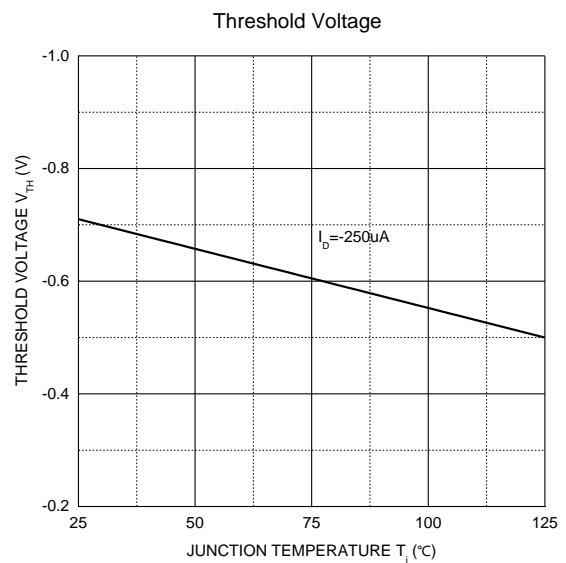
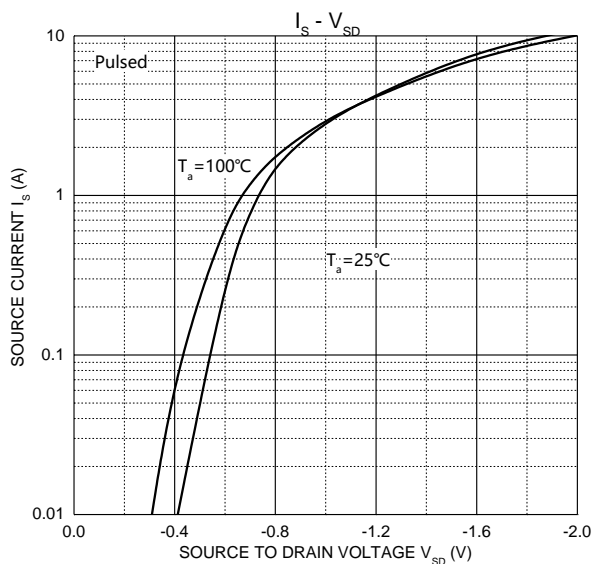
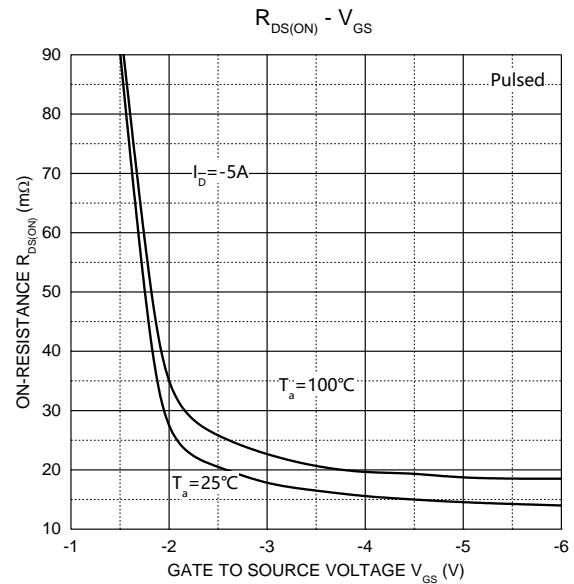
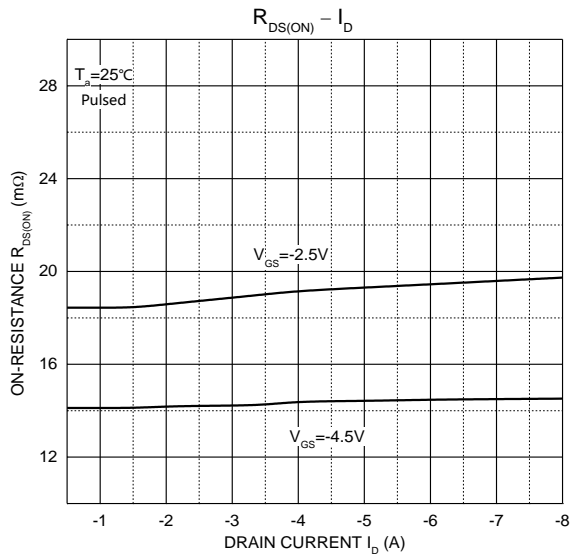
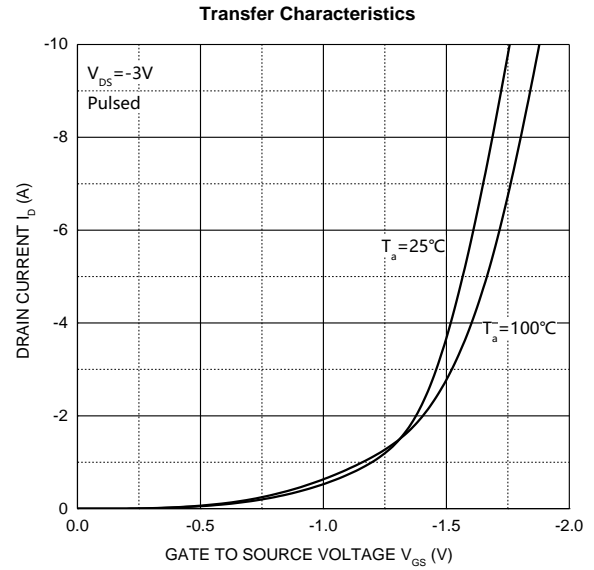
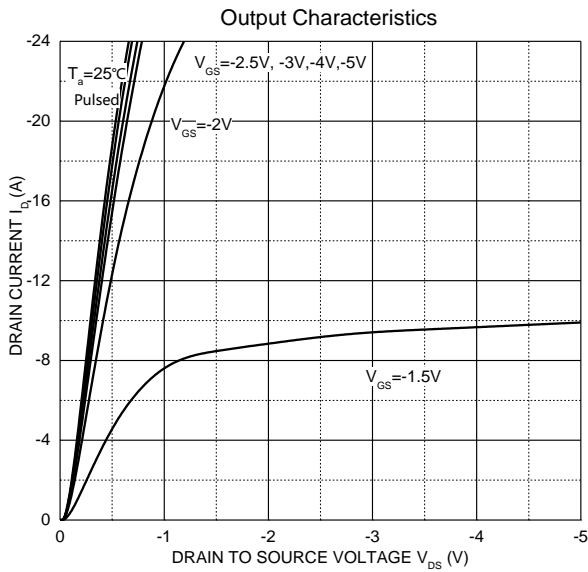
MOSFET ELECTRICAL CHARACTERISTICS($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-12			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = -12V, V_{GS} = 0V$			-1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 10V, V_{DS} = 0V$			± 100	nA
Gate threshold voltage ⁽⁵⁾	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.4	-0.7	-1	V
Drain-source on-resistance ⁽⁵⁾	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -6.7A$		12	18	m Ω
		$V_{GS} = -2.5V, I_D = -4.2A$		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	$t_{d(on)}$	$V_{DD} = -6V, V_{GEN} = -4.5V, I_D = -4A$ $R_L = 6\Omega, R_{GEN} = 1\Omega$		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	$T_C = 25^\circ\text{C}$			-16	A
Diode pulsed forward current ⁽¹⁾	I_{SM}				-48	A
Diode Forward voltage ⁽⁴⁾	V_{DS}	$V_{GS} = 0V, I_S = -2A$		-0.82	-1.2	V

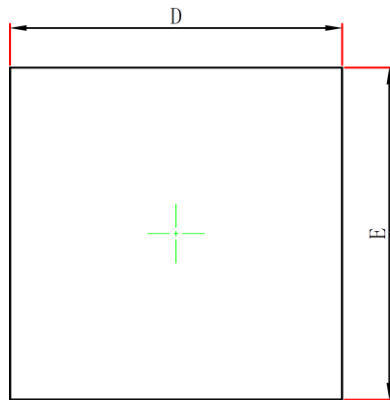
Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. This test is performed with no heat sink at $T_a=25^\circ\text{C}$.
3. This test is performed with infinite heat sink at $T_c=25^\circ\text{C}$.
4. Surface mounted on FR4 board, $t \leq 10S$.
5. Pulse Test: Pulse With $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
6. Guaranteed by design, not subject to production testing.

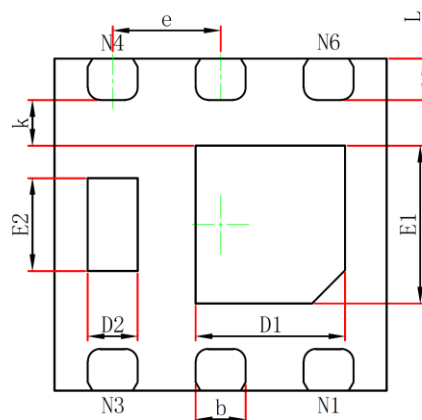
Typical Electrical and Thermal Characteristics



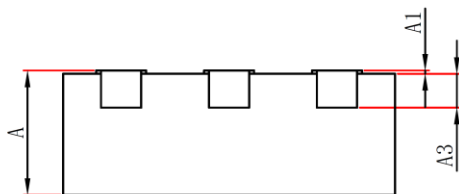
DFN2x2-6L Package Information



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