

Product Summary

V _{(BR)DSS}	R _{DS(on)TYP}	I _D
18V	6.2mΩ@4.5V	10A
	6.3mΩ@4.0V	
	6.4mΩ@3.8V	
	6.9mΩ@3.1V	
	7.6mΩ@2.5V	

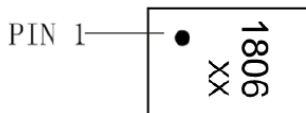
Feature

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

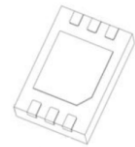
Application

- Load Switch
- DC/DC Converter

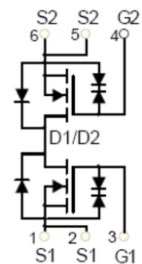
MARKING:



DFN2X3-6L



Schematic diagram



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain - Source Voltage	V _{DS}	18	V
Gate - Source Voltage	V _{GS}	±10	V
Continuous Drain Current ^{1,5}	I _D	10	A
	T _A = 25°C		
Pulsed Drain Current ²	I _{DM}	50	A
Power Dissipation ^{4,5}	P _D	1.5	mW
	T _A = 25°C		
Thermal Resistance from Junction to Ambient ⁵	R _{θJA}	83.3	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55~ +150	°C

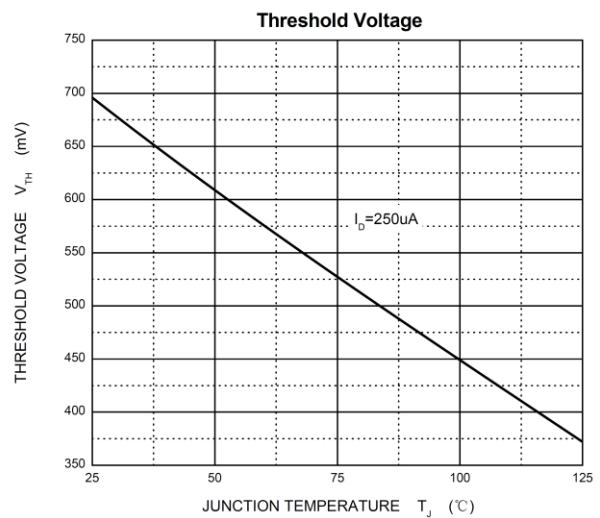
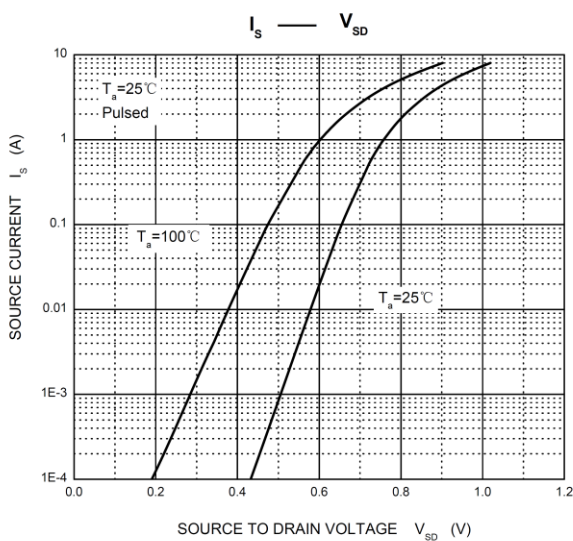
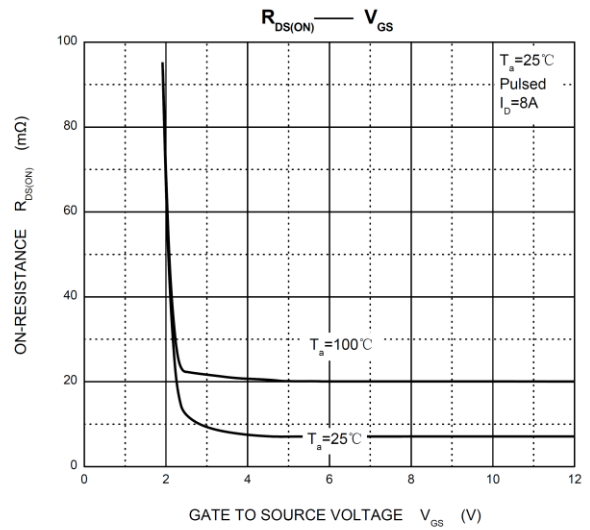
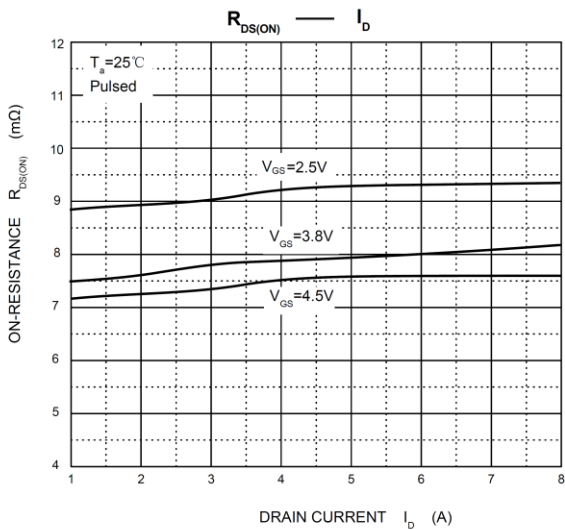
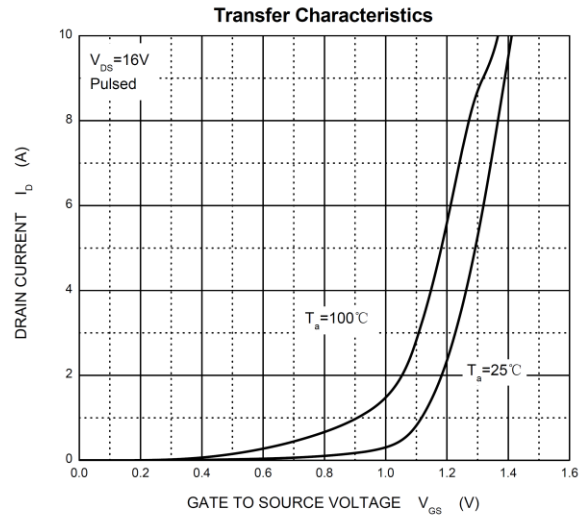
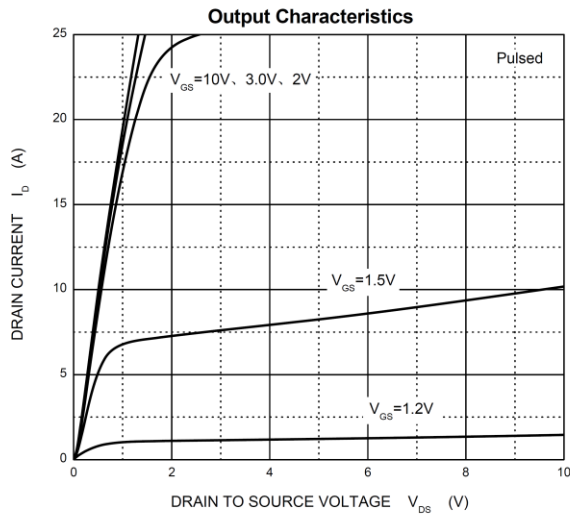
MOSFET ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	18			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 16V, V_{GS} = 0V$			1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 8V, V_{DS} = 0V$			± 5	μA
On Characteristics³						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.4	0.7	1.0	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 3A$		6.2	7.5	m Ω
		$V_{GS} = 4.5V, I_D = 3A$		6.3	7.8	
		$V_{GS} = 4.5V, I_D = 3A$		6.4	8.1	
		$V_{GS} = 2.5V, I_D = 3A$		6.9	9.1	
		$V_{GS} = 1.8V, I_D = 3A$		7.6	14.5	
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$		1855		pF
Output Capacitance	C_{oss}			210		
Reverse Transfer Capacitance	C_{rss}			185		
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 10V, V_{GS} = 4.5V, I_D = 7A$		15		nC
Gate-source Charge	Q_{gs}			2.0		
Gate-drain Charge	Q_{gd}			5.1		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = 10V, V_{GS} = 5V, R_L = 1.35\Omega, R_G = 3\Omega$		2.2		ns
Turn-on Rise Time	t_r			5.9		
Turn-off Delay Time	$t_{d(off)}$			40		
Turn-off Fall Time	t_f			90		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V_{SD}	$V_{GS} = 0V, I_S = 1A$			1.2	V

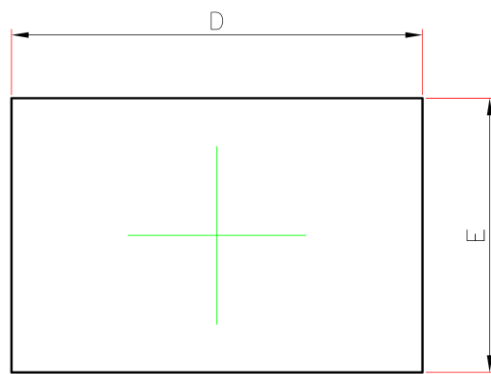
Notes :

- 1.The maximum current rating is limited by package.
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 4.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.
- 5.Device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

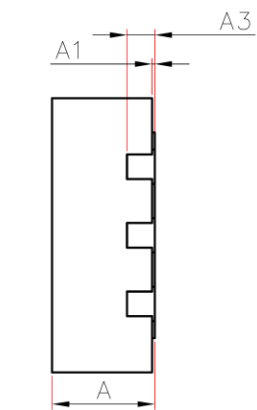
Typical Characteristics



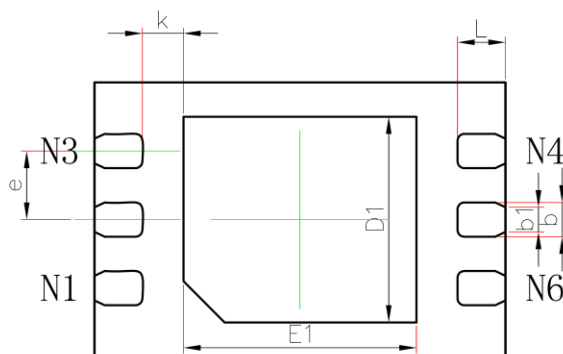
DFN2X3-6L Package Information



TOP VIEW



SIDE VIEW



BOTTOM VIEW

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	2.900	3.100	0.114	0.122
E	1.900	2.100	0.075	0.083
D1	1.400	1.600	0.055	0.063
E1	1.600	1.800	0.063	0.071
b	0.200	0.300	0.008	0.012
k	0.150	0.350	0.006	0.014
b1	0.180REF		0.007REF	
e	0.500BSC		0.020BSC	
L	0.300	0.450	0.012	0.018