



### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
30V	8.5mΩ@10V	16A
	12mΩ@4.5V	

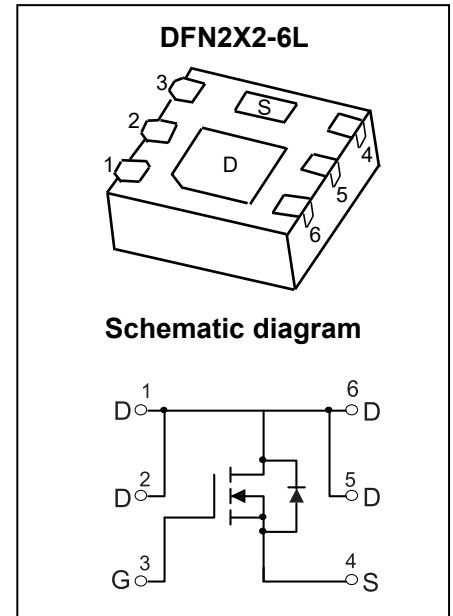
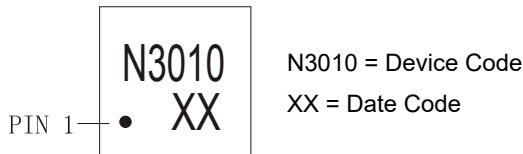
### Feature

- Trench Technology Power MOSFET
- Low  $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance
- 100% Avalanche test

### Application

- Power Switching Application

### MARKING:



### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain - Source Voltage	$V_{DS}$	30	V
Gate - Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current <sup>1</sup>	$T_A = 25^\circ\text{C}$	$I_D$	16 A
	$T_A = 55^\circ\text{C}$	$I_D$	12 A
	$T_A = 100^\circ\text{C}$	$I_D$	10 A
Pulsed Drain Current <sup>2</sup>	$I_{DM}$	64	A
Single Pulsed Avalanche Current <sup>3</sup>	$I_{AS}$	17	A
Single Pulsed Avalanche Energy <sup>3</sup>	$E_{AS}$	72	mJ
Power Dissipation <sup>4</sup>	$T_A = 25^\circ\text{C}$	$P_D$	3 W
Thermal Resistance from Junction to Ambient <sup>5</sup>	$R_{\theta JA}$	42	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55~ +150	$^\circ\text{C}$

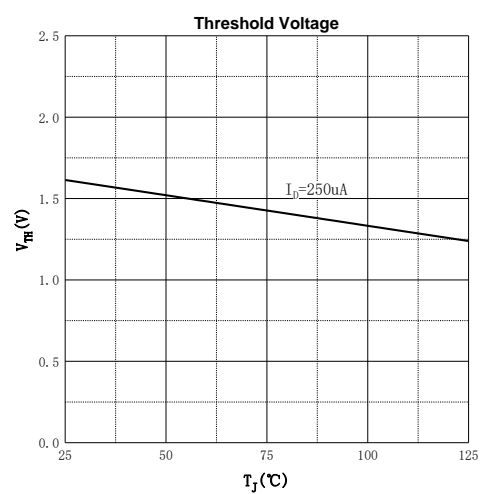
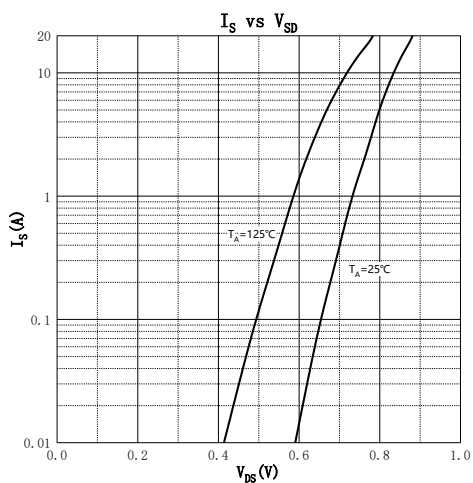
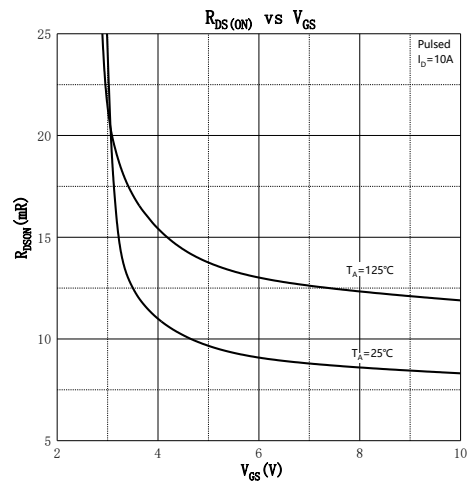
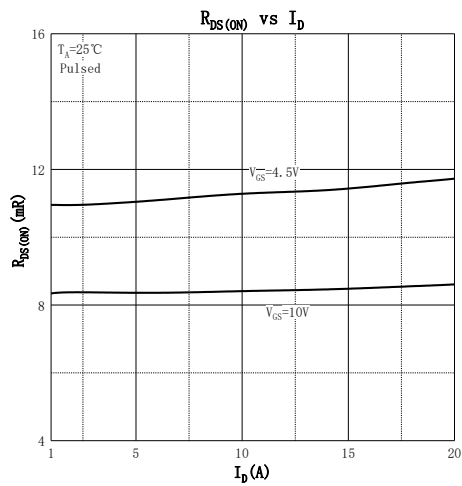
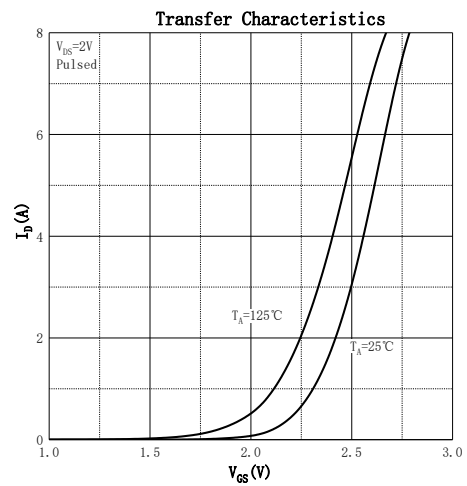
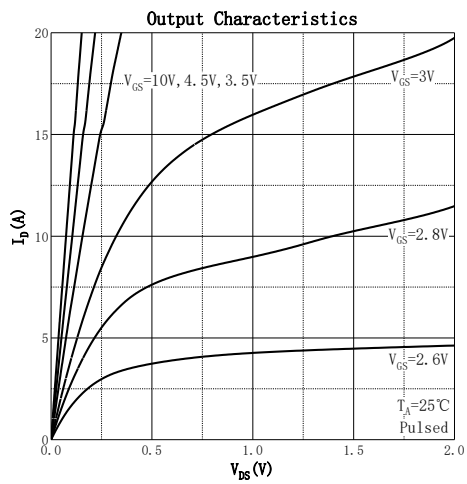
**MOSFET ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Off Characteristics</b>						
Drain - Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	30			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 24V, V <sub>GS</sub> = 0V			1	μA
Gate - Body Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V			±100	nA
<b>On Characteristics<sup>3</sup></b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	1.0	1.5	3.0	V
Drain-source On-resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 5A		8.5	12	mΩ
		V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 5A		12	18	
<b>Dynamic Characteristics</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0V, f = 1MHz		1265		pF
Output Capacitance	C <sub>oss</sub>			144		
Reverse Transfer Capacitance	C <sub>rss</sub>			134		
Gate Resistance	R <sub>g</sub>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = 0V, f = 1MHz		1.5		Ω
<b>Switching Characteristics</b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 10V, I <sub>D</sub> = 10A		12		nC
Gate-source Charge	Q <sub>gs</sub>			4.7		
Gate-drain Charge	Q <sub>gd</sub>			3.4		
Turn-on Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = 15V, V <sub>GS</sub> = 10V, R <sub>L</sub> = 1.5Ω R <sub>G</sub> = 3Ω		6.8		ns
Turn-on Rise Time	t <sub>r</sub>			12		
Turn-off Delay Time	t <sub>d(off)</sub>			22		
Turn-off Fall Time	t <sub>f</sub>			7		
<b>Source - Drain Diode Characteristics</b>						
Diode Forward Voltage <sup>3</sup>	V <sub>SD</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = 5A			1.2	V

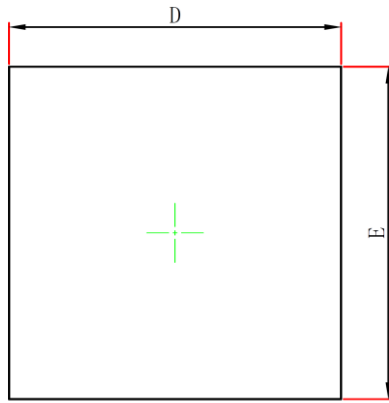
Notes :

- 1.The maximum current rating is limited by package.And device mounted on a large heatsink
- 2.Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.
- 3.EAS condition: V<sub>DD</sub> = 15V, V<sub>GS</sub> = 10V, L = 0.5mH, R<sub>G</sub> = 25Ω Starting T<sub>J</sub> = 25°C.
- 4.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.
- 5.The power dissipation P<sub>D</sub> is limited by T<sub>J(MAX)</sub> = 150°C.And device mounted on a large heatsink
- 6.Device mounted on 1in<sup>2</sup> FR-4 board with 2oz. Copper, in a still air environment with T<sub>A</sub> =25°C.

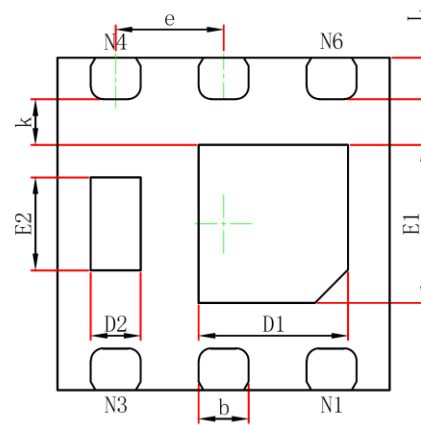
**Typical Characteristics**



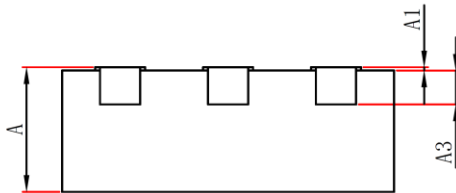
## DFN2X2-6L Package Information



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