20V Dual N-Channel Enhancement Mode Power MOSFET

Feature

- Super high density cell design for extremely low RDS (ON)
- DFN2X2-6L package design

Application

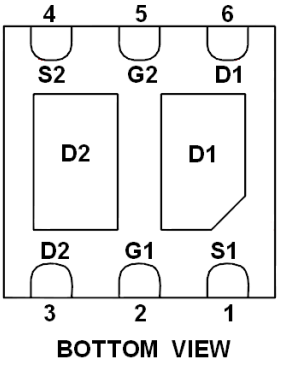
- Power Management in Note book
- LED Display
- DC-DC System
- LCD Panel

Ordering Information

- Shipping qty:3000 /7inch Tape Reel

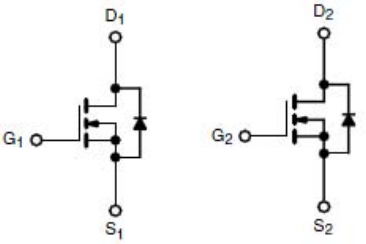
Package and Pin Configuration

DFN2X2-6



BOTTOM VIEW

Circuit diagram



Absolute Maximum Ratings (TA=25℃unless otherwise noted)

Parameter		Symbol	Rating	Unit
Drain- Source Voltage		V_{DSS}	20	V
Gate –Source Voltage		V_{GSS}	± 12	V
Continuous Drain Current(TJ=150℃)	T_A=25℃	I_D	4.5	A
	T_A=70℃		2.4	
Pulsed Drain Current		I_{DM}	20	A
Continuous Source Current(Diode Conduction)		I_S	1.7	A
Power Dissipation	T_A=25℃	P_D	1.9	W
	T_A=70℃		1.2	
Operating Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{STG}	- 55/150	℃
Thermal Resistance-Junction to Ambient		$R_{\theta JA}$	120	℃/W

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Electrical Characteristics (TA=25℃unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250uA	20			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA	0.3		0.8	
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±12V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=16V,V_{GS}=0V			1	uA
		V_{DS}=16V,V_{GS}=0V T_J=85℃			10	
On-State Drain Current	$I_{D(on)}$	V_{DS}≥ 5V,V_{GS}=4.5V	6			A
		V_{DS}≥ 5V,V_{GS}=2.5V	4			
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=4.5V,I_D=4.5A		38	52	mΩ
		V_{GS}=2.5V,I_D=3.6A		52	72	
Forward Transconductance	g_{FS}	V_{DS}=5V,I_D=3.6A		10		S
Diode Forward Voltage	V_{SD}	I_S=1.6A,V_{GS}=0V		0.85	1.2	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=10V,V_{GS}=4.5V I_D≡3.6A		4.2	5.0	nC
Gate-Source Charge	Q_{gs}			0.6		
Gate-Drain Charge	Q_{gd}			0.4		
Input Capacitance	C_{iss}	V_{DS}=10V,V_{GS}=0V f=1MHz		340		pF
Output Capacitance	C_{oss}			115		
Reverse Transfer Capacitance	C_{rss}			33		
Turn-On Time	$t_{d(on)}$	V_{DD}=10V,R_L=2.8Ω I_D≡3.6A,V_{GEN}=4.5V R_G=1Ω		8	15	ns
	t_r			8	15	
Turn-Off Time	$t_{d(off)}$			25	40	
	t_f			8	15	

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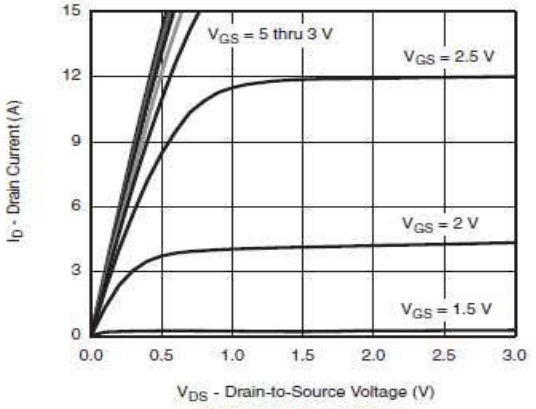
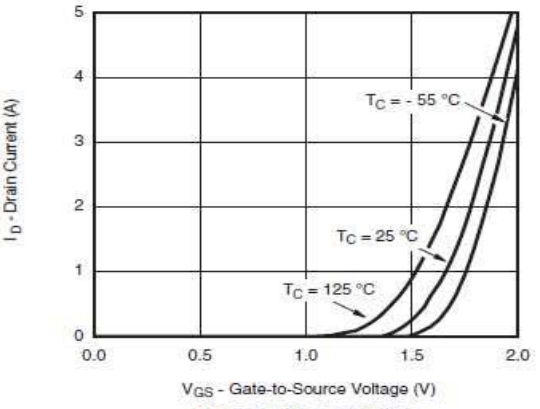
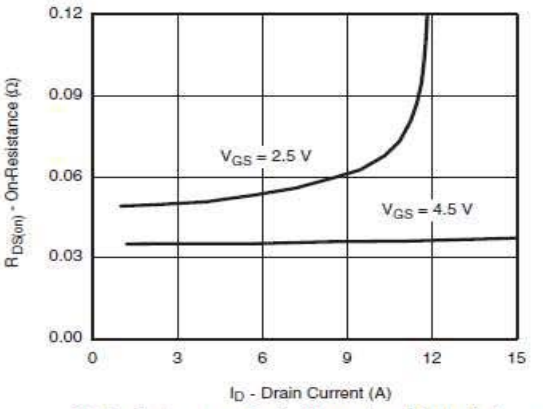


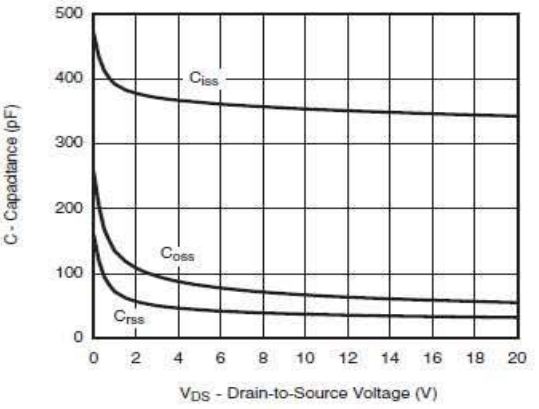
Output Characteristics



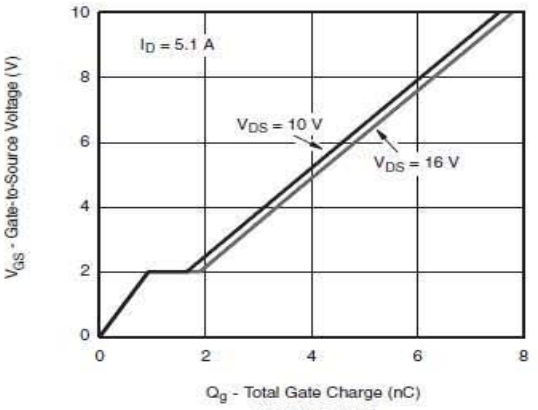
Transfer Characteristics



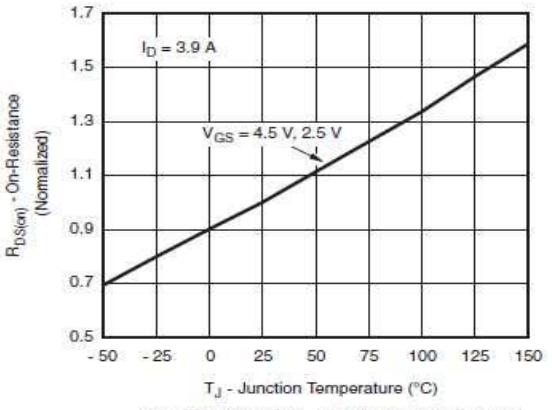
On-Resistance vs. Drain Current and Gate Voltage



Capacitance



Gate Charge



On-Resistance vs. Junction Temperature

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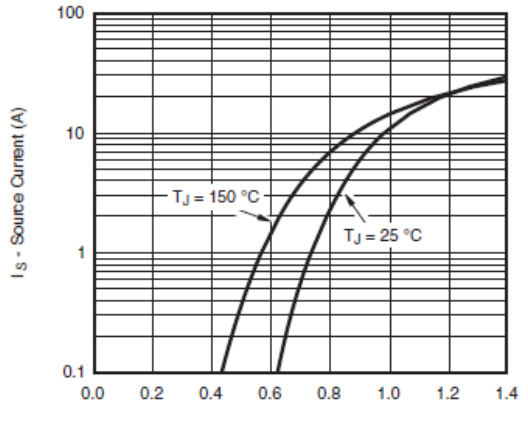
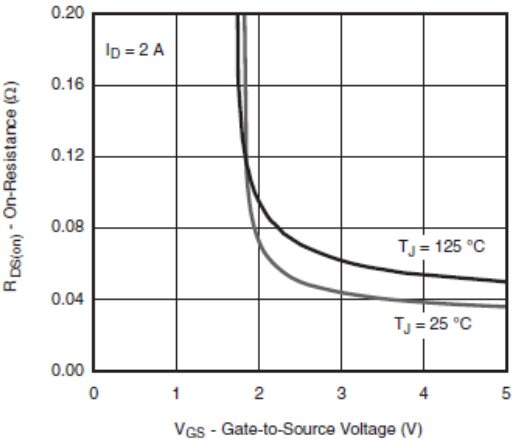
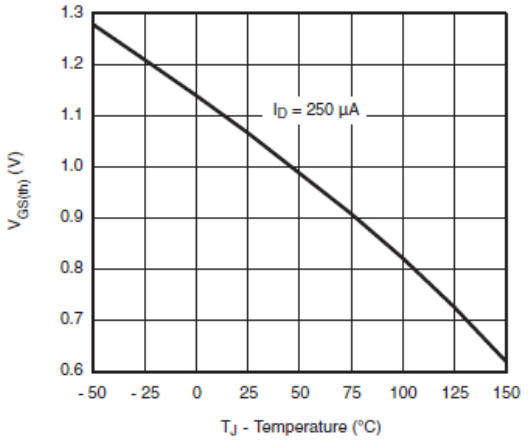


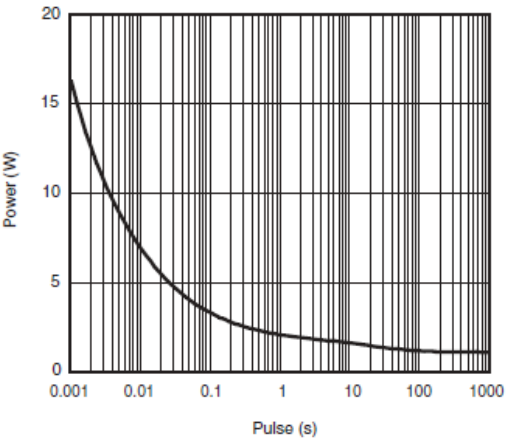
Source-Drain Diode Forward Voltage



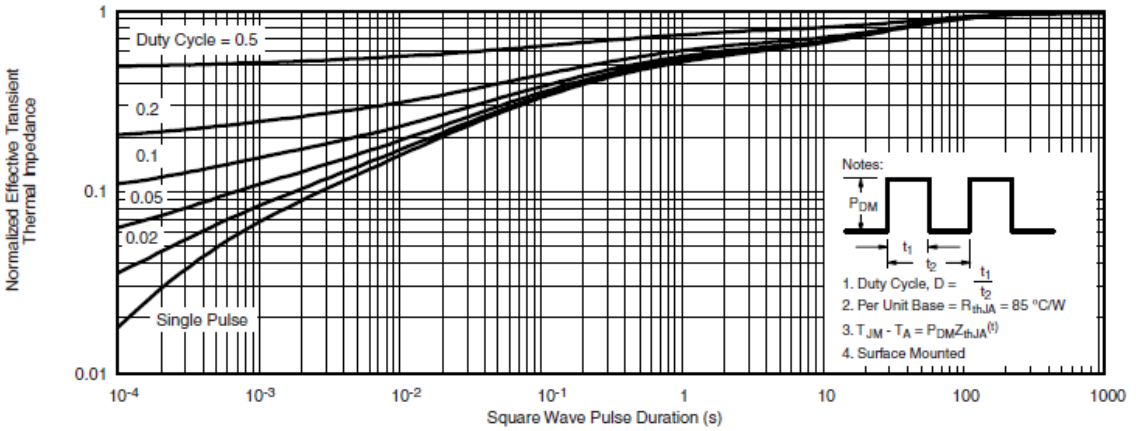
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



Single Pulse Power (Junction-to-Ambient)



Normalized Thermal Transient Impedance, Junction-to-Ambient

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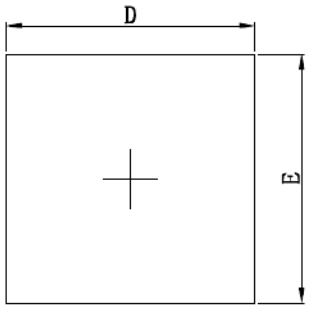
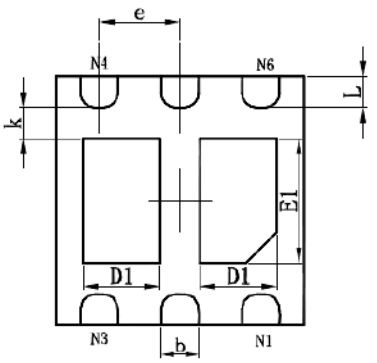
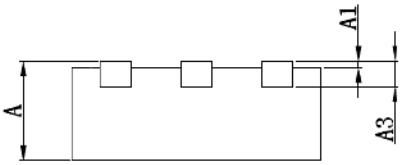
Package Information (DFN2X2-6L)



Top View



Bottom View



Side View

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700/0.800	0.800/0.900	0.028/0.031	0.031/0.035
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	1.924	2.076	0.076	0.082
E	1.924	2.076	0.076	0.082
D1	0.520	0.720	0.020	0.028
E1	0.900	1.100	0.035	0.043
k	0.200MIN.		0.008MIN.	
b	0.250	0.350	0.010	0.014
e	0.650TYP.		0.026TYP.	
L	0.174	0.326	0.007	0.013