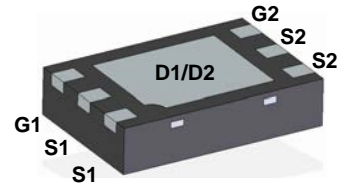


DN2012D

20V N-Channel Enhancement-Mode MOSFET



DFN2030-6A

1. FEATURES

- VDS= 20V
- RDS(ON), VGS@4.5V, IDS@6.0A ≤ 11.5mΩ
- RDS(ON), VGS@2.5V, IDS@3.0A ≤ 16mΩ
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

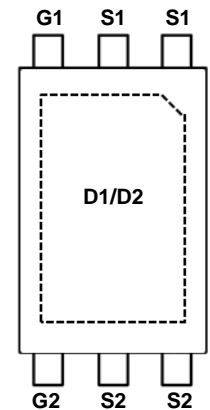
2. APPLICATIONS

- Li Battery

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
DN2012D	2D	4000/Tape&Reel

Bottom Drain Contact



Top View
Pin Configuration

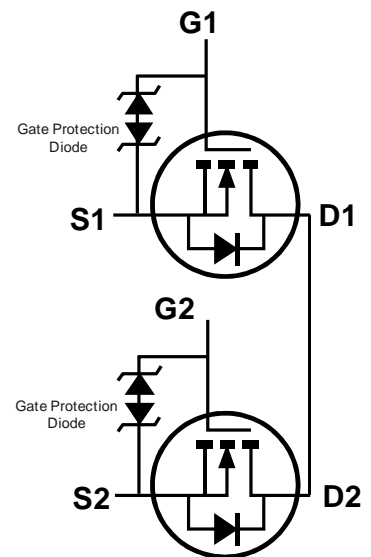
4. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	VDSS	20	V
Gate-to-Source Voltage – Continuous	VGS	±12	V
Drain Current			A
– Continuous TA = 25°C	ID	10	
– Pulsed(Note 1)	IDM	40	

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Maximum Power Dissipation	PD	1.2	W
Thermal Resistance, Junction-to-Ambient(Note 2)	RθJA	110	°C/W
Junction and Storage temperature	TJ, Tstg	-55~+150	°C

1. Repetitive Rating: Pulse width limited by the Maximum junction temperature.
2. 1-in² 2oz Cu PCB board.



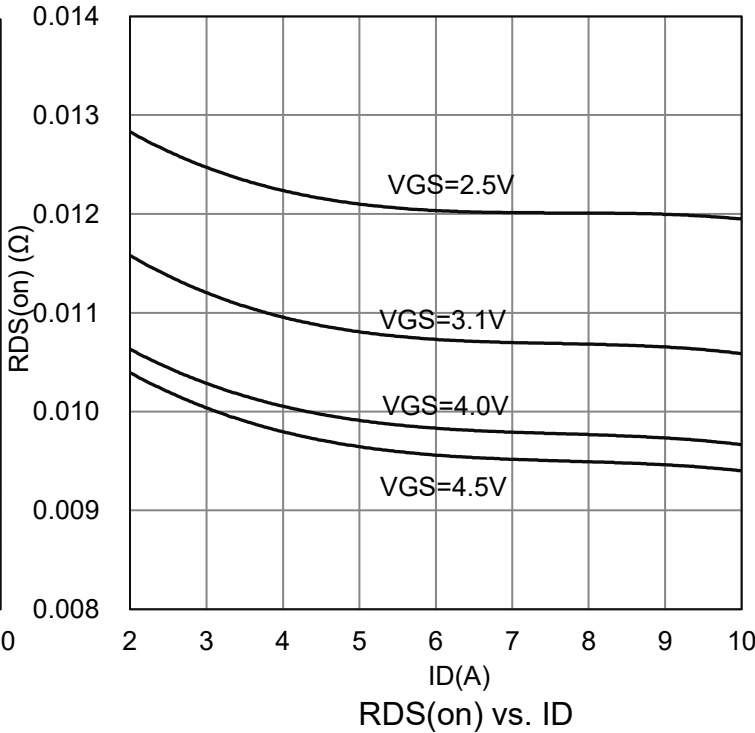
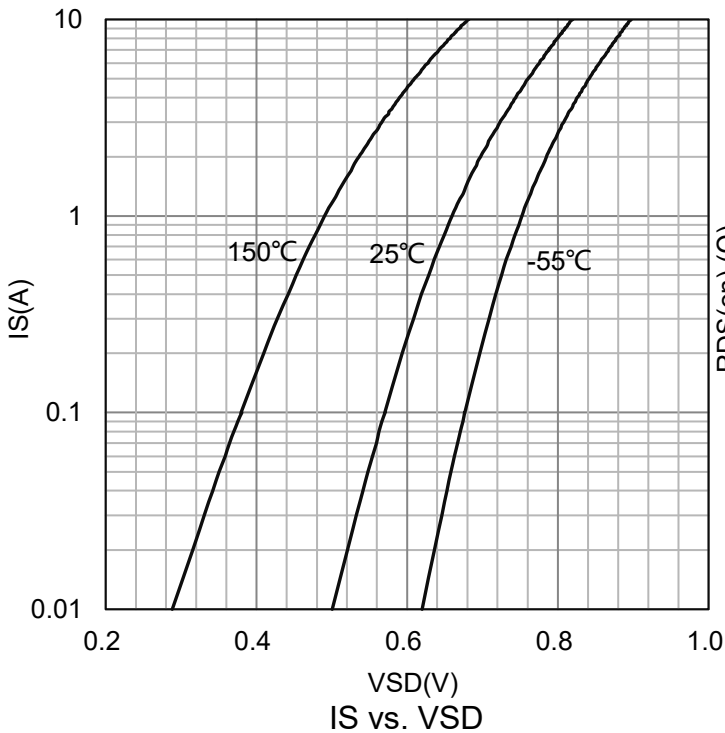
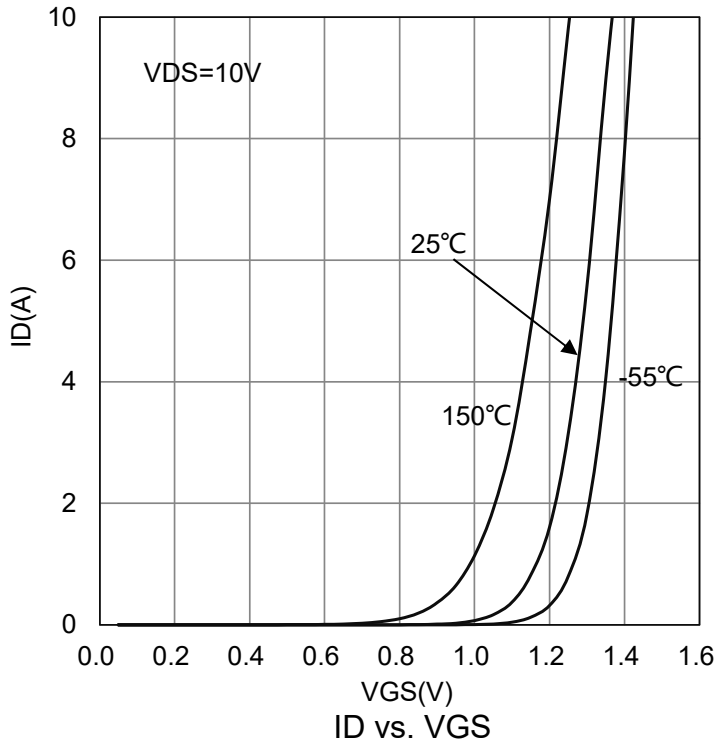
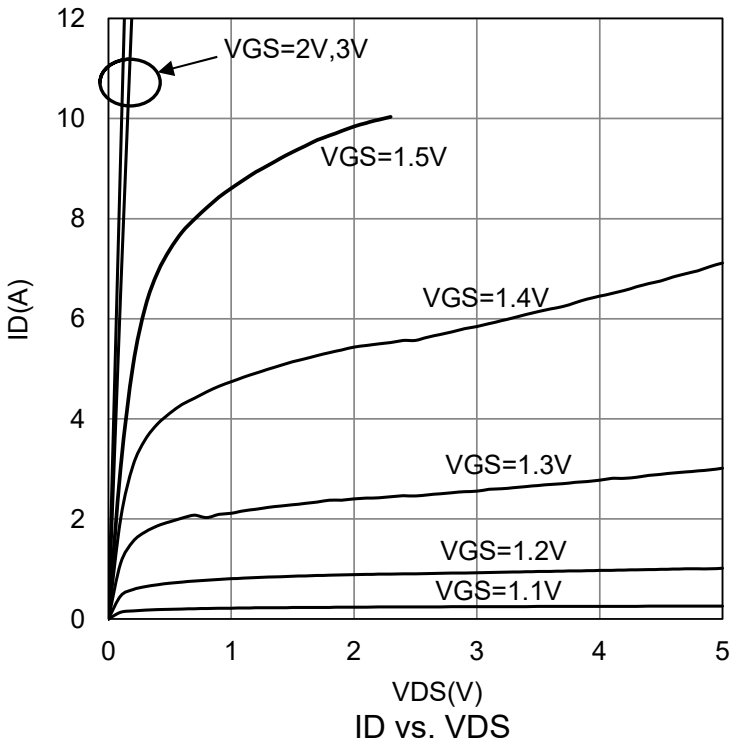
6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Static					
Drain-Source Breakdown Voltage (VGS = 0, ID = 250μA)	V(BR)DSS	20	-	-	V
Zero Gate Voltage Drain Current (VDS=16V, VGS=0V)	IDSS	-	-	1	μA
Gate-Body Leakage Current, Forward (VDS = 0 V, VGS = ±8 V)	IGSS	-	-	±10	μA
Gate Threshold Voltage (VDS = VGS, ID = 250μA)	VGS(th)	0.5	-	1.1	V
Static Drain-Source On-State Resistance(Note 3) (VGS = 4.5 V, ID =6 A) (VGS = 4 V, ID =6 A) (VGS = 3.1 V, ID = 3 A) (VGS = 2.5 V, ID = 3 A)	RDS(on)	-	8.5 9 10.5 12	11.5 12 13.5 16	mΩ
Gate-Resistance (VGS = 0 V, VDS=0V,f=1MHz)	Rg	-	1210	-	Ω
Dynamic					
Total Gate Charge	(VDS = 10 V, VGS = 4.5 V, ID = 6A)	Qg	-	13.5	-
Gate-Source Charge		Qgs	-	1.3	-
Gate-Drain Charge		Qgd	-	4.7	-
Turn-On Delay Time	(VDD = 15V, RL = 2.7Ω ID = 1A, VGEN = 10V, RG = 3Ω)	td(on)	-	7	14
Rise Time		tr	-	15	30
Turn-Off Delay Time		td(off)	-	38	76
Fall Time		tf	-	3	6
Input Capacitance	(VDS = 10V, VGS = 0 V, f = 1 MHz)	Ciss	-	700	-
Output Capacitance		Coss	-	112	-
Reverse Transfer Capacitance		Crss	-	86	-
Forward Voltage (VGS = 0 V, ISD = 3 A)	VSD	-	-	1.2	V

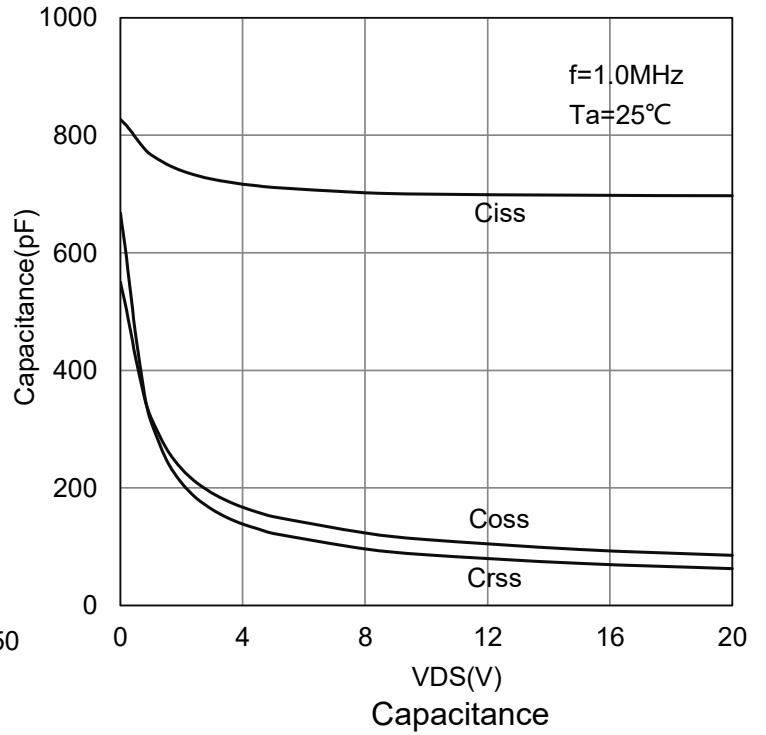
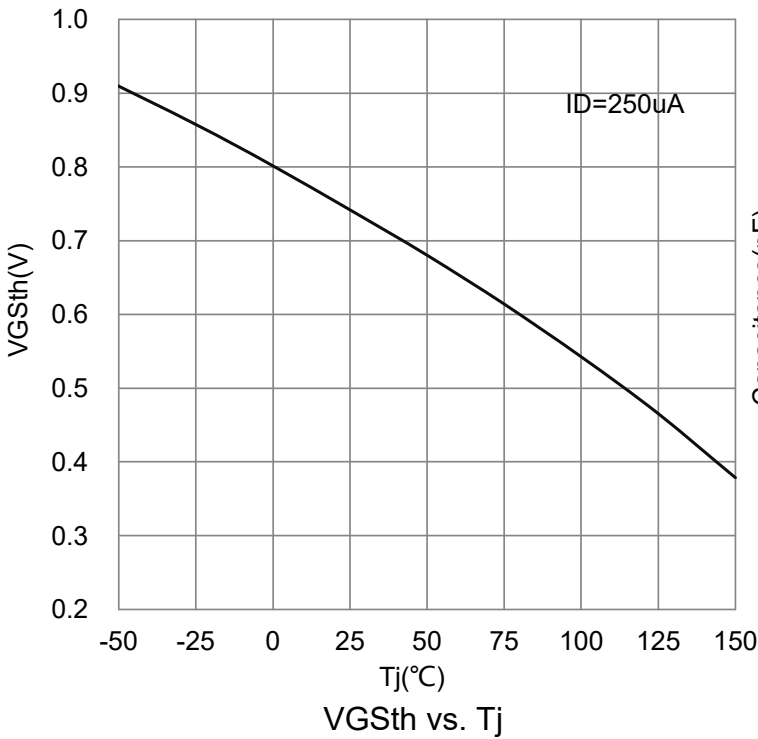
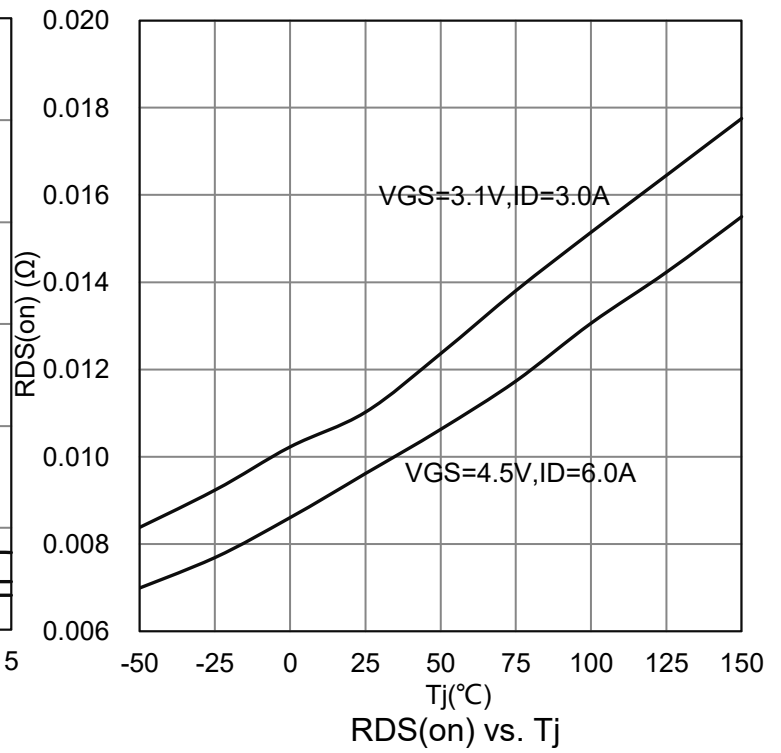
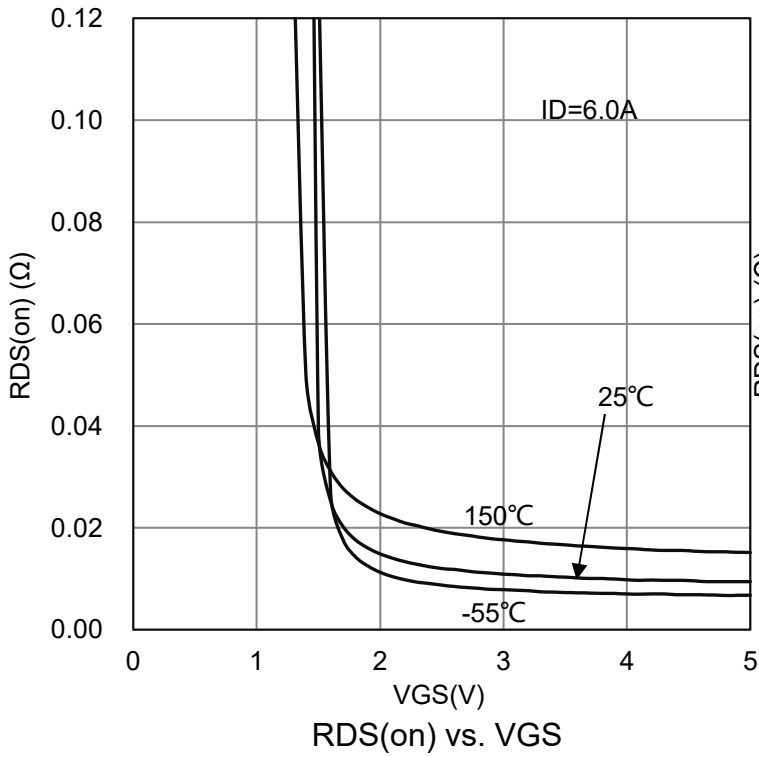
3.Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.



7.ELECTRICAL CHARACTERISTICS CURVES

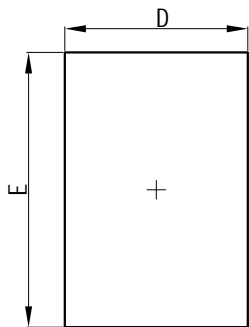


7.ELECTRICAL CHARACTERISTICS CURVES(Con.)

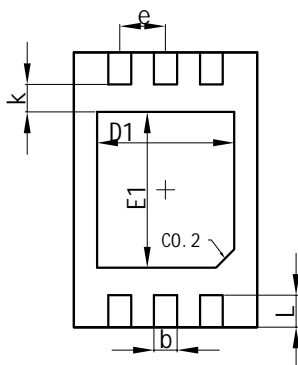


8.OUTLINE AND DIMENSIONS

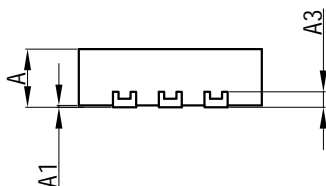
DFN2030-6A



TOP VIEW



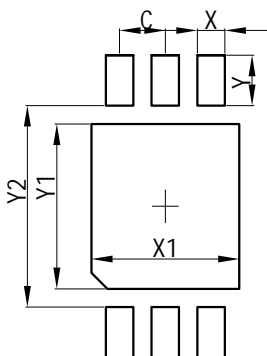
BOTTOM VIEW



SIDE VIEW

DFN2030-6A			
Dim	Min	Typ	Max
A	0.60	0.65	0.70
A1	0	0.02	0.05
A3	0.152REF.		
D	1.95	2.00	2.05
E	2.95	3.00	3.05
D1	1.45	1.50	1.55
E1	1.65	1.70	1.75
b	0.20	0.25	0.30
k	0.300TYP.		
e	0.500TYP.		
L	0.30	0.35	0.40
All Dimensions in mm			

9.SOLDERING FOOTPRINT



Dimensions	(mm)
C	0.50
X	0.30
X1	1.62
Y	0.55
Y1	1.80
Y2	2.20

