

# LN3420ADT2AG

N-Channel 30-V (D-S) MOSFET

## 1. FEATURES

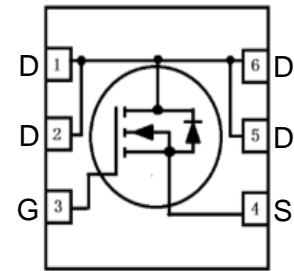
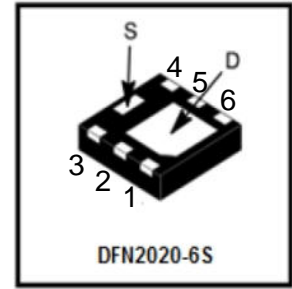
- Low RDS(on) trench technology.
- Low thermal impedance.
- Fast switching speed.
- We declare that the material of product are Halogen Free and compliance with RoHS requirements.

## 2. APPLICATION

- Power Routing
- DC/DC Conversion
- Motor Drives

## 3. ORDERING INFORMATION

Device	Marking	Shipping
LN3420ADT2AG	N2A	4000/Tape&Reel



## 4. MAXIMUM RATINGS(Ta = 25° C unless otherwise stated)

Parameter		Symbol	Limits	Unit
Drain-to-Source Voltage		VDSS	30	V
Gate-to-Source Voltage		VGS	±20	V
Continuous Drain Current	TC =25°C	ID	19	A
	TC =70°C		15	
	TA =25°C (Note 1)		11	
	TA =70°C (Note 1)		8	
Pulsed Drain Current (Note 2)		IDM	40	
Power Dissipation	TC =25°C	PD	11	W
	TC =70°C		7	
	TA =25°C (Note 1)		3.5	
	TA =70°C (Note 1)		2	
Avalanche Current		IAS	22	A
Avalanche Energy(L=0.1mH)		EAS	24.2	mJ
Operating Junction Temperature		TJ	-55 ~+150	°C
Storage Temperature Range		Tstg	-55 ~+150	

## 5. THERMAL CHARACTERISTICS

Parameter		Symbol	Limits	Unit
Maximum Junction-to-Ambient(Note 1)	t ≤10s	RθJA	35	°C/W
	Steady State		81	
Maximum Junction-to-Case	Steady State	RθJC	11	

1.Surface Mounted on 1" x 1" FR4 Board.

2.Pulse width limited by maximum junction temperature.

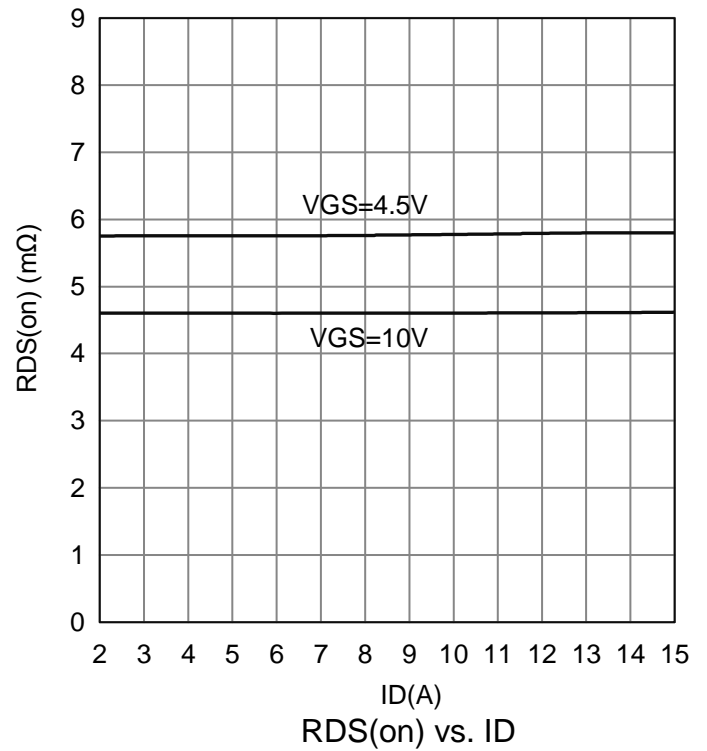
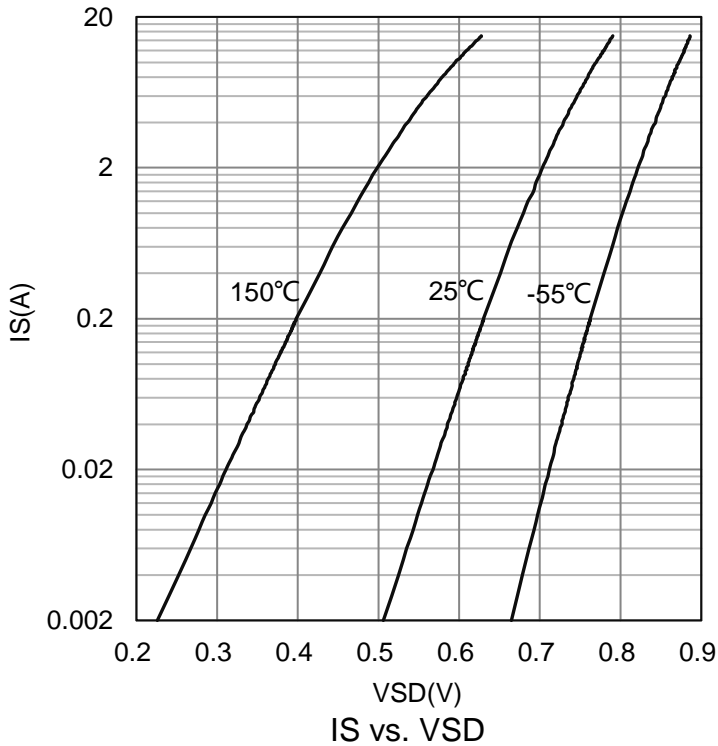
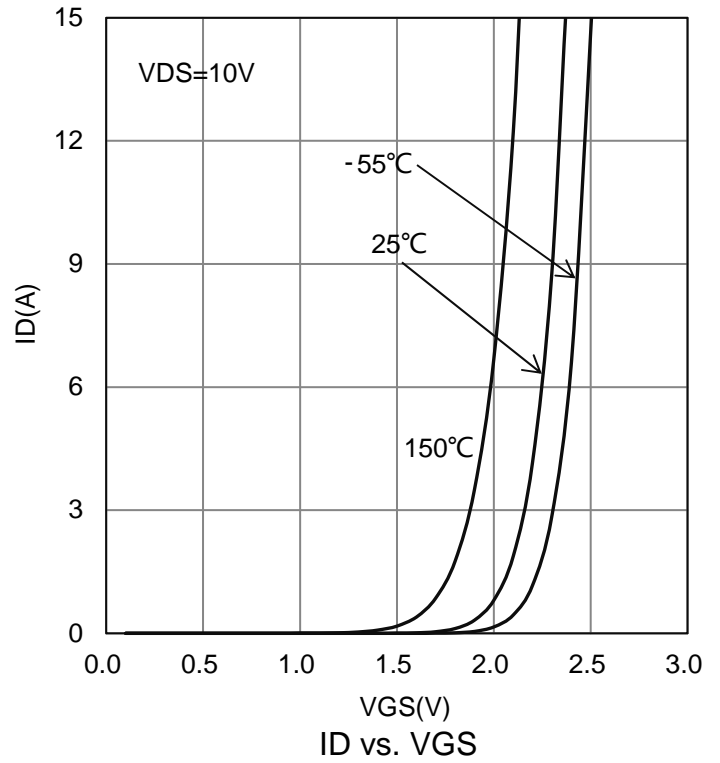
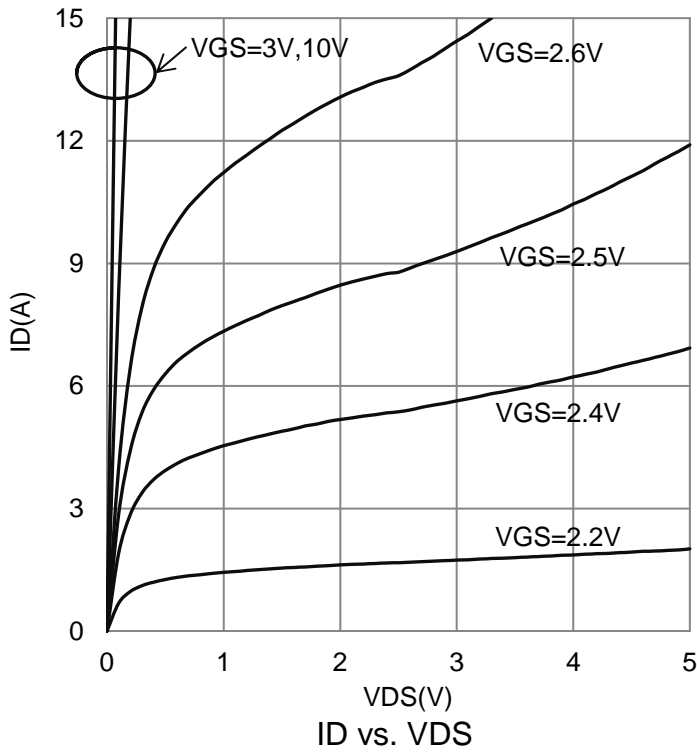
**6. ELECTRICAL CHARACTERISTICS**

Characteristic	Symbol	Min.	Typ.	Max.	Unit	
<b>Static</b>						
Drain-Source Breakdown Voltage (VGS = 0 V, ID = 250 $\mu$ A)	V(BR)DSS	30	-	-	V	
Gate-Source Threshold Voltage (VDS = VGS, ID = 250 $\mu$ A)	VGS(th)	1	1.5	2.5	V	
Gate-Body Leakage (VDS = 0 V, VGS = $\pm$ 20 V)	IGSS	-	-	$\pm$ 100	nA	
Zero Gate Voltage Drain Current (VDS = 24 V, VGS = 0 V) (VDS = 24 V, VGS = 0 V, TJ = 55°C)	IDSS	-	-	1 25	$\mu$ A	
Drain-Source On-Resistance(Note 3) (VGS = 10 V, ID = 8 A) (VGS = 4.5 V, ID = 5 A)	RDS(on)	-	-	6 9	m $\Omega$	
Diode Forward Voltage(Note 3) (IS = 2.3 A, VGS = 0 V)	VSD	-	0.82	1.2	V	
<b>Dynamic(Note 4)</b>						
Total Gate Charge	(VDS = 15 V, VGS = 4.5 V, ID = 8.2 A)	Qg	-	12.7	-	nC
Gate-Source Charge		Qgs	-	3.8	-	
Gate-Drain Charge		Qgd	-	3.9	-	
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 1 MHz)	Ciss	-	1498	-	pF
Output Capacitance		Coss	-	191	-	
Reverse Transfer Capacitance		Crss	-	148	-	
Turn-On Delay Time	(VDS = 15 V, RL = 1.9 $\Omega$ , ID = 8.2 A, VGEN = 10 V, RGEN = 6 $\Omega$ )	td(on)	-	2	-	ns
Rise Time		tr	-	4	-	
Turn-Off Delay Time		td(off)	-	16	-	
Fall Time		tf	-	4	-	

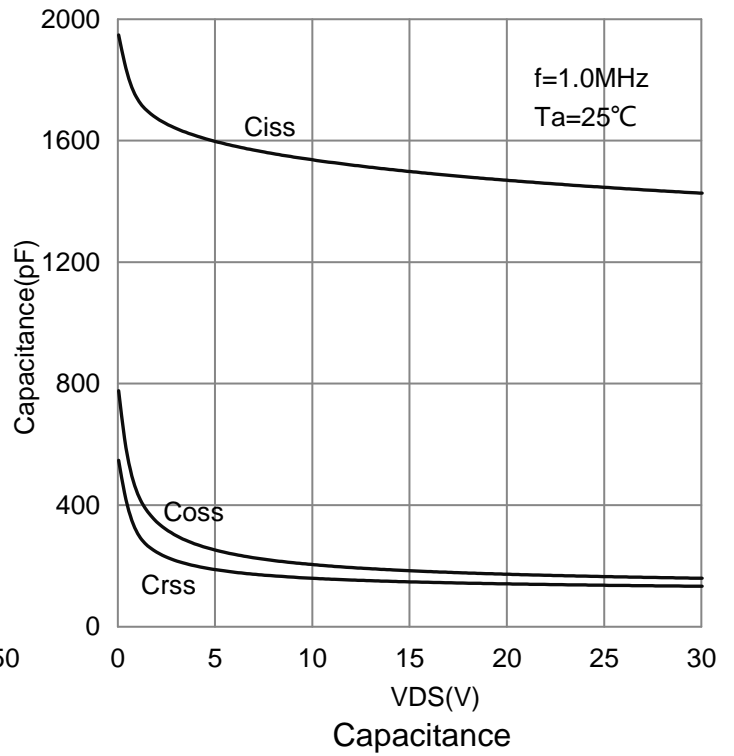
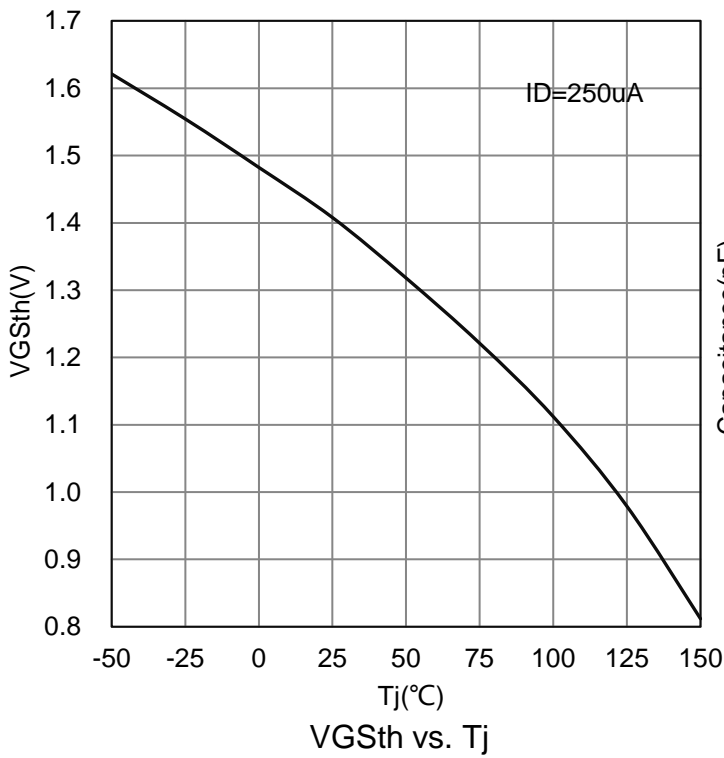
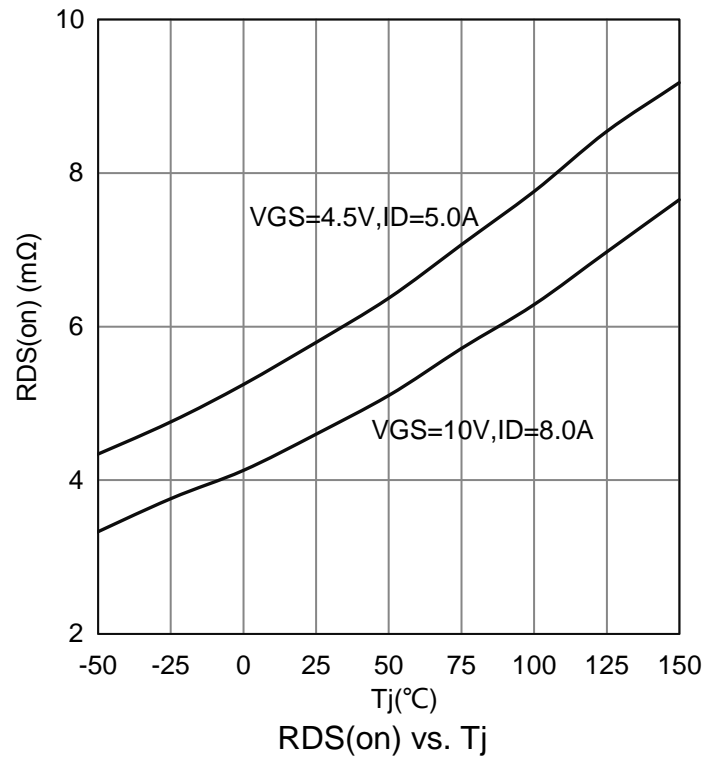
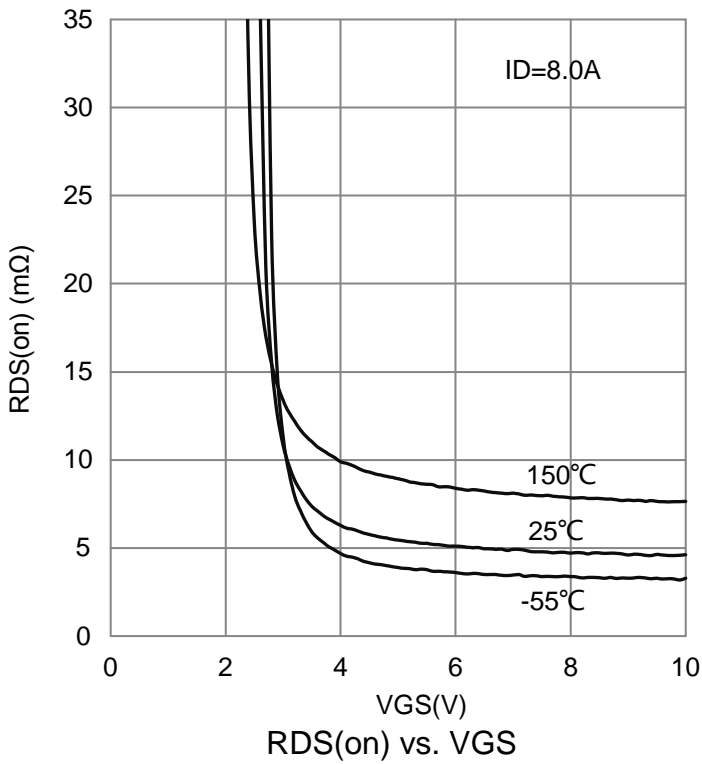
3. Pulse test: PW  $\leq$  300 $\mu$ s duty cycle  $\leq$  2%.

4. Guaranteed by design, not subject to production testing.

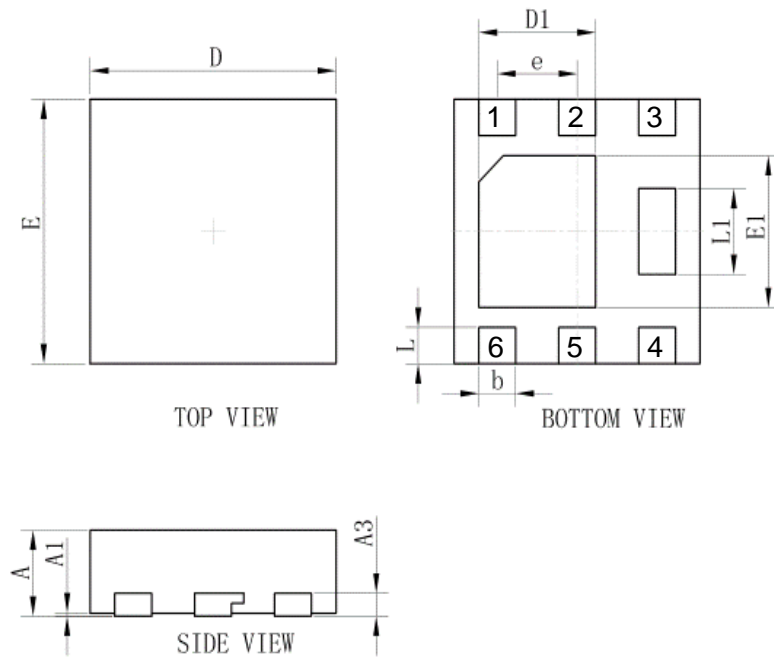
**7. ELECTRICAL CHARACTERISTICS CURVES**



**7.ELECTRICAL CHARACTERISTICS CURVES(Con.)**

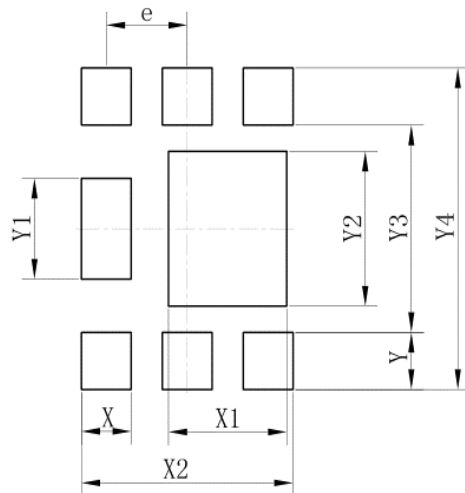


### 8. OUTLINE AND DIMENSIONS



DFN2020-6S			
DIM	MIN	NOR	MAX
A	0.60	0.65	0.70
A1	0.01	0.03	0.05
b	0.25	0.30	0.35
D	1.95	2.00	2.05
E	1.95	2.00	2.05
e	0.65TYP.		
L	0.23	0.28	0.33
L1	0.60	0.65	0.65
D1	0.90	0.95	1.00
E1	1.10	1.15	1.20
A3	0.152REF		
All Dimensions in mm			

### 9. SOLDERING FOOTPRINT



DFN2020-6S	
Dim	(mm)
X	0.40
X1	0.95
X2	1.70
e	0.65
Y	0.43
Y1	0.75
Y2	1.15
Y3	1.54
Y4	2.39

## **DISCLAIMER**

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.
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