

N3420AD

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

1. FEATURES

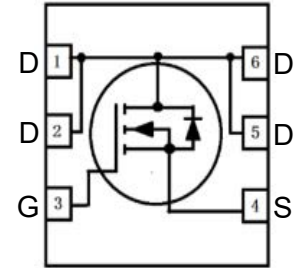
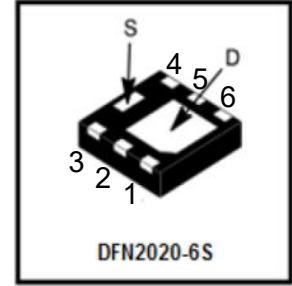
- Low RDS(on) trench technology.
- Low thermal impedance.
- Fast switching speed.
- We declare that the material of product are Halogen Free and compliance with RoHS requirements.

2. APPLICATION

- Power Routing
- DC/DC Conversion
- Motor Drives

3. ORDERING INFORMATION

Device	Marking	Shipping
N3420AD	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

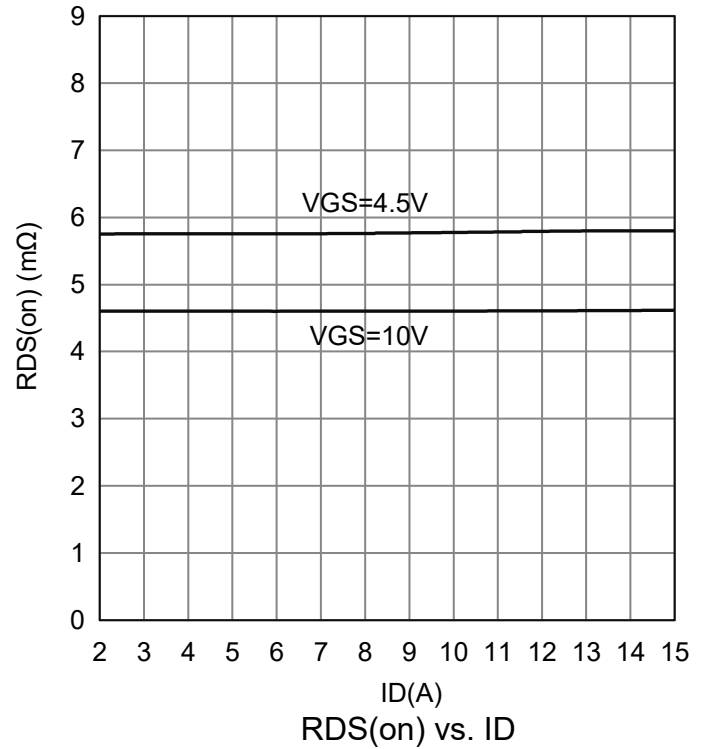
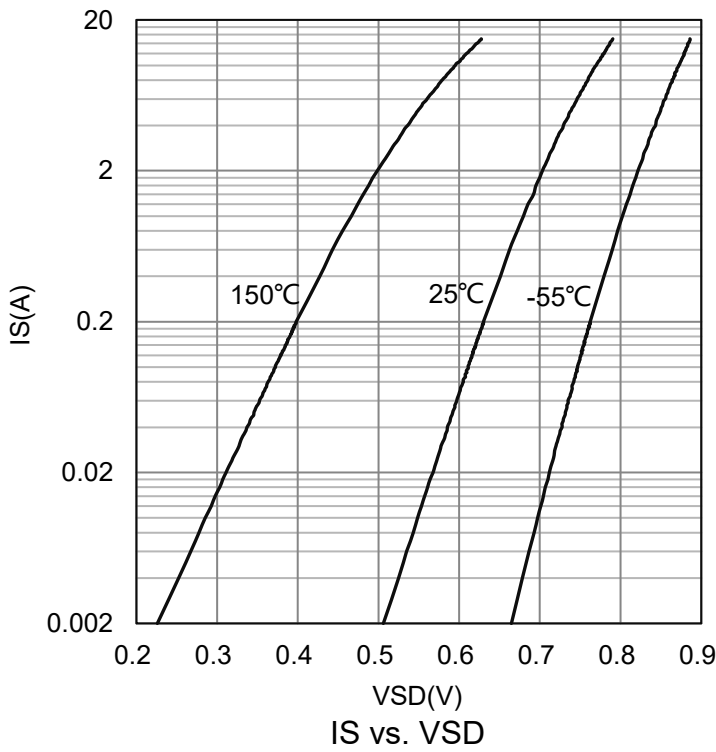
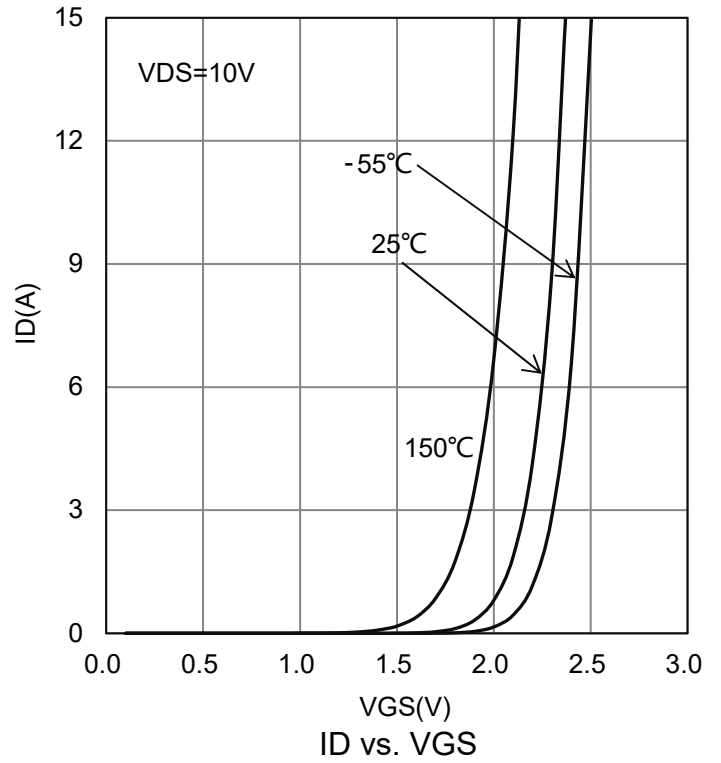
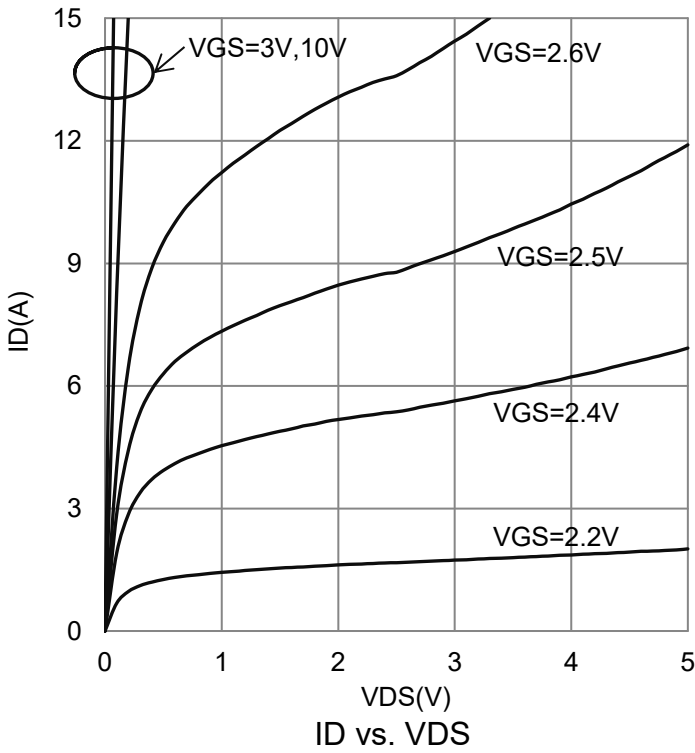
Characteristic	Symbol	Min.	Typ.	Max.	Unit	
Static						
Gate-Source Threshold Voltage (VDS = VGS, ID = 250 μ A)	VGS(th)	1	-	-	V	
Gate-Body Leakage (VDS = 0 V, VGS = \pm 20 V)	IGSS	-	-	\pm 100	nA	
Zero Gate Voltage Drain Current (VDS = 24 V, VGS = 0 V) (VDS = 24 V, VGS = 0 V, TJ = 55°C)	IDSS	-	-	1 25	μ 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 Ω	
Diode Forward Voltage(Note 3) (IS = 2.3 A, VGS = 0 V)	VSD	-	0.82	1.2	V	
Dynamic(Note 4)						
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 Ω , ID = 8.2 A, VGEN = 10 V, RGEN = 6 Ω)	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 μ s duty cycle \leq 2%.

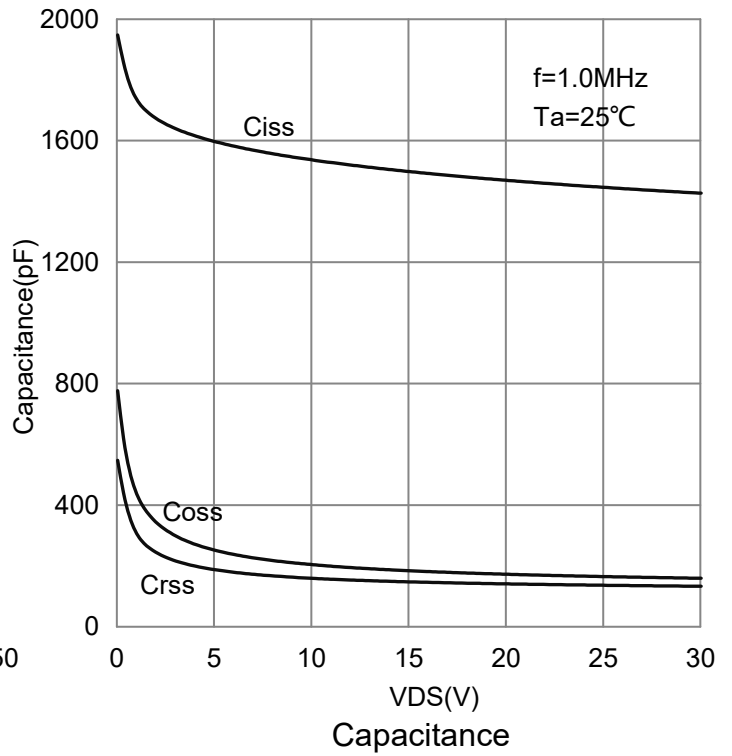
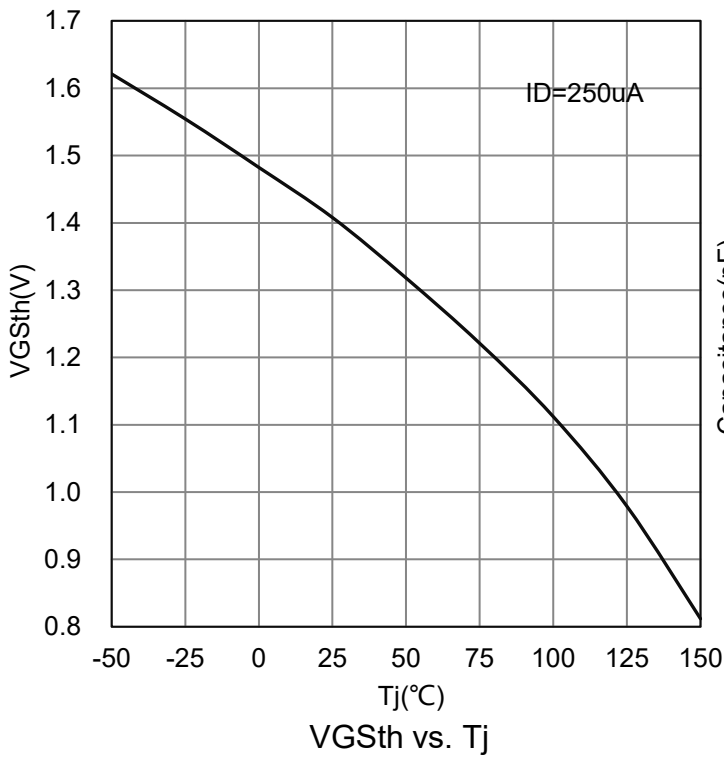
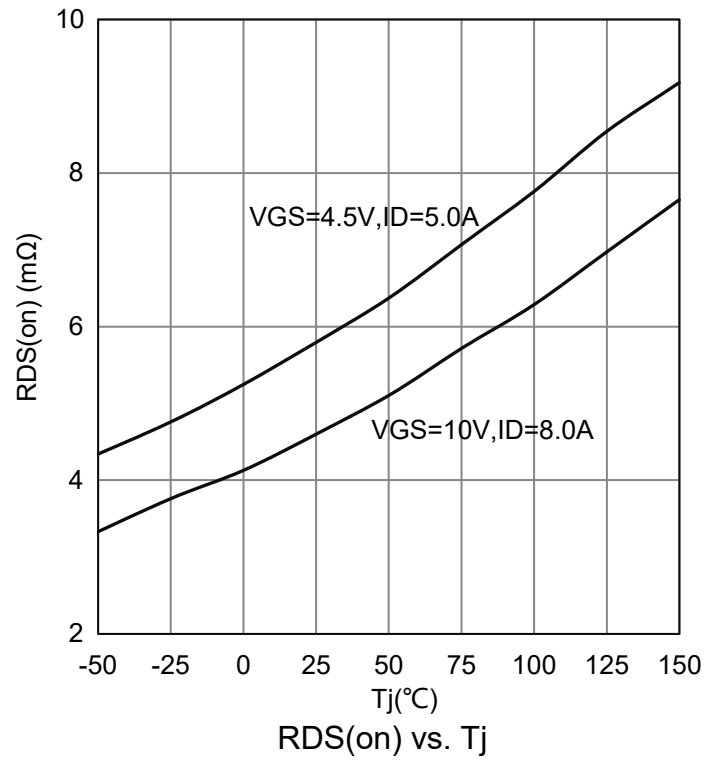
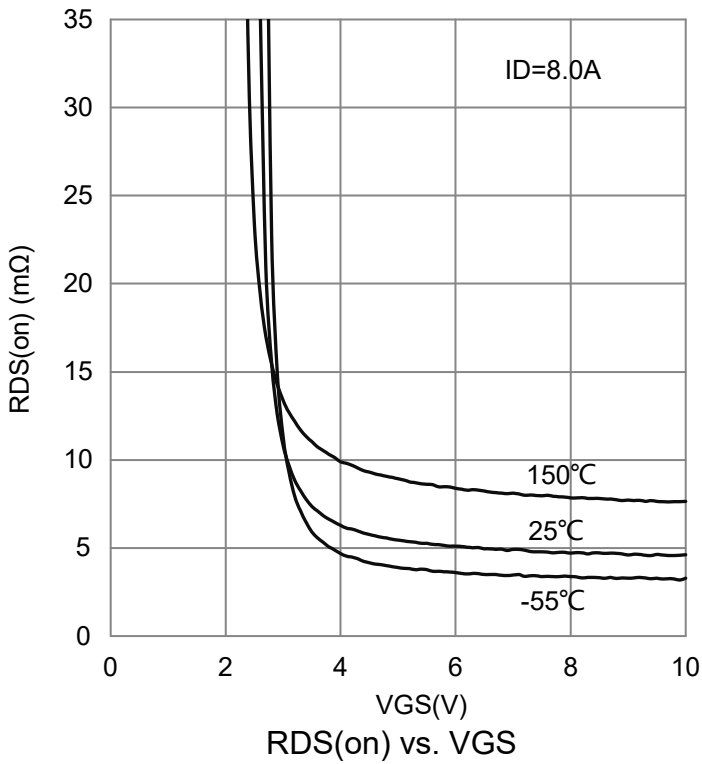
4. Guaranteed by design, not subject to production testing.

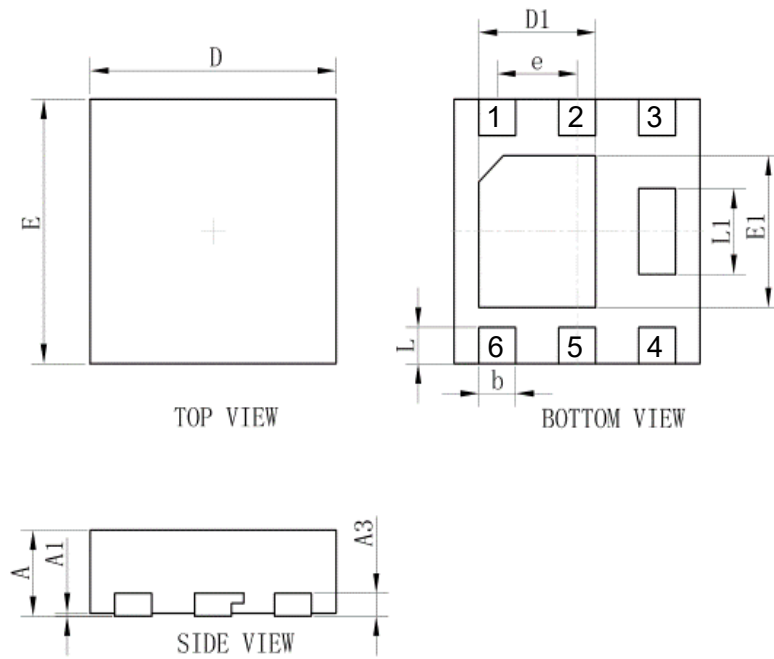


7.ELECTRICAL CHARACTERISTICS CURVES

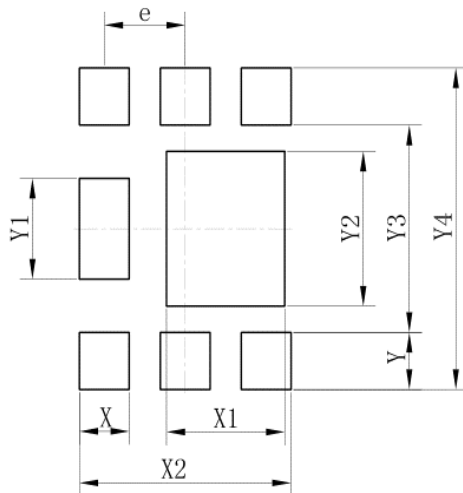


7.ELECTRICAL CHARACTERISTICS CURVES(Con.)



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

