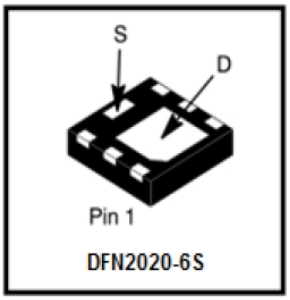
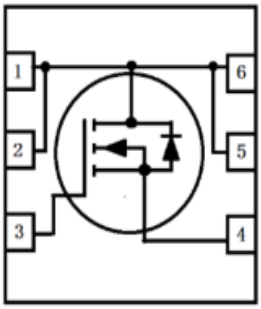
LN2324DT2AG

20V N-Channel (D-S) MOSFET



1. FEATURES

- VDS =20V
  RDS(ON)≤10.5mΩ,VGS@4.5V,IDS@10A
  RDS(ON)≤12.5mΩ,VGS@2.5V,IDS@8A
- Low RDS(ON) trench technology.
- Low thermal impedance.
- Fast switching speed.
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- MSL = 1



2. APPLICATIONS

- Power Routing
- Level Shifting and Driver Circuits

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LN2324DT2AG	AN	5000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25ºC)

Parameter		Symbol	Limits	Unit
Drain-Source Voltage		VDS	20	V
Gate-Source Voltage		VGS	± 8	
Continuous Drain Current(Note 1)	TA = 25℃	ID	14	A
	TA = 70℃		11	
Pulsed Drain Current(Note 2)		IDM	60	
Continuous Source Current (Diode Conduction)(Note 1)		IS	2.9	
Power Dissipation(Note 1)	TA = 25℃	PD	3	W
	TA = 70℃		1.9	
Operating Junction and Storage Temperature Range		TJ , Tstg	-55~+150	℃

Note:1. Surface Mounted on 1” x 1” FR4 Board.
2. Pulse width limited by maximum junction temperature.

5. THERMAL CHARACTERISTICS

Parameter		Symbol	Max	Unit
Maximum Junction-to-Ambient (Note 1)	t≤10S	RθJA	40	ºC/W
	Steady State		90	

6. ELECTRICAL CHARACTERISTICS (Ta= 25ºC)

Characteristic		Symbol	Min.	Typ.	Max.	Unit
Static						
Drain–Source Breakdown Voltage (VGS = 0V , ID = 250 uA)		V(BR)DSS	20	-	-	V
Gate-Source Threshold Voltage (VDS =VGS , ID =250μA)		VGS(th)	0.4	-	2.5	V
Gate-Body Leakage (VDS =0V, VGS =±8V)		IGSS	-	-	± 100	nA
Zero Gate Voltage Drain Current (VDS = 16 V, VGS = 0 V) (VDS = 16 V, VGS = 0 V, TJ = 55°C)		IDSS	- -	- -	1 10	μA
Drain-Source On-Resistance(Note 3) (VGS = 4.5 V, ID = 10 A) (VGS = 2.5 V, ID = 8 A)		RDS(ON)	- -	- -	10.5 12.5	mΩ
Diode Forward Voltage(Note 3) (IS = 1.4 A, VGS = 0 V)		VSD	-	0.74	1.2	V
DYNAMIC(Note 4)						
Total Gate Charge	(VDS = 10 V, VGS = 4.5 V,ID = 10 A)	Qg	-	22	-	nC
Gate-Source Charge		Qgs	-	1.9	-	
Gate-Drain Charge		Qgd	-	6	-	
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 1 MHz)	Ciss	-	1779	-	pF
Output Capacitance		Coss	-	166	-	
Reverse Transfer Capacitance		Crss	-	160	-	
Turn-On Delay Time	(VDS = 10 V, RL = 1Ω ,ID = 10 A,VGEN = 4.5 V, RGEN = 6Ω)	td(on)	-	25	-	ns
Turn-On Rise Time		tr	-	77	-	
Turn-Off Delay Time		td(off)	-	195	-	
Turn-Off Fall Time		tf	-	101	-	

3. Pulse test; pulse width ≤ 300μs, duty cycle≤ 2%.
4. Guaranteed by design, not subject to production testing.

7. ELECTRICAL CHARACTERISTICS CURVES

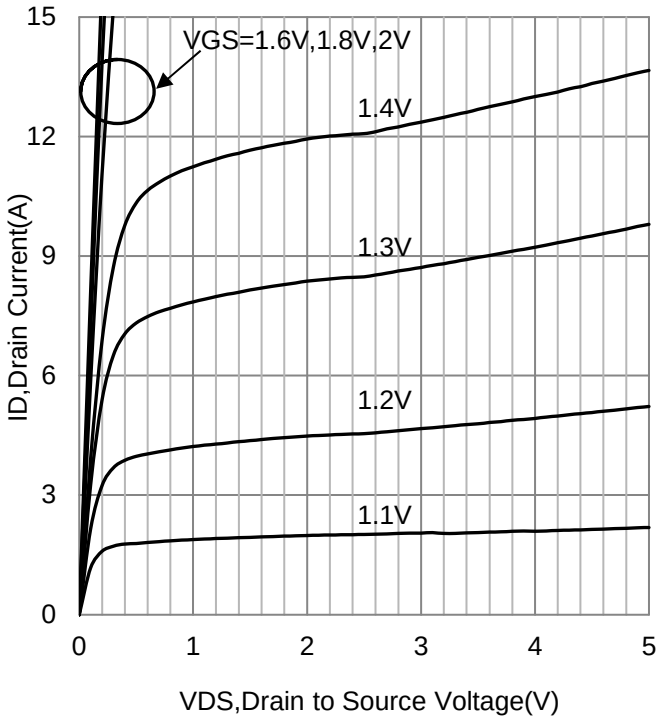


Figure 1.ID vs. VDS

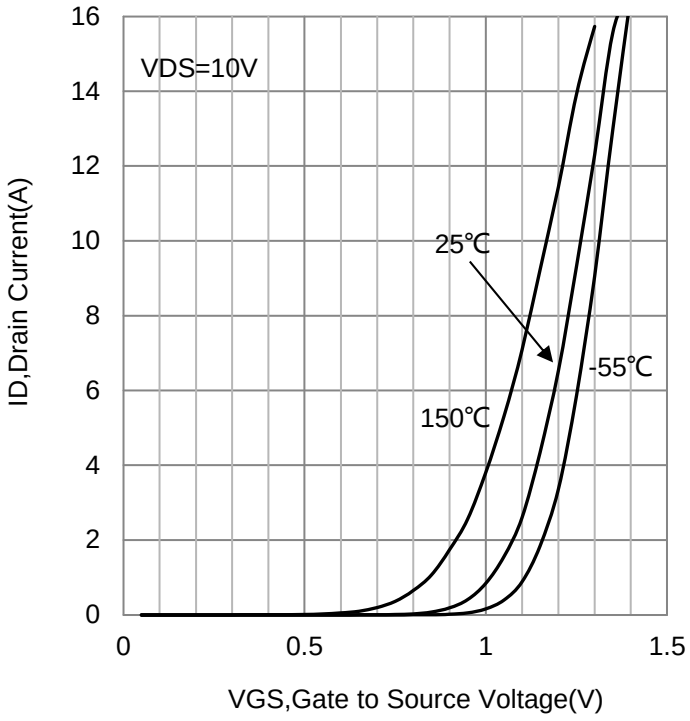


Figure 2.ID vs. VGS

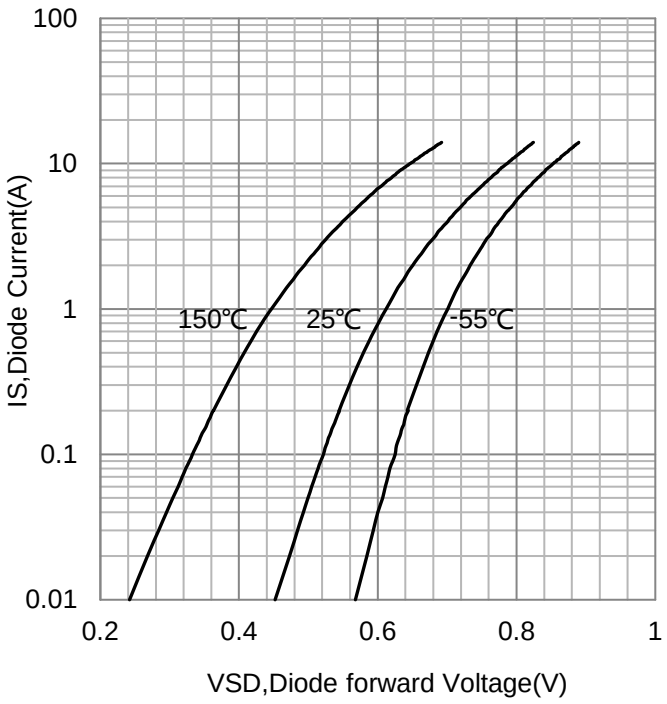


Figure 3.IS vs. VSD

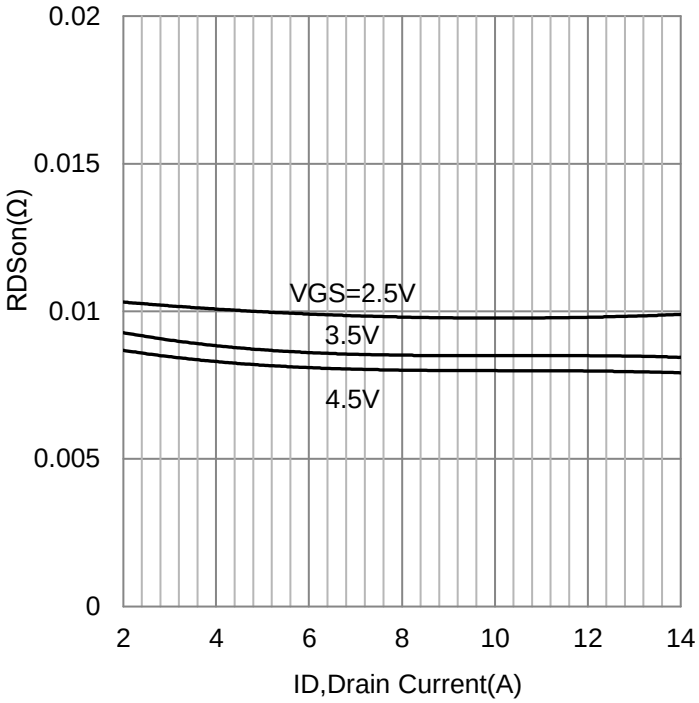


Figure 4.RDS(on) vs. ID

7. ELECTRICAL CHARACTERISTICS CURVES(Con.)

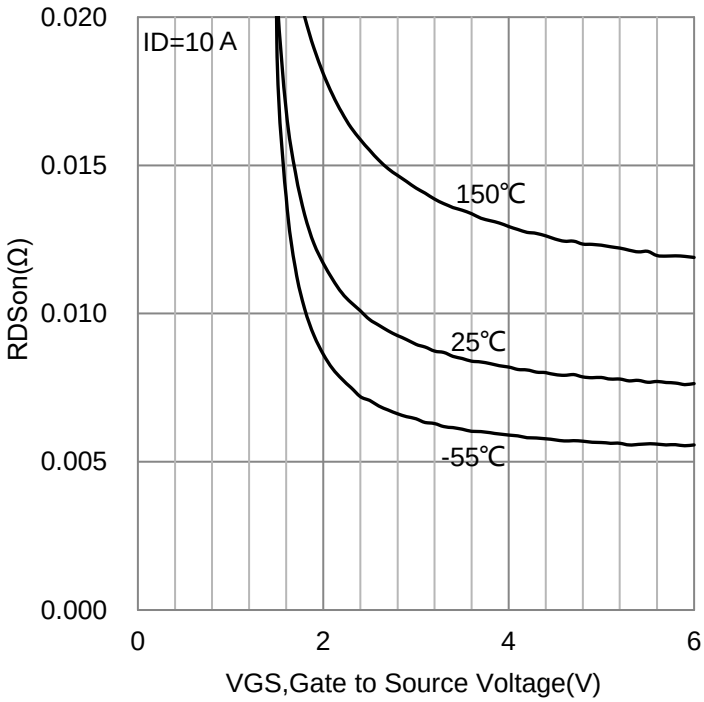


Figure 5.RDS(on) vs. VGS

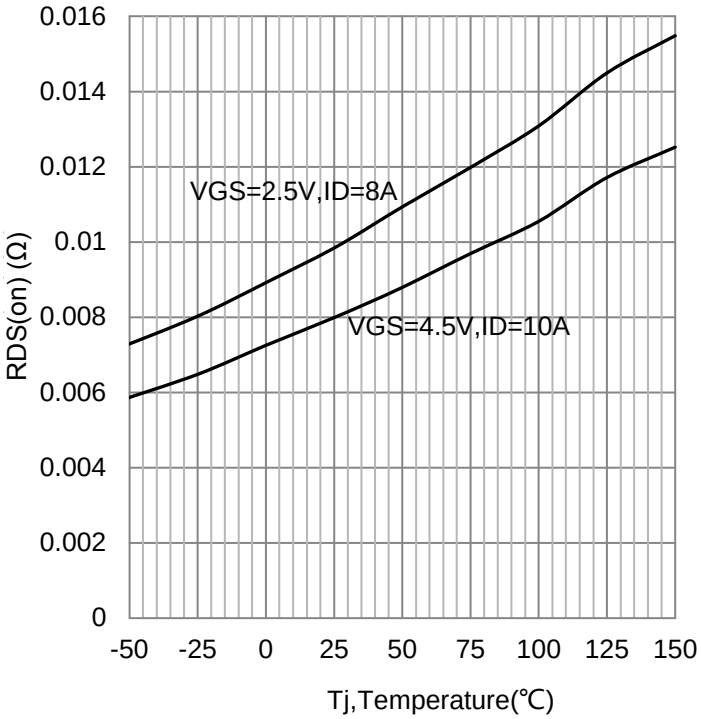


Figure 6.RDS(on) vs. Tj

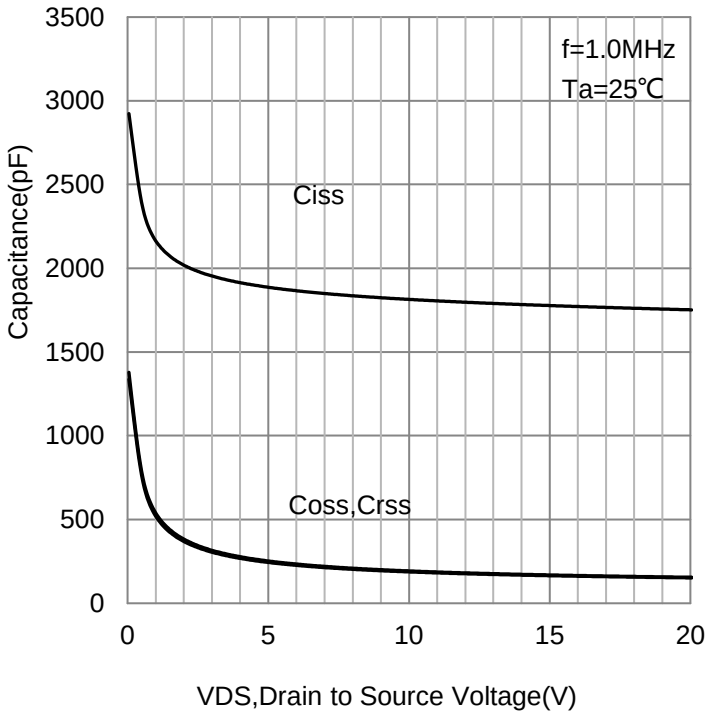


Figure 7.Capacitance

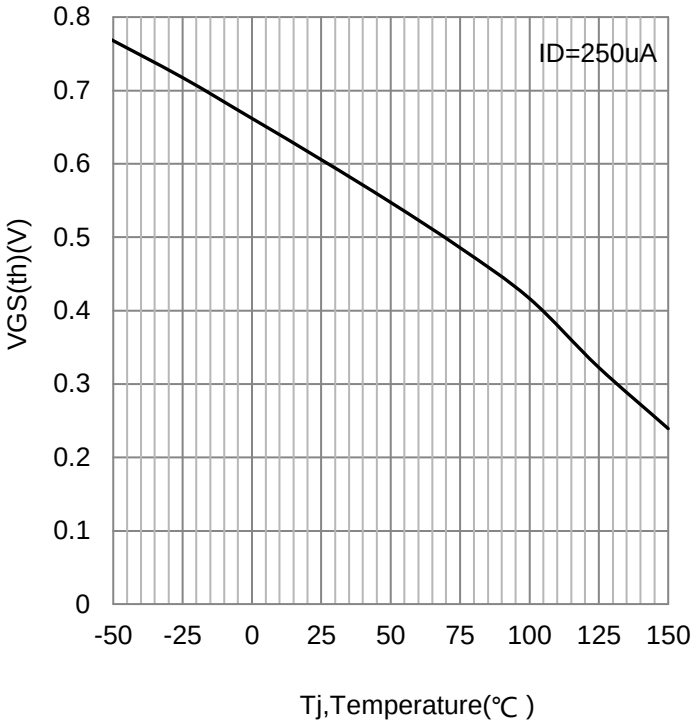
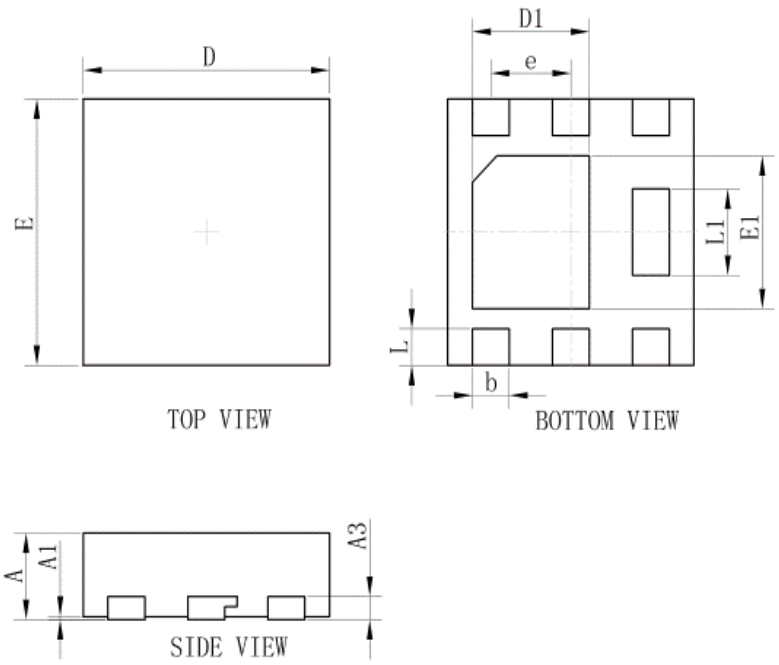


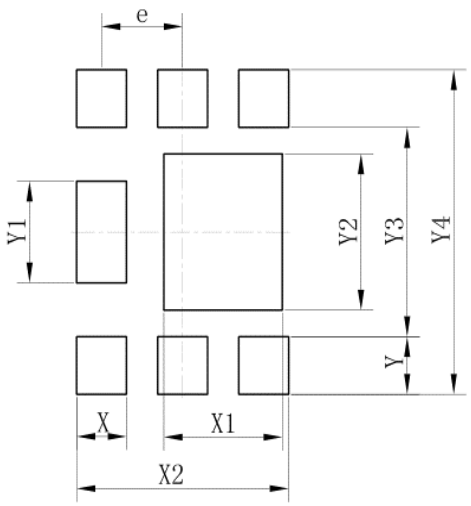
Figure 8.VGS(th) vs. Tj

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	0.70
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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