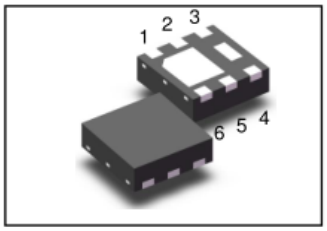
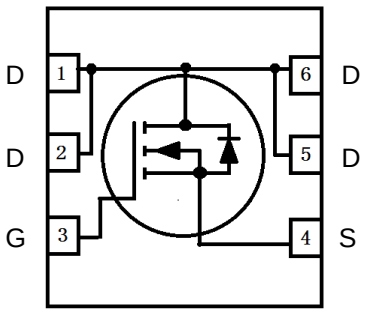
LN2604DT2AG

60V N-Channel Enhancement MOSFET





1. FEATURES

- VDS = 60 V
  RDS(ON)≤35mΩ,VGS@10V,IDS@5A
  RDS(ON)≤40mΩ,VGS@4.5V,IDS@4A
- 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.APPLICATIONS

- DC/DC Conversion
- Power Routing
- Motor Drives

3. ORDERING INFORMATION

Device	Marking	Shipping
LN2604DT2AG	04D	4000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25ºC unless otherwise stated)

Parameter		Symbol	Limits	Unit
Drain−to−Source Voltage		VDSS	60	V
Gate−to−Source Voltage		VGS	±20	V
Avalanche Current		IAS	10	A
Avalanche energy L=0.1mH		EAS	5	mJ
Continuous Drain Current(Note 1)	TA =25°C	ID	7	A
	TA =70°C		4	
Pulsed Drain Current (Note 2)		IDM	28	A
Power Dissipation(Note 1)	TA =25°C	PD	2	W
	TA =70°C		1.5	
Operating Junction and Storage Temperature Range		TJ , TSTG	−55 ~+150	ºC

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Unit
Junction−to−Ambient(Note 3)	RθJA	60	℃/W
Junction−to−Case	RθJC	20	℃/W

1.Surface mounted on "1.5 x 1.5" FR4 board using 1 sq in pad, 2 oz Cu.

2.Pulse width limited by maximum junction temperature.

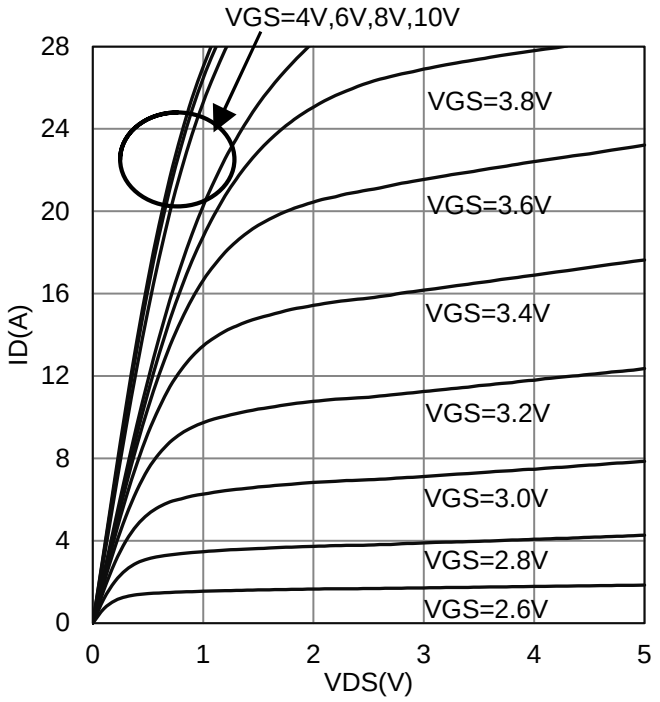
6. ELECTRICAL CHARACTERISTICS

Characteristic		Symbol	Min.	Typ.	Max.	Unit
Static						
Drain–Source Breakdown Voltage (VGS = 0, ID = 250μA)		V(BR)DSS	60	-	-	V
Gate-Source Threshold Voltage (VDS = VGS , ID = 250 μA)		VGS(th)	1	1.9	3	V
Gate-Body Leakage (VDS = 0 V, VGS = ±20 V)		IGSS	-	-	± 10	uA
Zero Gate Voltage Drain Current (VDS = 48 V, VGS = 0 V)		IDSS	-	-	1	μA
Drain-Source On-Resistance(Note 3) (VGS = 10 V, ID = 7 A) (VGS = 4.5 V, ID = 5 A)		RDS(on)	- -	23 32	35 40	mΩ
Diode Forward Voltage(Note 3) (IS = 1.9 A, VGS = 0 V)		VSD	-	0.78	1.5	V
Dynamic(Note 4)						
Total Gate Charge	(VDS = 15 V, VGS = 4.5 V, ID = 6 A)	Qg	-	9	-	nC
Gate-Source Charge		Qgs	-	3.2	-	
Gate-Drain Charge		Qgd	-	3	-	
Turn-On Delay Time	(VDS = 15 V, RL=1.4 Ω,ID =6 A,VGEN = 10 V, RGEN = 6 Ω)	td(on)	-	6	-	ns
Rise Time		tr	-	6	-	
Turn-Off Delay Time		td(off)	-	33	-	
Fall Time		tf	-	11	-	
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 1 Mhz)	Ciss	-	1280	-	pF
Output Capacitance		Coss	-	65	-	
Reverse Transfer Capacitance		Crss	-	53	-	
Gate Resistance (VDS=0V ,VGS=0V, f=1.0MHz)		Rg	-	0.74	-	Ω

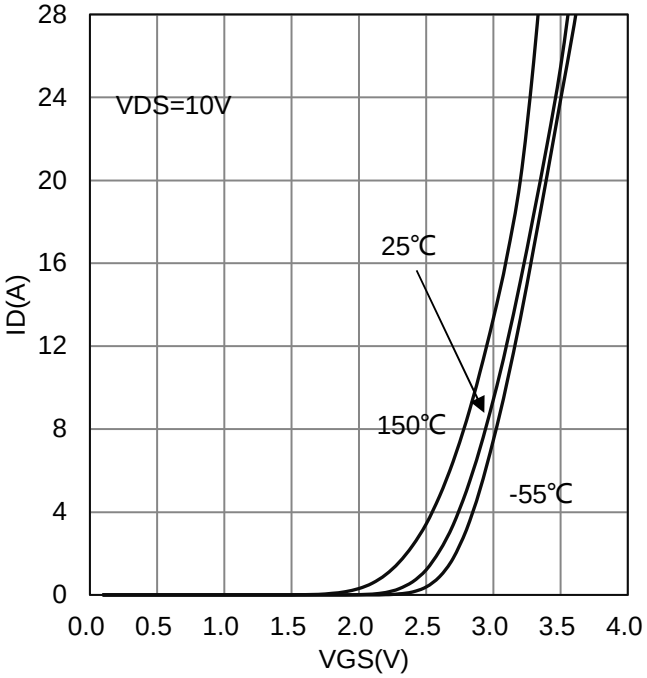
3.Pulse test: PW ≤ 300us duty cycle ≤ 2%.

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

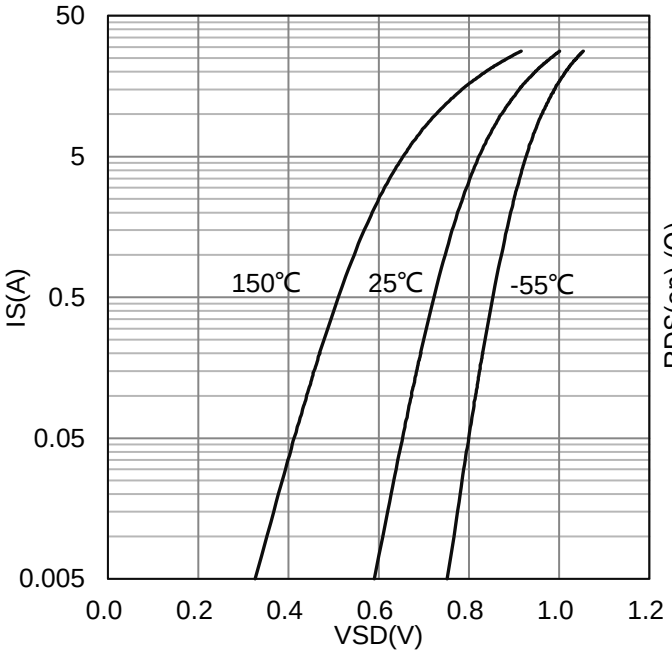
7.ELECTRICAL CHARACTERISTICS CURVES



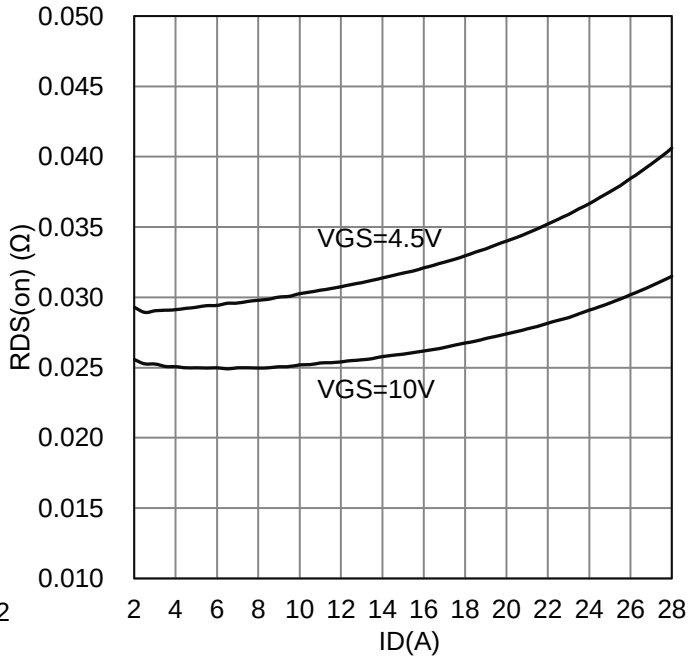
ID vs. VDS



ID vs. VGS

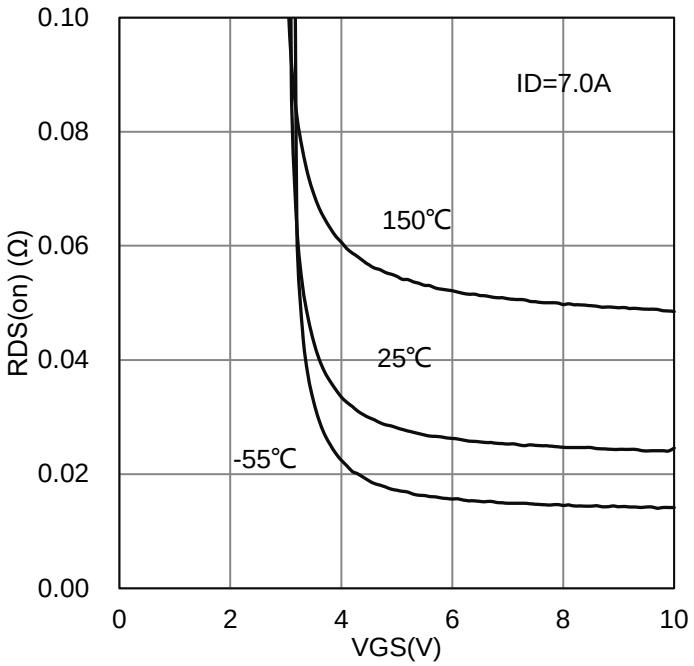


IS vs. VSD

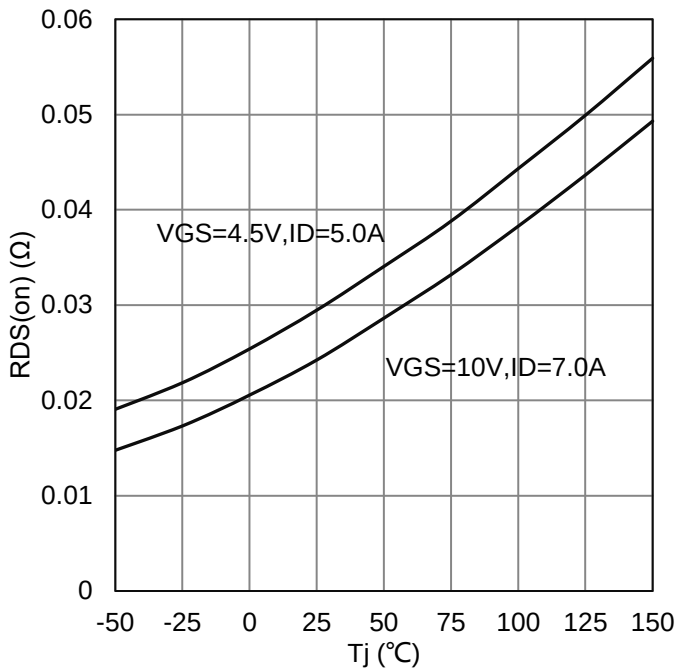


RDS(on) vs. ID

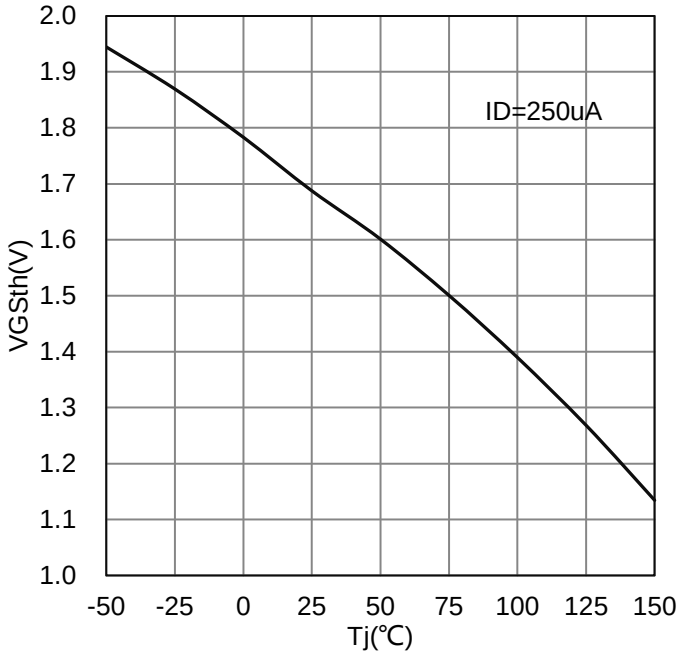
7.ELECTRICAL CHARACTERISTICS CURVES(Con.)



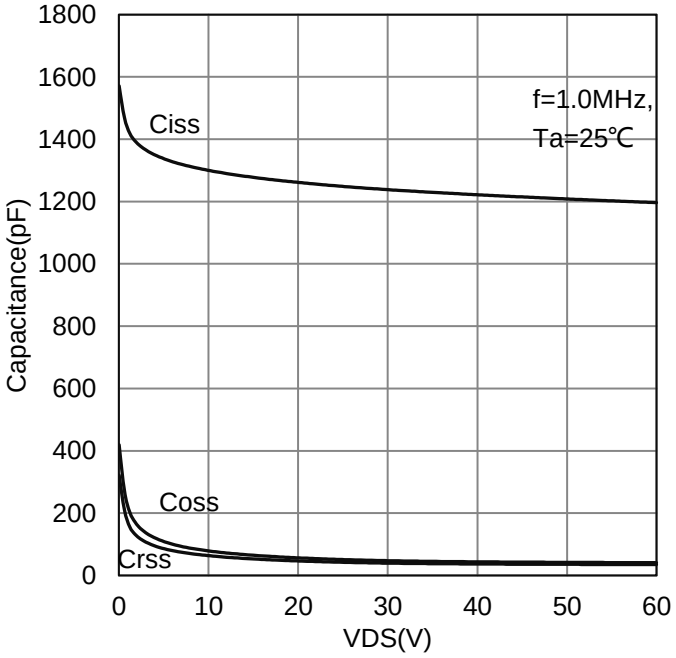
RDS(on) vs. VGS



RDS(on) vs. Tj

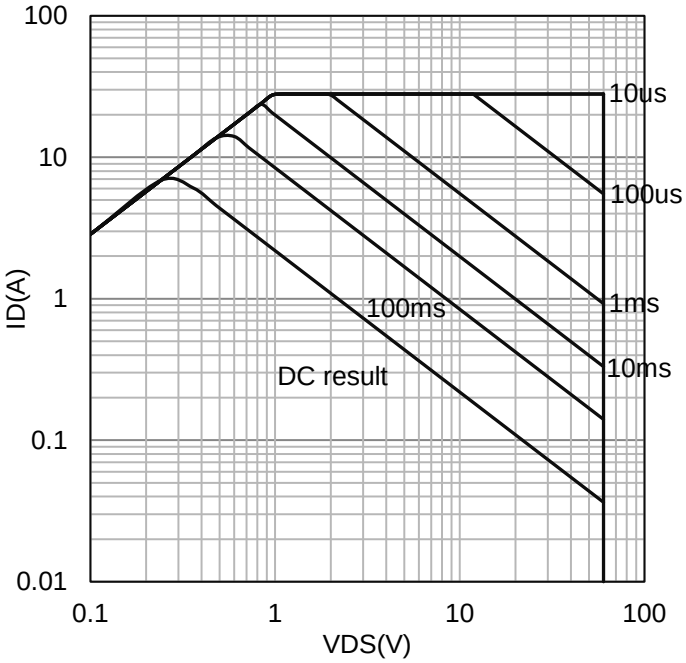


VGSth vs. Tj



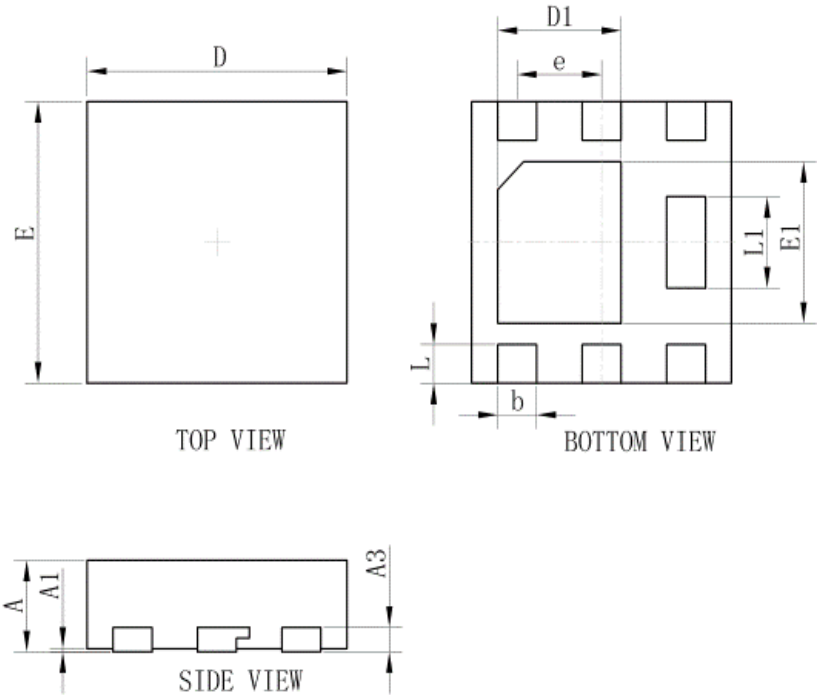
Capacitance

7.ELECTRICAL CHARACTERISTICS CURVES(Con.)



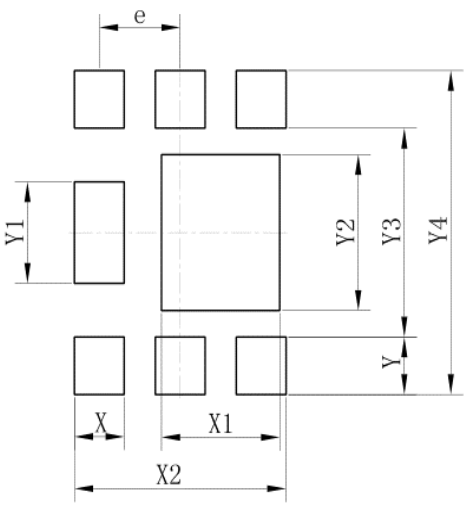
Safe Operating Area

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

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