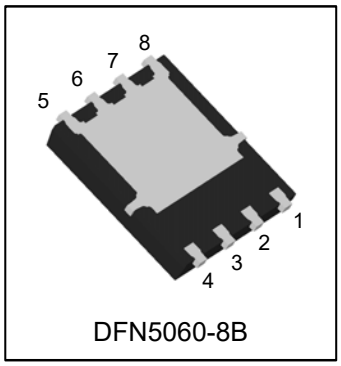
N7308AD

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



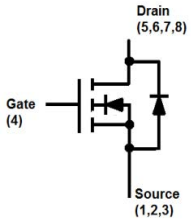
DFN5060-8B

1. FEATURES

- 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.

2. APPLICATIONS

- DC/DC Conversion
- Power Routing
- Motor Drives



3. DEVICE MARKING AND RESISTOR VALUES

Device	Marking	Shipping
N7308AD	LN7308A	3000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25ºC)

Parameter		Symbol	Limits	Unit
Drain-to-Source Voltage		VDS	30	V
Gate-to-Source Voltage		VGS	±20	V
Continuous Drain Current(Note 1)	TA=25℃	ID	16	A
	TA=70℃		12	A
Pulsed Drain Current(Note 2)		IDM	64	A
Power Dissipation(Note 1)	TA=25℃	PD	2	W
	TA=70℃		1.5	W
Operating Junction and Storage Temperature Range		Tj/Tstg	-55~+150	℃

5. THERMAL CHARACTERISTICS

Parameter		Symbol	Max	Unit
Thermal Resistance-Junction to Ambient	t ≤ 10s	RθJA	25	℃/W
	Steady-State		60	
Thermal Resistance-Junction to Case		RθJC	3	℃/W

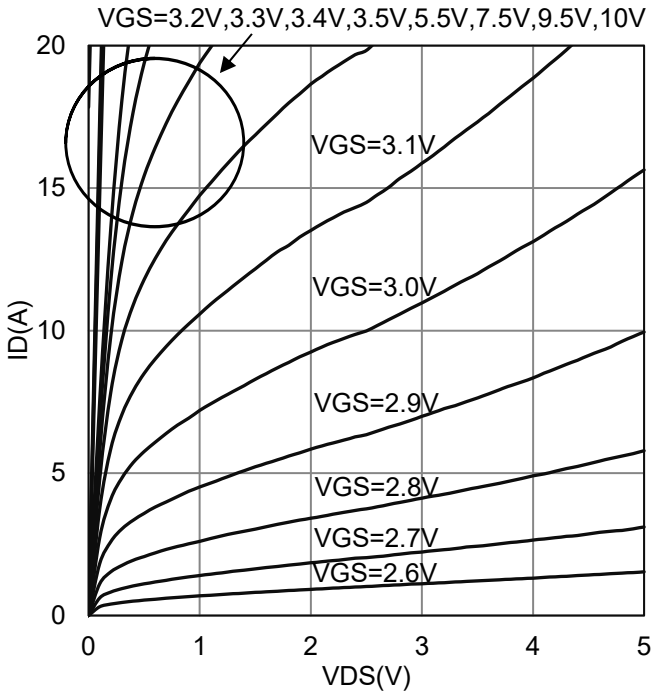
1.Surface mounted on "1.5 x 1.5" FR4 board using 1 sq in pad, 2 oz Cu.
2.Pulse width limited by maximum junction temperature

6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

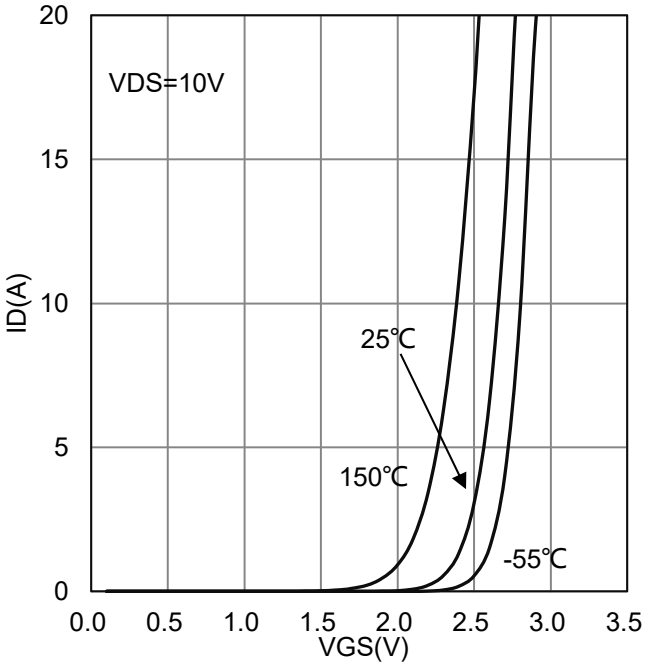
Characteristic		Symbol	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage (VGS = 0V, ID = 250μA)		V(BR)DSS	30	-	-	V
Gate-Source Threshold Voltage (VDS = VGS , ID = 250μA)		VGS(th)	1.4	1.8	2.2	V
Gate-Body leakage current (VDS =0V, VGS = ±20V)		IGSS	-	-	±100	nA
Zero Gate Voltage Drain Current (VDS =30V, VGS =0V)		IDSS	-	-	1	μA
Drain-to-Source On-Resistance(Note 3) (VGS =10V, ID =20A) (VGS =4.5V, ID =20A)		RDS(ON)	- -	4.1 7	5.5 8.5	mΩ
Diode Forward Voltage (IS = 1 A, VGS = 0 V)		VSD	-	0.7	1	V
Dynamic						
Total Gate Charge	(VDS = 15 V, VGS = 10 V,ID = 20 A)	Qg(10V)	-	16.6	-	nC
Total Gate Charge		Qg(4.5V)	-	8.3	-	
Gate to Source Charge		Qgs	-	2.7	-	
Gate to Drain Charge		Qgd	-	3.7	-	
Turn-on Delay Time	(VDS=15 V, ID=20A ,VGEN=10 V, RGEN= 3Ω)	td(on)	-	8.9	-	nS
Rise Time		tr	-	8.8	-	
Turn-Off Delay Time		td(off)	-	26.4	-	
Fall Time		tf	-	6.8	-	
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 1 MHz)	Ciss	-	1605	-	pF
Output Capacitance		Coss	-	397	-	
Reverse Transfer Capacitance		Crss	-	50	-	
Gate Resistance (VDS=0V ,VGS=0V, f=1.0MHz)		Rg	-	1.15	-	Ω

3.Pulse test: PW≤300μs duty cycle≤2%.

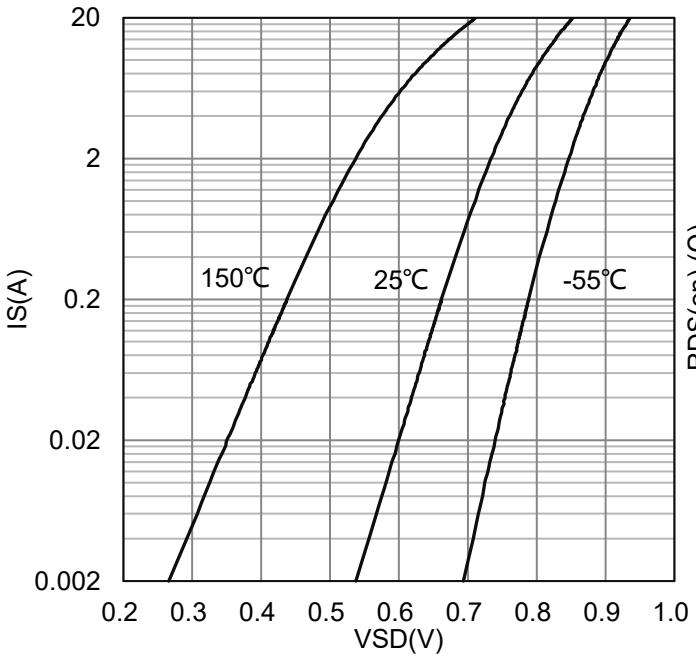
7. ELECTRICAL CHARACTERISTICS CURVES



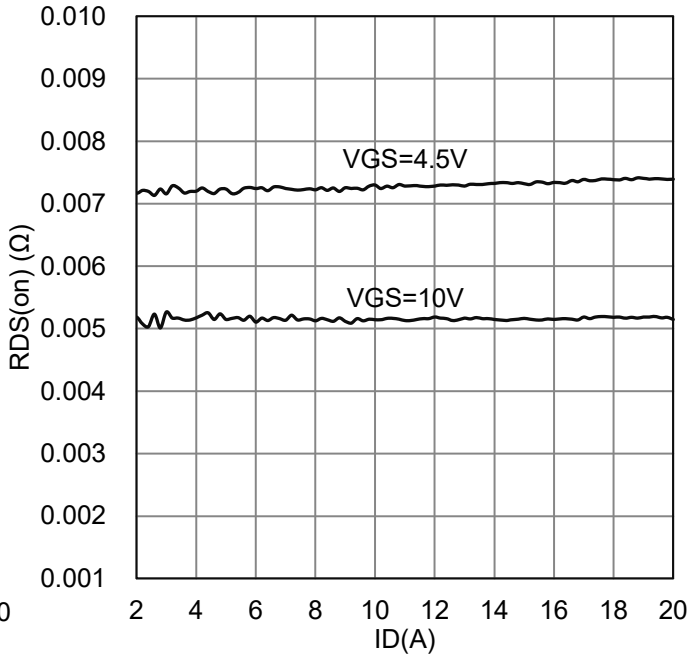
ID vs. VDS



ID vs. VGS

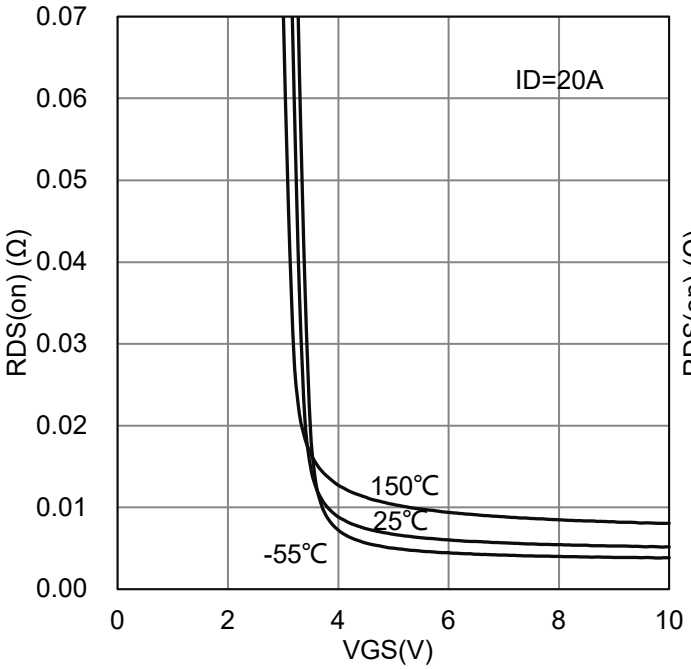


IS vs. VSD

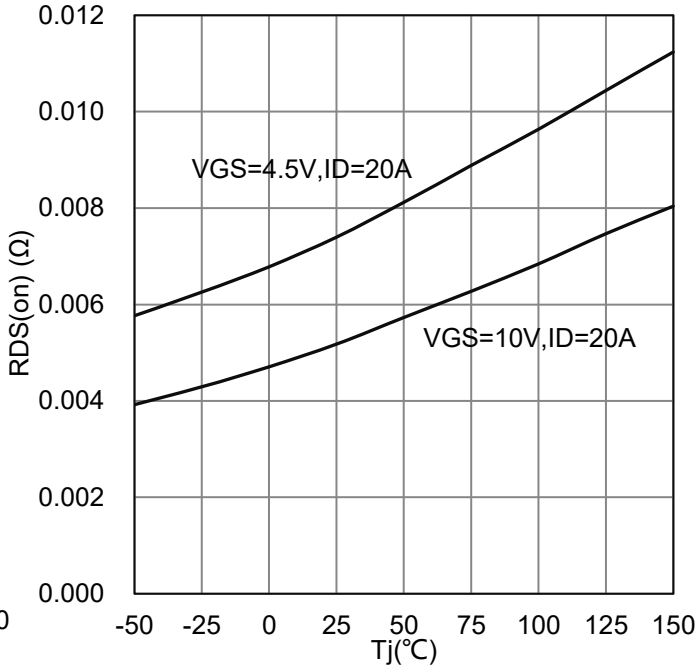


RDS(on) vs. ID

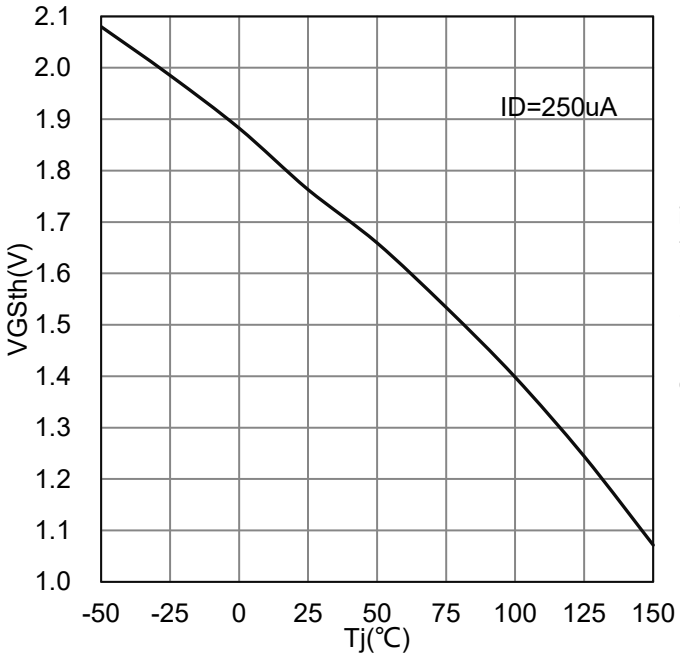
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



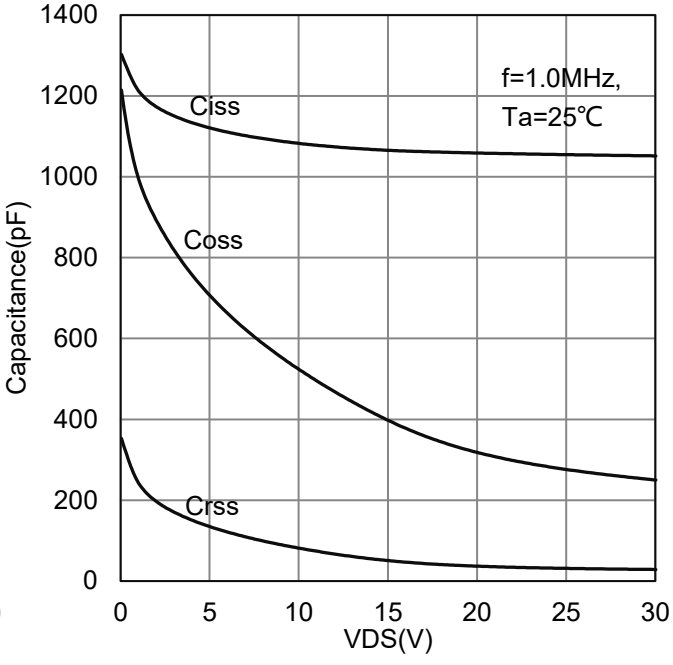
RDS(on) vs. VGS



RDS(on) vs. Tj

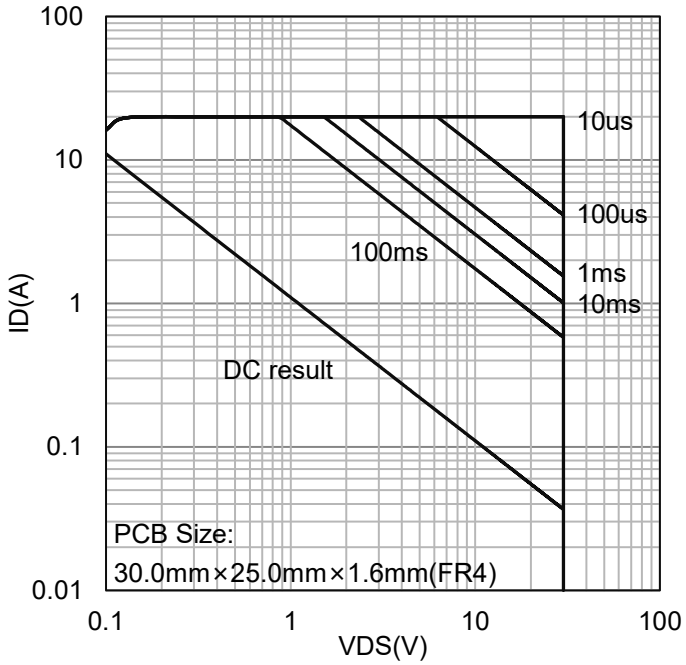


VGSth vs. Tj



Capacitance

7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



Safe Operating Area

8.OUTLINE AND DIMENSIONS

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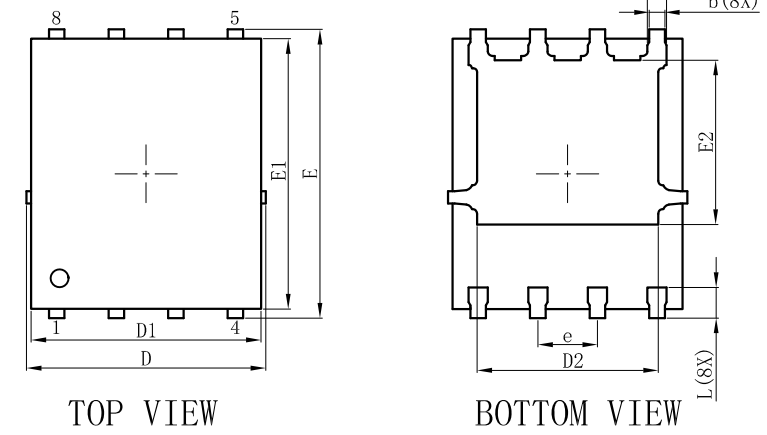
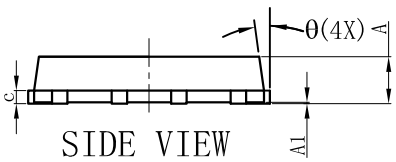


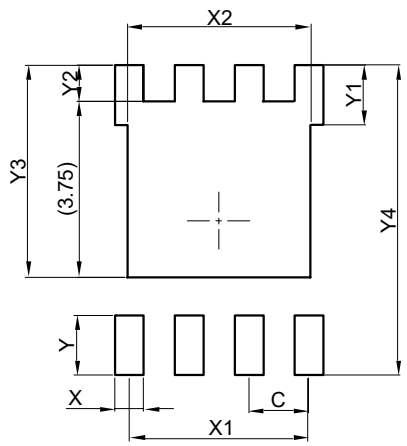
DFN5060-8B			
DIM	MIN	NOR	MAX
A	0.90	1.00	1.10
A1	0.00	0.02	0.05
E	6.00	6.15	6.30
E1	5.66	5.76	5.86
E2	3.40	3.50	3.60
D	4.95	5.10	5.25
D1	4.80	4.90	5.00
D2	3.76	3.86	3.96
b	0.30	0.35	0.40
B	0.36	0.41	0.46
L	0.56	0.66	0.76
e	1.27BSC		
c	0.254REF.		
θ	0 °	-	12°
All Dimensions in mm			



GENERAL NOTES

1. Top package surface finish Ra0.4±0.2um
2. Bottom package surface finish Ra0.7±0.2um
3. Side package surface finish Ra0.4±0.2um
4. Protrusion or Gate Burrs shall not exceed 0.05mm per side.
5. Offcenter Max0.038mm; Mismatch Max 0.038mm.

9.SOLDERING FOOTPRINT



DFN5060-8B	
DIM	(mm)
C	1.27
X	0.61
X1	3.81
X2	3.91
Y	1.27
Y1	1.27
Y2	0.77
Y3	4.52
Y4	6.61