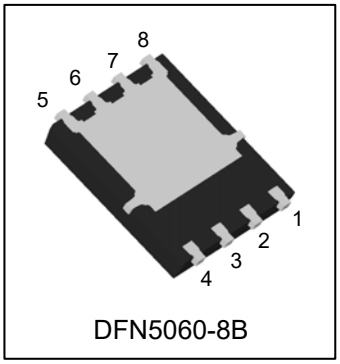
N7508D

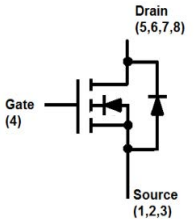
60V N-Channel MOSFET



DFN5060-8B

1. FEATURES

- Improved dv/dt capability
- Fast switching
- We declare that the material of product compliance with RoHS requirements and Halogen Free.



2. APPLICATIONS

- Motor Drive
- Power Tools
- LED Lighting
- Quick Charger

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
N7508D	LN7508	3000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25ºC)

Parameter	Symbol	Limits	Unit
Drain–Source Voltage	VDSS	60	V
Gate–to–Source Voltage – Continuous	VGS	±20	V
Drain Current – Continuous TC =25℃ – Continuous TC =100℃	ID	 60 38	A
Pulsed Drain Current	IDM	240	
Avalanched Current (L=0.1mH)	IAS	20	A
Avalanche Energy (L=0.1mH)	EAS	20	mJ
Power Dissipation TC =25℃	PD	67	W
Operating Junction and Storage Temperature Range	Tj/Tstg	-50 to 150	℃

5. THERMAL CHARACTERISTICS

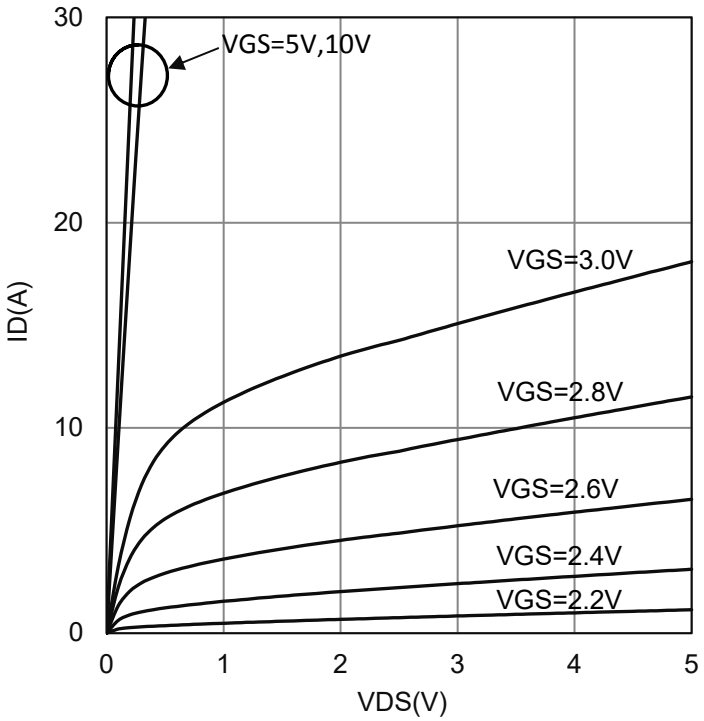
Parameter	Symbol	Limits	Unit
Thermal Resistance,Junction–to–Ambient(Note 1)	RθJA	62	ºC/W
Thermal Resistance,Junction–to–Case	RθJC	1.86	

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

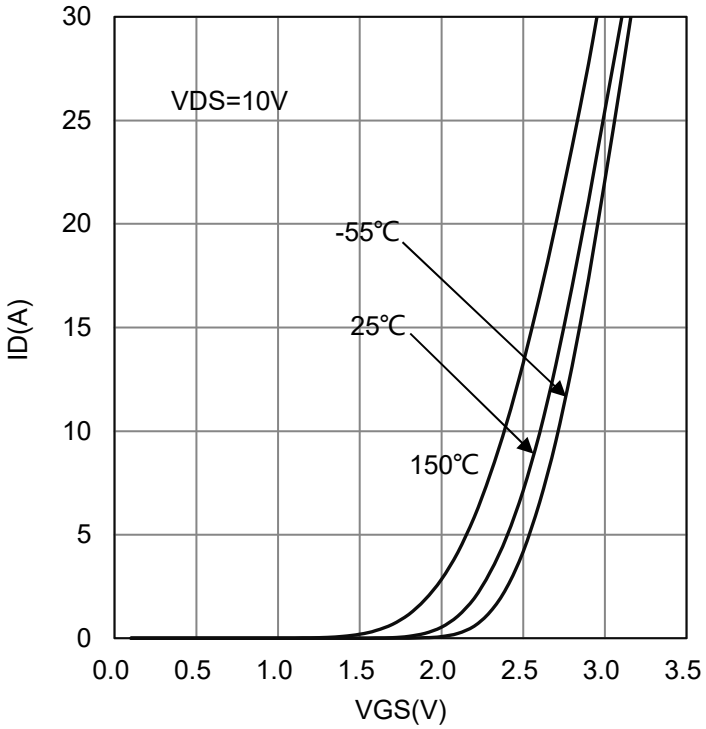
6. ELECTRICAL CHARACTERISTICS (Ta= 25ºC)

Characteristic		Symbol	Min.	Typ.	Max.	Unit
Static						
Drain–Source Breakdown Voltage (VGS = 0, ID = 250μA)		V(BR)DSS	60	-	-	V
Drain-Source Leakage Current (VDS =60V, VGS =0V, TJ =25℃)		IDSS	-	-	1	μA
Gate–Body Leakage Current (VGS =±20V , VDS =0V)		IGSS	-	-	±100	nA
Gate Threshold Voltage (VDS = VGS, ID = 250μA)		VGS(th)	1.2	1.6	2.5	V
Static Drain–Source On–State Resistance (VGS =10V, ID =15A) (VGS =4.5V, ID =12A)		RDS(on)	- -	- -	9.5 14	mΩ
Forward Voltage (VGS =0V,IS =1A,TJ =25℃)		VSD	-	-	1	V
Dynamic						
Input Capacitance (VGS = 0 V, f = 1.0MHz,VDS= 30 V)		Ciss	-	836	-	pF
Output Capacitance (VGS = 0 V, f = 1.0MHz,VDS= 30 V)		Coss	-	343	-	
Reverse Transfer Capacitance (VGS = 0 V, f = 1.0MHz,VDS= 30 V)		Crss	-	26	-	
Total Gate Charge	(VDS =30V , VGS =10V , ID =15A)	Qg	-	19	-	nC
Gate-Source Charge		Qgs	-	2	-	
Gate-Drain Charge		Qgd	-	6.7	-	
Turn-On Delay Time	(VDD =30V, VGS =10V, RG =3.3Ω,ID =1A)	td(on)	-	10	-	ns
Rise Time		tr	-	13.5	-	
Turn-Off Delay Time		td(off)	-	28	-	
Fall Time		tf	-	20	-	
Gate Resistance (VGS = 0V, VDS = 0V, f = 1MHz)		Rg	-	1	3	Ω

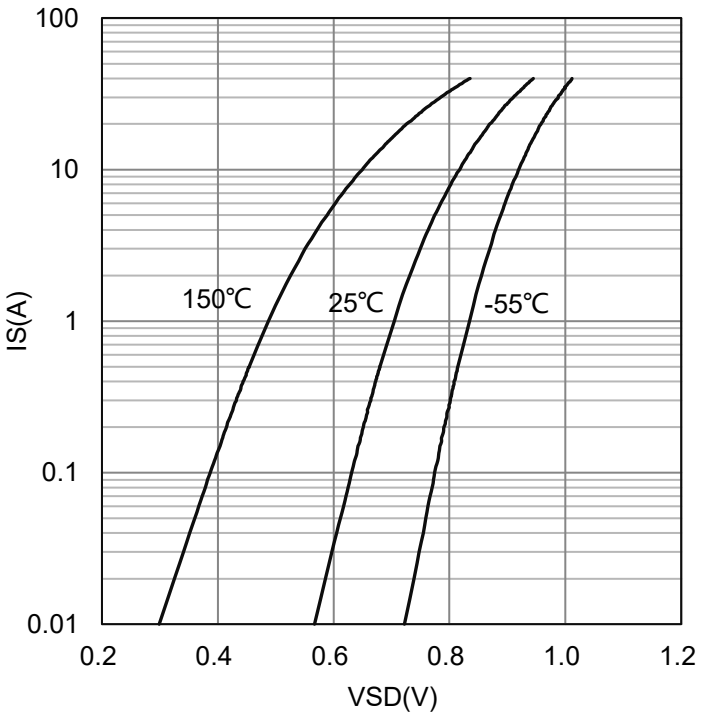
7. ELECTRICAL CHARACTERISTICS CURVES



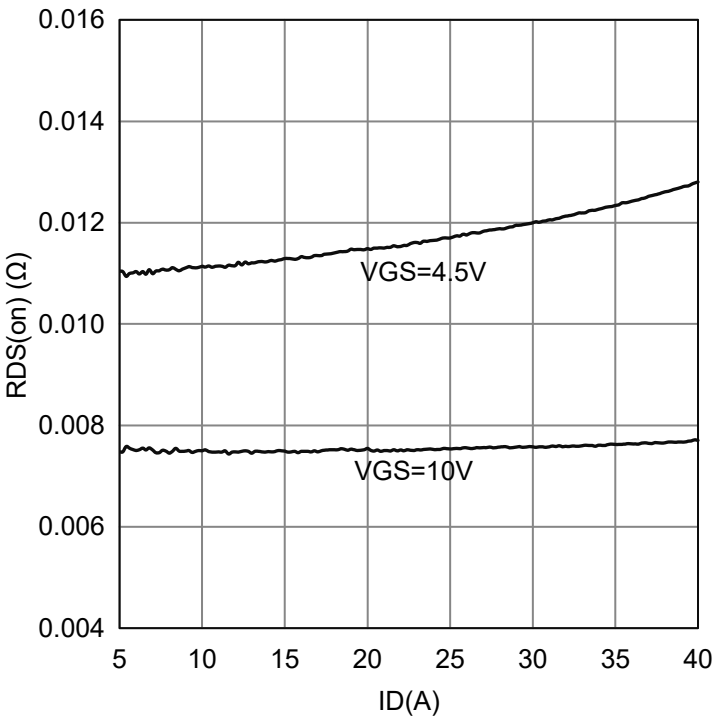
ID vs. VDS



ID vs. VGS

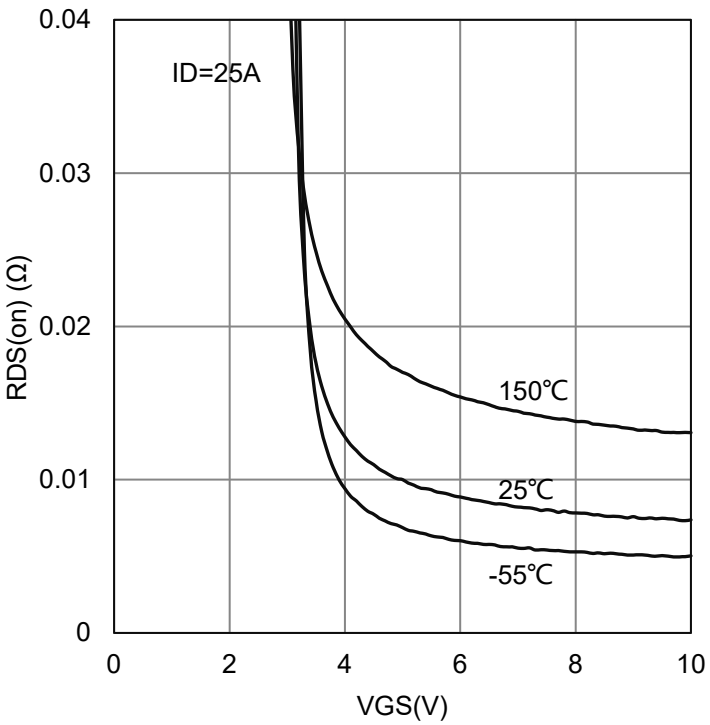


IS vs. VSD

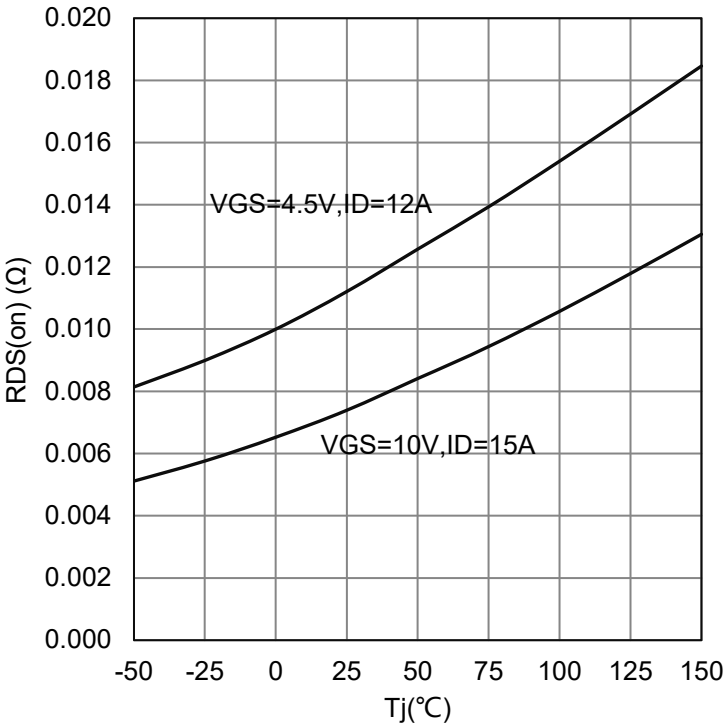


RDS(on) vs. ID

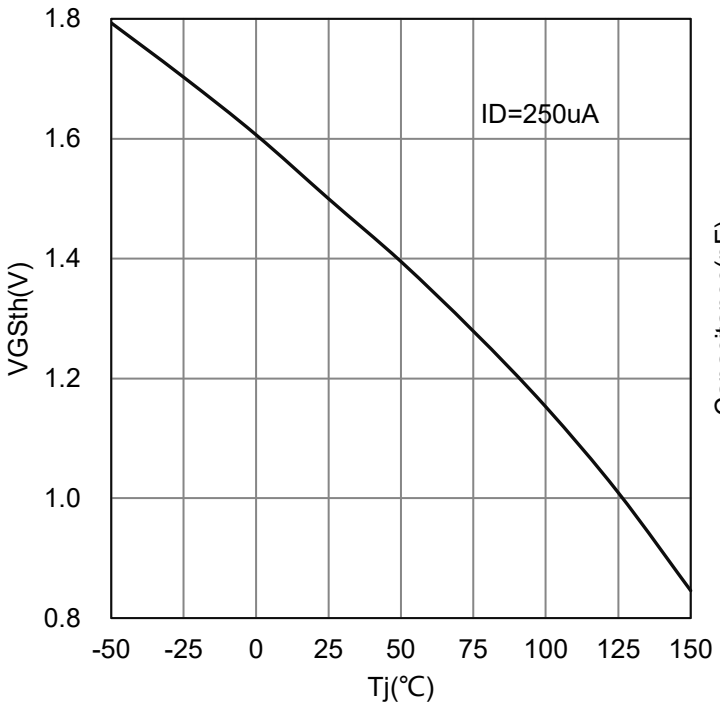
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



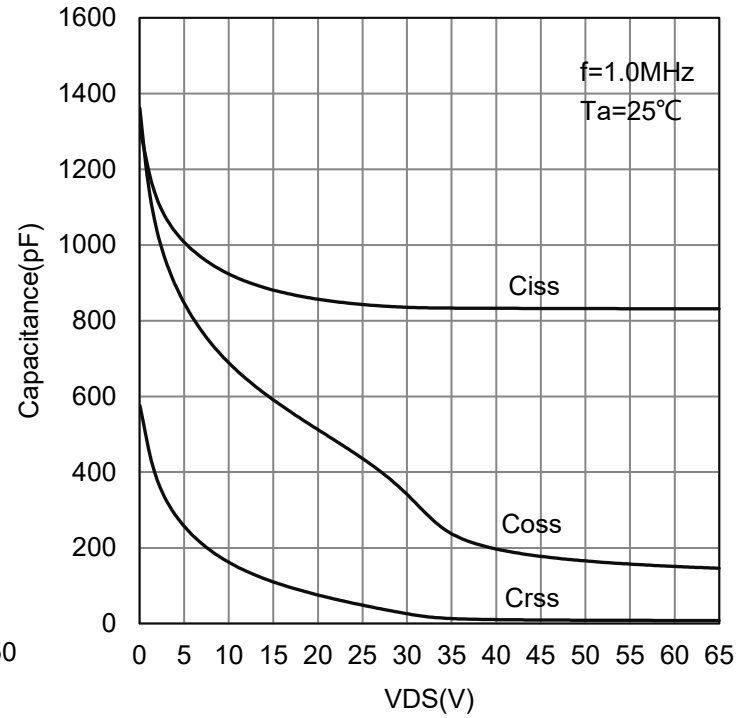
RDS(on) vs. VGS



RDS(on) vs. Tj



VGSth vs. Tj



Capacitance

8.OUTLINE AND DIMENSIONS

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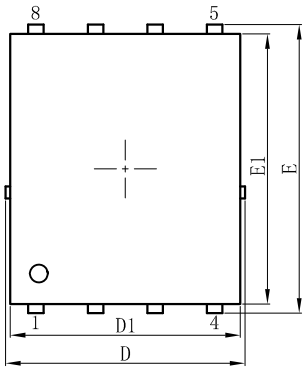
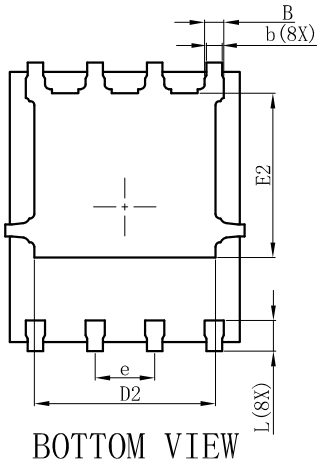
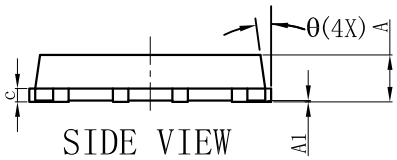


TOP VIEW



BOTTOM VIEW

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			

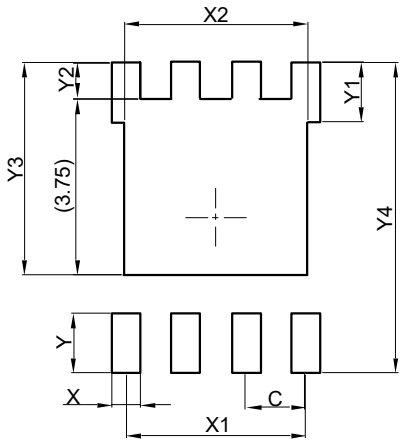


SIDE VIEW

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