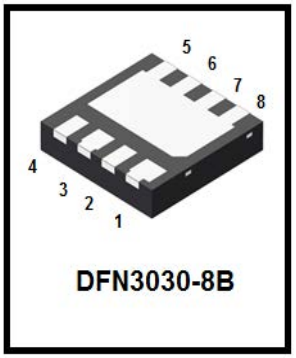
N8340D

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

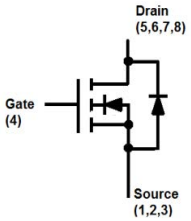


1. FEATURES

- 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
N8340D	N40	3000/Tape&Reel

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

Parameter		Symbol	Limits	Unit
Drain−to−Source Voltage		VDSS	30	V
Gate−to−Source Voltage		VGS	±20	V
Continuous Drain Current(Note 1)	TA =25°C	ID	17	A
	TA =70°C		12.2	
Pulsed Drain Current (Note 2)		IDM	60	
Continuous Source Current (Diode Conduction)(Note 1)		IS	4.6	A
Power Dissipation(Note 1)	TA =25°C	PD	3.5	W
	TA =70°C		2	
Operating Junction Temperature		TJ	−55 ~+150	℃
Storage Temperature Range		Tstg	−55 ~+150	

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.

5. THERMAL CHARACTERISTICS

Parameter		Symbol	Limits	Unit
Maximum Junction-to-Ambient(Note 1)	t≤10s	RθJA	35	℃/W
	Steady State		81	
Maximum Junction-to-Case		RθJC	6	℃/W

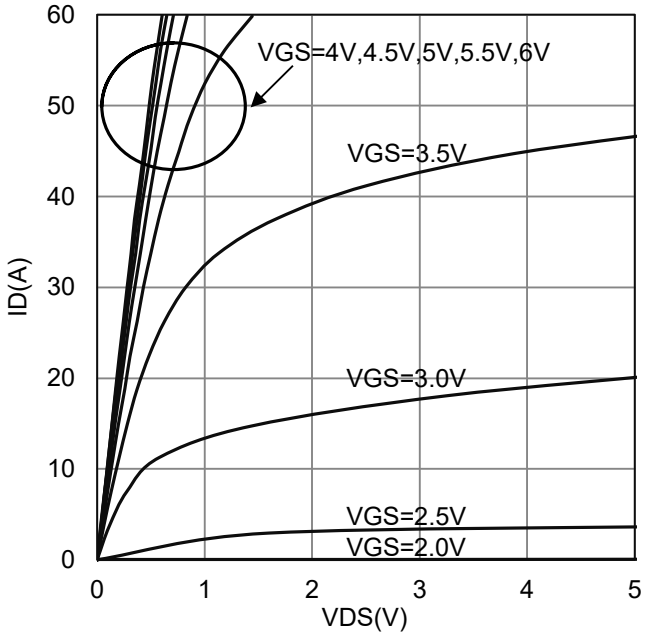
6. ELECTRICAL CHARACTERISTICS

Characteristic		Symbol	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage (VGS = 0 V , ID = 10 mA)		V(BR)DSS	30	-	-	V
Gate-Source Threshold Voltage (VDS = VGS , ID = 250 uA)		VGS(th)	1	-	2.5	V
Gate-Body Leakage (VDS = 0 V, VGS = ±20 V)		IGSS	-	-	±10	μA
Zero Gate Voltage Drain Current (VDS = 24 V, VGS = 0 V) (VDS = 24 V, VGS = 0 V, TJ = 55°C)		IDSS	- -	- -	1 25	μA
Drain-Source On-Resistance(Note 3) (VGS = 10 V, ID = 12.8 A) (VGS = 4.5 V, ID = 10.3 A)		RDS(on)	- -	7.5 11.5	9.5 16	mΩ
Diode Forward Voltage(Note 3) (IS = 2.3 A, VGS = 0 V)		VSD	-	0.7	1.2	V
Dynamic(Note 4)						
Total Gate Charge	(VDS = 15 V, VGS = 4.5 V,ID = 12.8 A)	Qg	-	11.5	-	nC
Gate-Source Charge		Qgs	-	4.3	-	
Gate-Drain Charge		Qgd	-	4	-	
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 1 Mhz)	Ciss	-	1178	-	pF
Output Capacitance		Coss	-	132	-	
Reverse Transfer Capacitance		Crss	-	121	-	
Turn-On Delay Time	(VDS = 15 V, RL = 1.2 Ω,ID = 12.8 A,VGEN = 10 V, RGEN = 6 Ω)	td(on)	-	8.5	-	ns
Rise Time		tr	-	12	-	
Turn-Off Delay Time		td(off)	-	38	-	
Fall Time		tf	-	12	-	

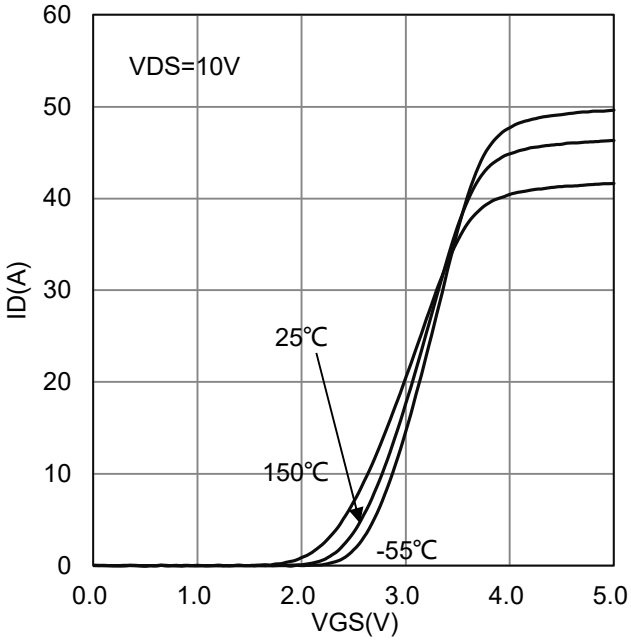
3.Pulse test: PW≤ 300μs duty cycle ≤ 2%.

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

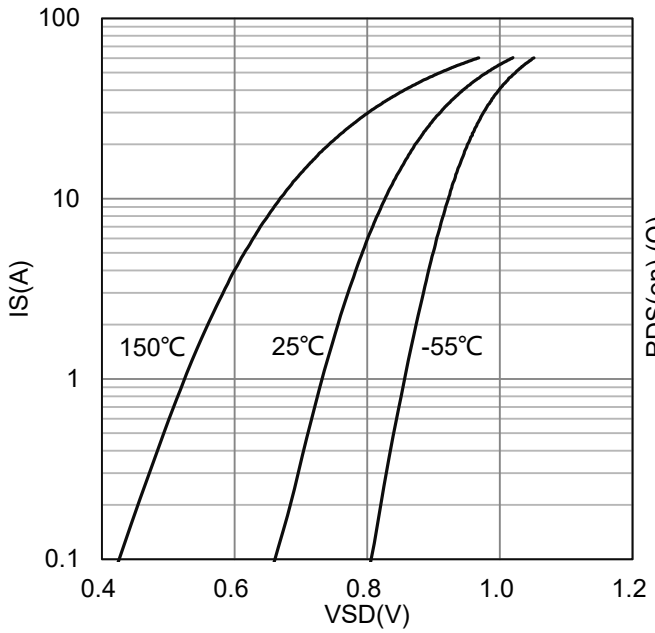
7. ELECTRICAL CHARACTERISTICS CURVES



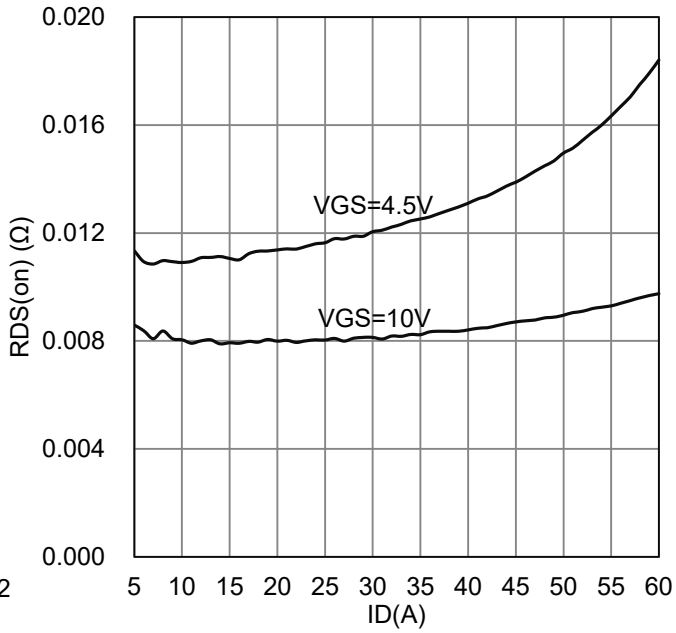
ID vs. VDS



ID vs. VGS

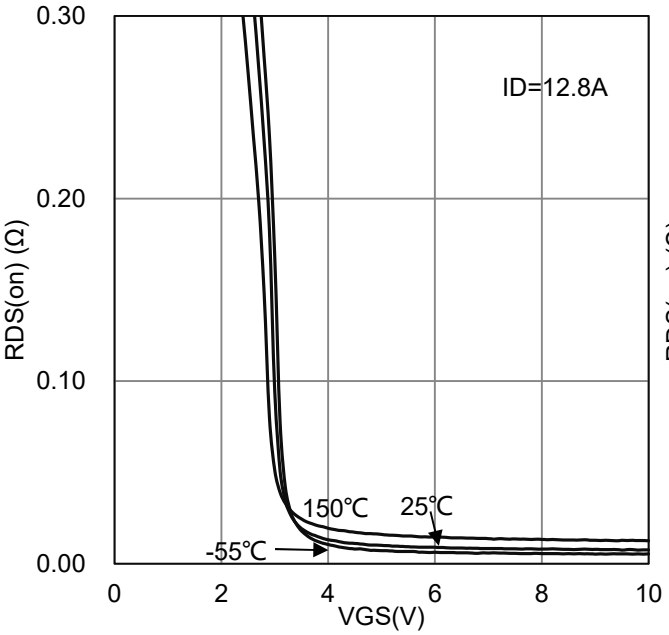


IS vs. VSD

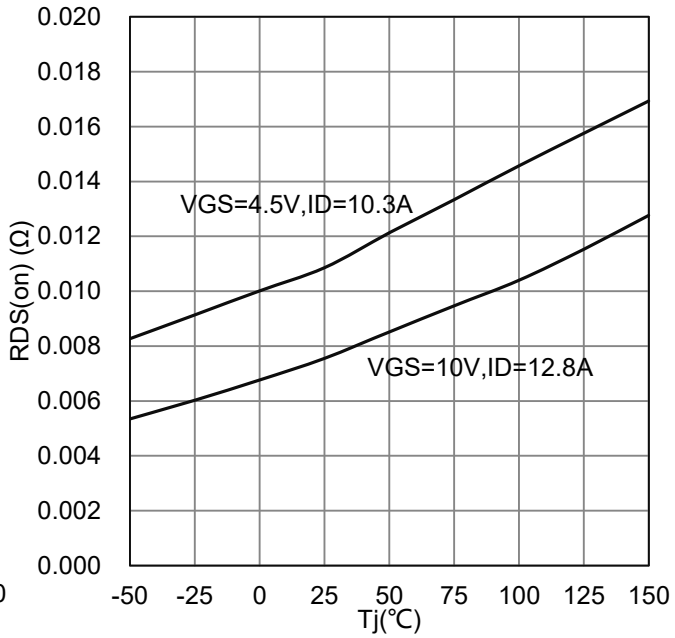


RDS(on) vs. ID

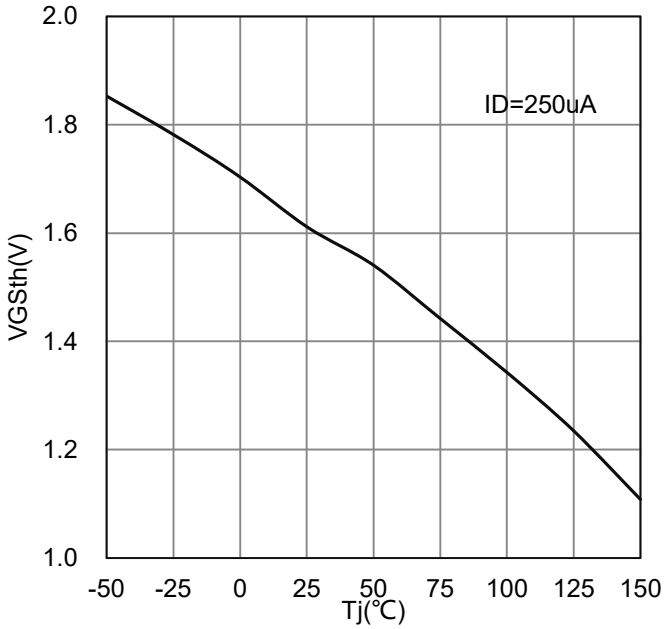
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



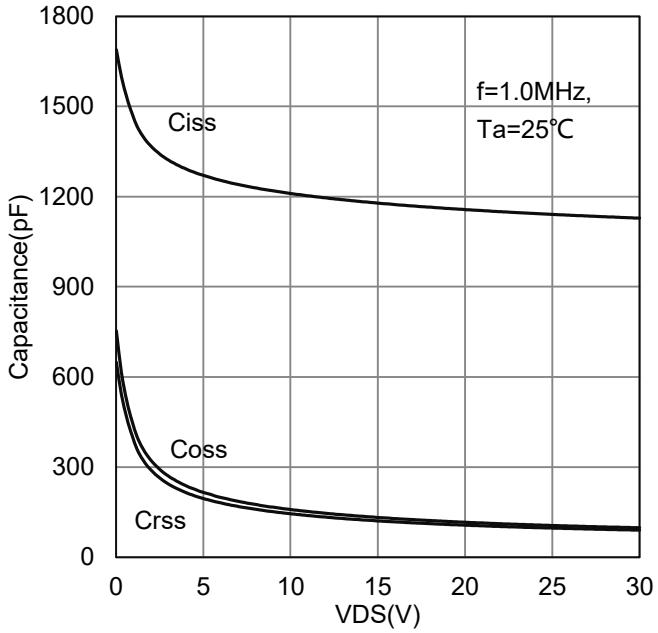
RDS(on) vs. VGS



RDS(on) vs. Tj

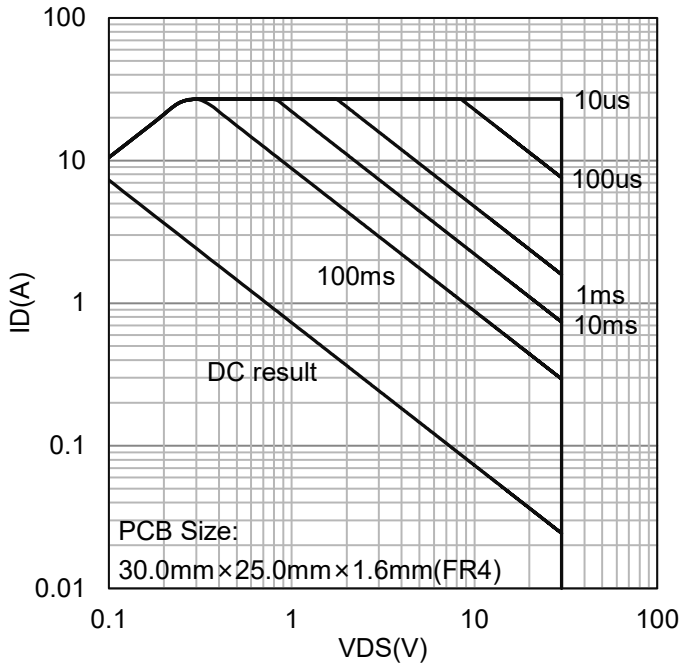


VGSth vs. Tj

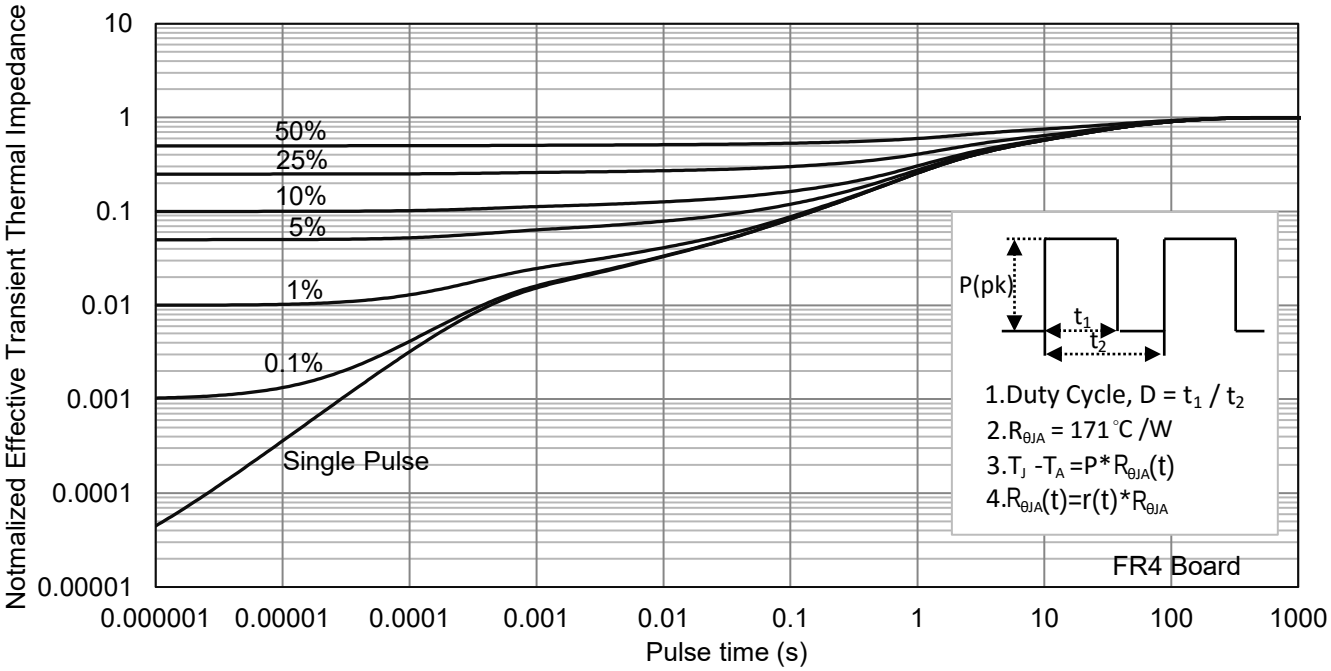


Capacitance

7. ELECTRICAL CHARACTERISTICS CURVES(Con.)

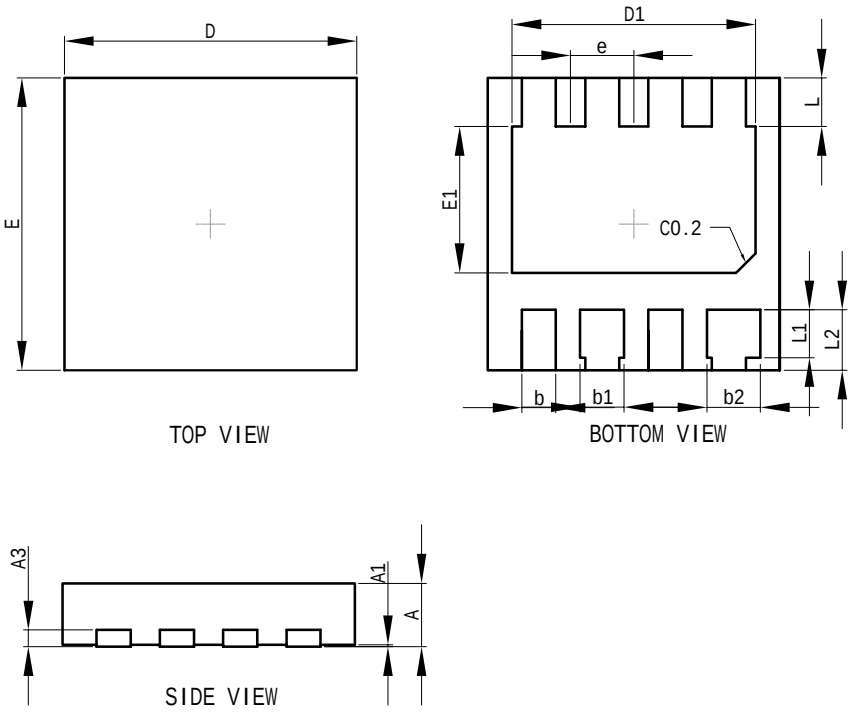


Safe Operating Area



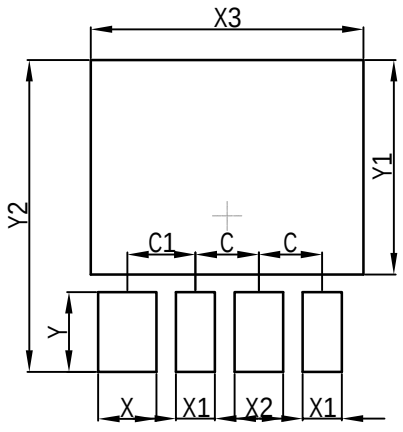
Thermal Response

8.OUTLINE AND DIMENSIONS



DFN3030-8B			
Dim	Min	Nor	Max
A	0.60	0.65	0.70
A1	0.00	0.03	0.05
b	0.30	0.35	0.40
b1	0.40	0.45	0.50
b2	0.50	0.55	0.60
D	2.95	3.00	3.05
E	2.95	3.00	3.05
D1	2.45	2.50	2.55
E1	1.45	1.50	1.55
e	0.65BSC		
L	0.45	0.50	0.55
L1	0.44	0.49	0.54
L2	0.57	0.62	0.67
A3	0.152REF.		
All Dimensions in mm			

9.SOLDERING FOOTPRINT



DFN3030-8B	
Dim	(mm)
C	0.65
C1	0.70
X	0.60
X1	0.40
X2	0.50
X3	2.80
Y1	2.20
Y2	3.20
Y	0.82