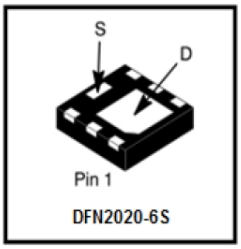
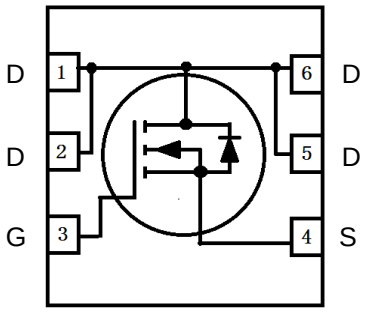
LN3424DT2AG

30V N-Channel Enhancement MOSFET





1. FEATURES

- VDS = 30 V
  RDS(ON)≤10.5mΩ, VGS@10V, IDS@6A
  RDS(ON)≤16.5mΩ, VGS@4.5V, IDS@5A
- 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
LN3424DT2AG	2B	4000/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	12	A
	TA =70°C		7	
Pulsed Drain Current (Note 2)		IDM	40	A
Continuous Source Current (Diode Conduction)(Note 1)		IS	3.8	A
Power Dissipation(Note 1)	TA =25°C	PD	2.4	W
	TA =70°C		1.4	
Operating Junction and Storage Temperature Range		TJ , TSTG	−55 ~+150	ºC

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	

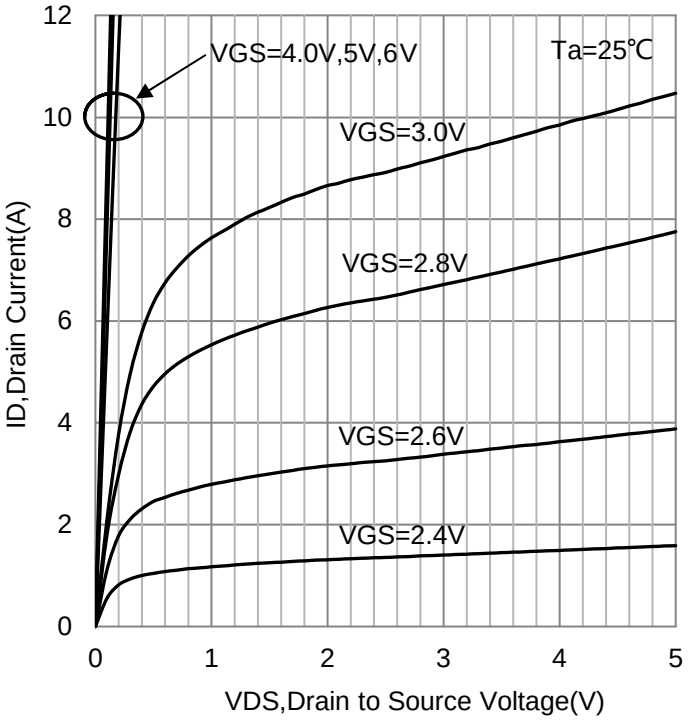
6. ELECTRICAL CHARACTERISTICS

Characteristic		Symbol	Min.	Typ.	Max.	Unit
Static						
Drain–Source Breakdown Voltage (VGS = 0V , ID = 250 uA)		V(BR)DSS	30	-	-	V
Gate-Source Threshold Voltage (VDS = VGS , ID = 250 uA)		VGS(th)	1	1.55	1.8	V
Gate-Body Leakage (VDS = 0 V, VGS = ±20 V)		IGSS	-	-	±100	nA
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 = 6 A) (VGS = 4.5 V, ID = 5 A)		RDS(on)	- -	8 12	10.5 16.5	mΩ
Diode Forward Voltage(Note 3) (IS = 1.9 A, VGS = 0 V)		VSD	-	0.9	1.5	V
Dynamic(Note 4)						
Total Gate Charge	(VDS = 15 V, VGS = 4.5 V, ID = 6 A)	Qg	-	11	-	nC
Gate-Source Charge		Qgs	-	3.2	-	
Gate-Drain Charge		Qgd	-	4.3	-	
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)	-	29	-	
Fall Time		tf	-	8	-	
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 1 MHz)	Ciss	-	1136	-	pF
Output Capacitance		Coss	-	133	-	
Reverse Transfer Capacitance		Crss	-	119	-	
Gate-Resistance (VGS = 0 V, VDS=0V,f=1MHz)		Rg	-	0.72	-	Ω

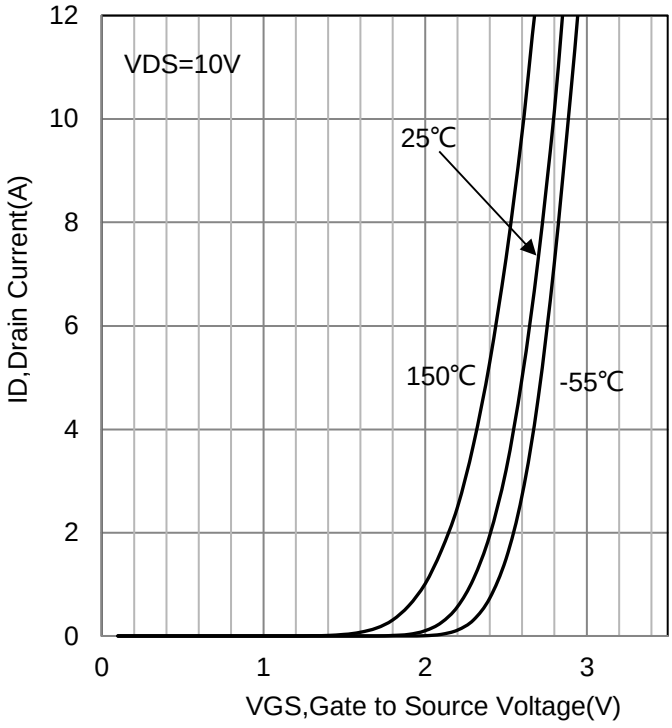
3.Pulse test: PW ⩽ 300us duty cycle ⩽ 2%.

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

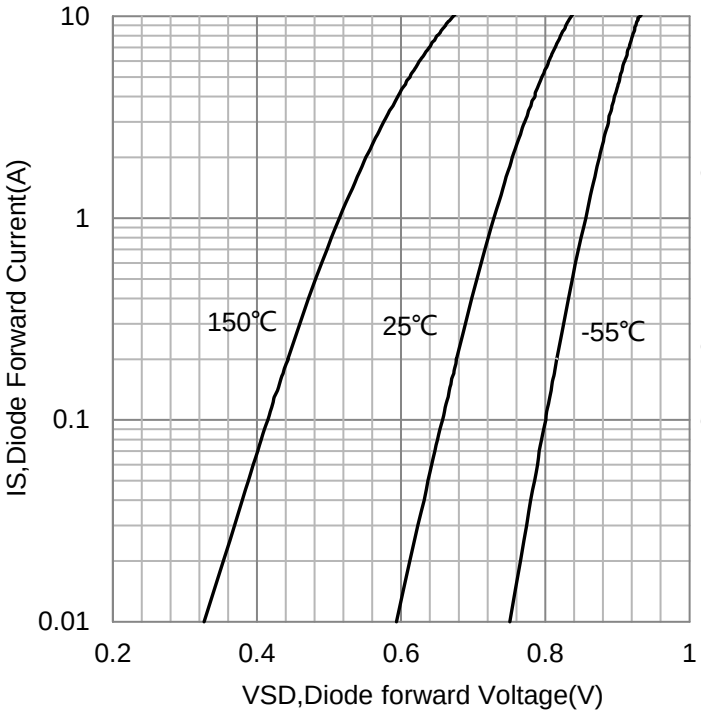
7.ELECTRICAL CHARACTERISTICS CURVES



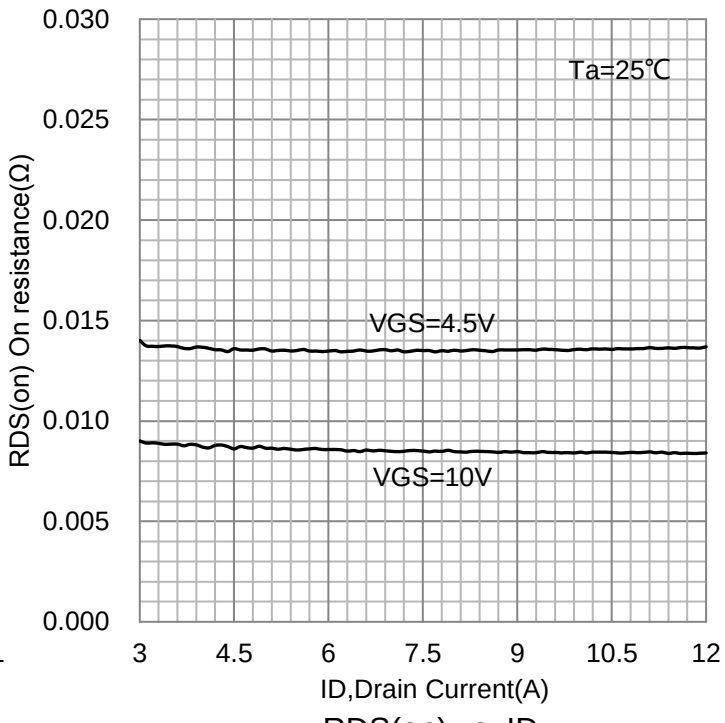
ID vs. VDS



ID vs. VGS

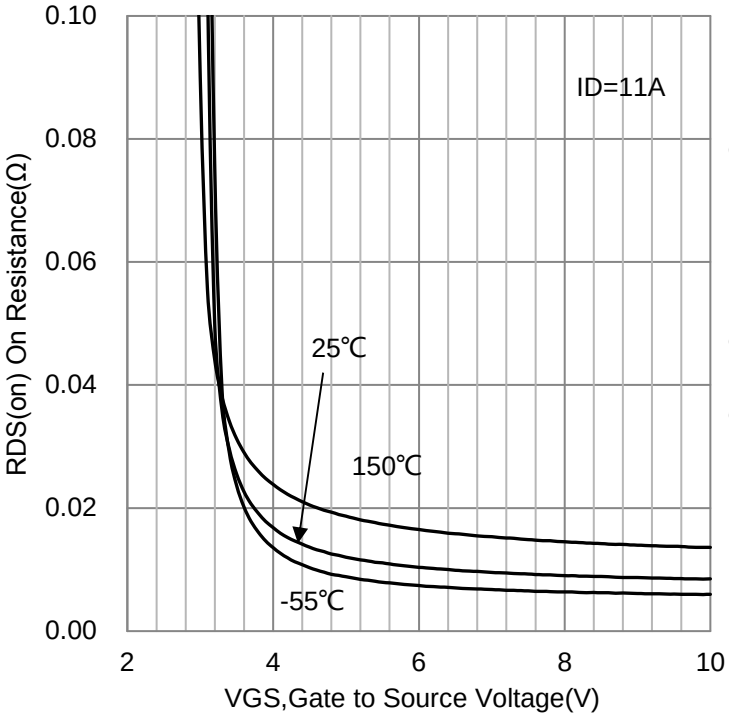


IS vs. VSD

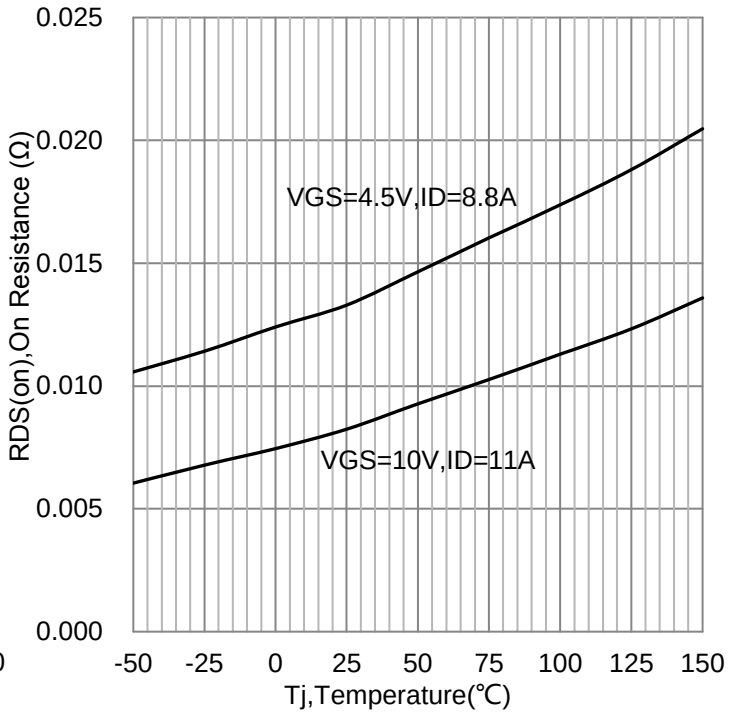


RDS(on) vs. ID

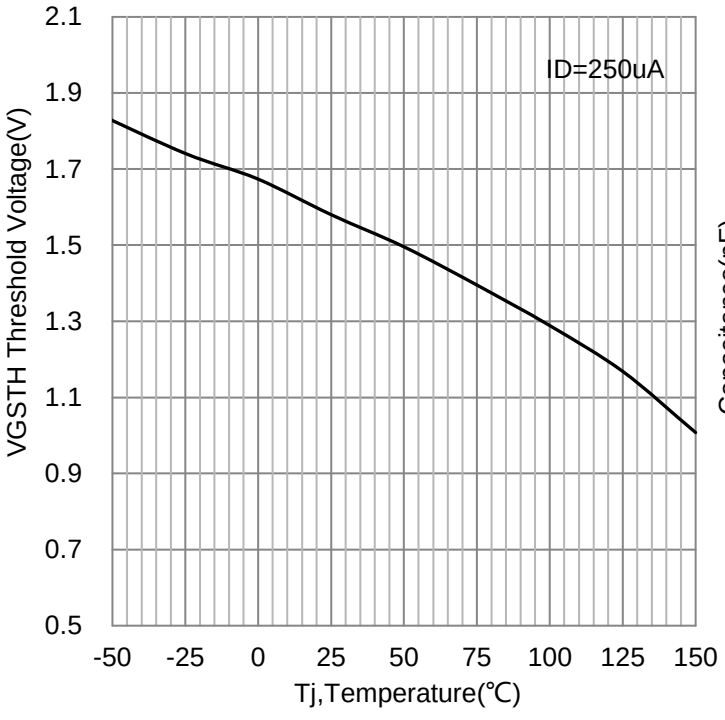
7.ELECTRICAL CHARACTERISTICS CURVES(Con.)



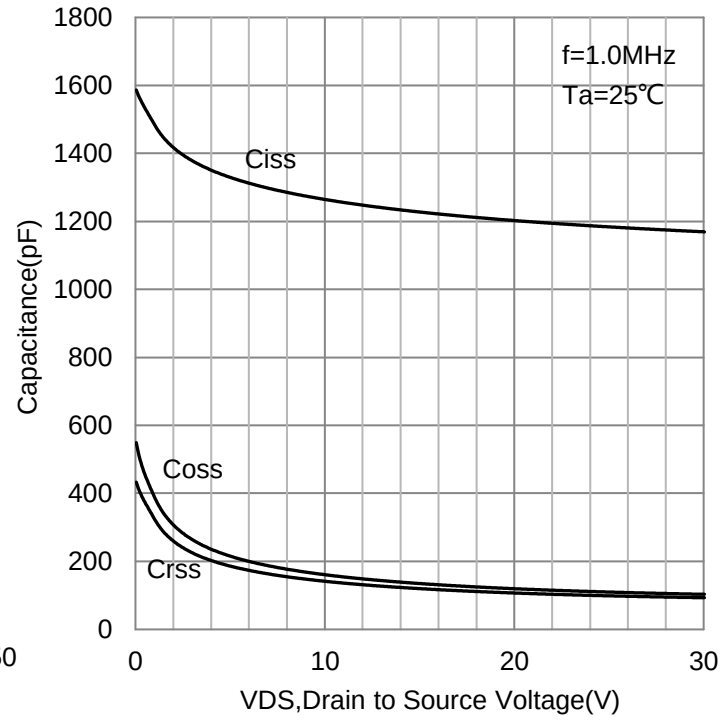
RDS(on) vs. VGS



RDS(on) vs. Tj

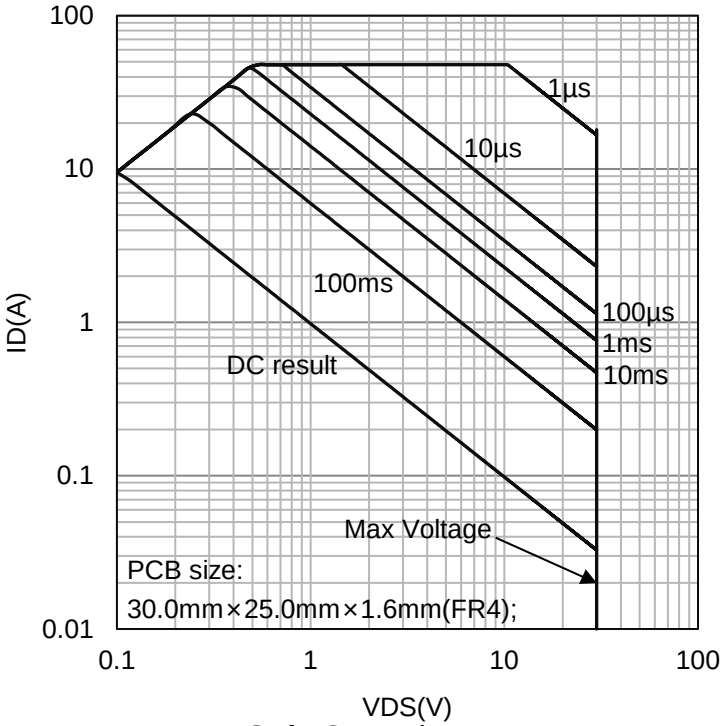


VGSTH vs. Tj

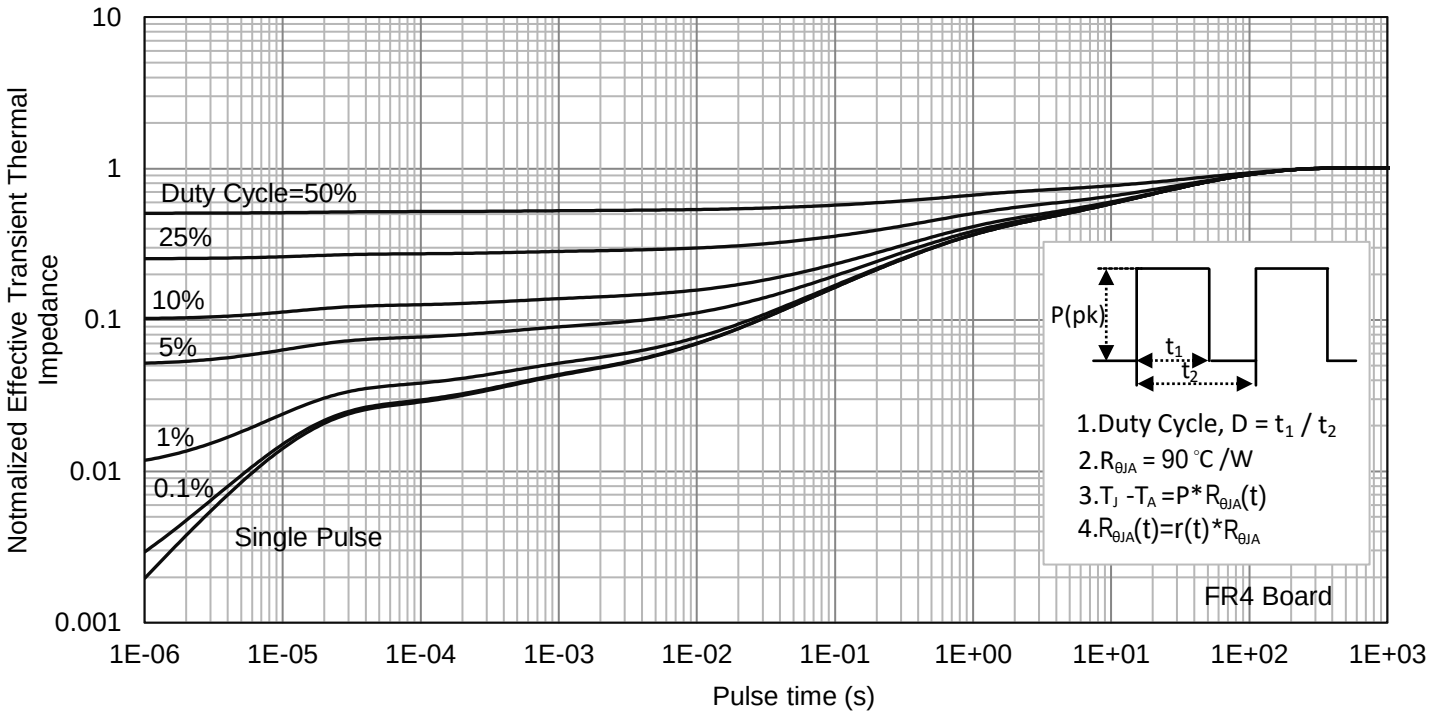


Capacitance

7.ELECTRICAL CHARACTERISTICS CURVES(Con.)

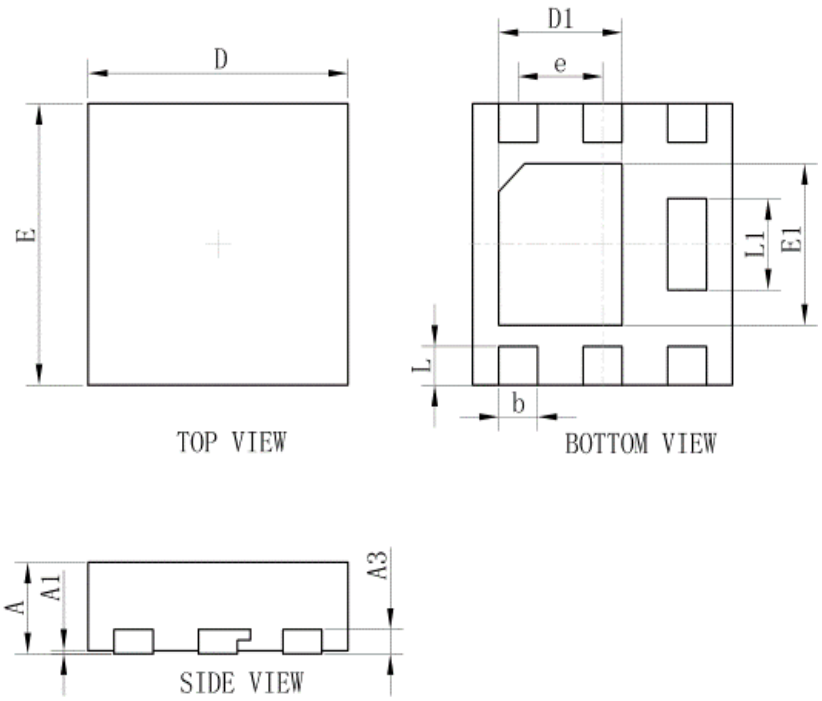


Safe Operating Area



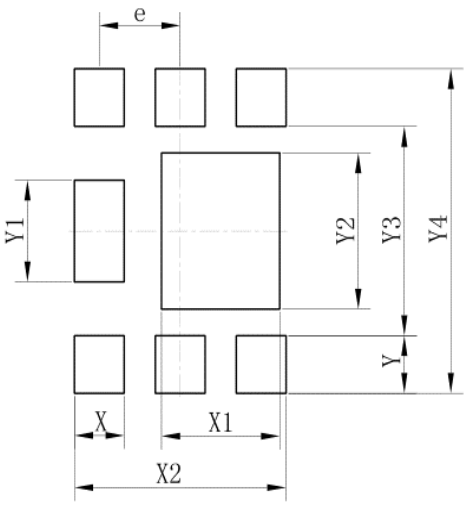
Thermal Response

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