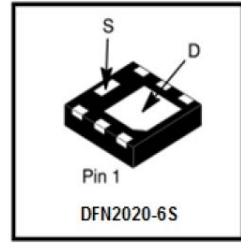


N3406D

N-Channel 30V (D-S) MOSFET

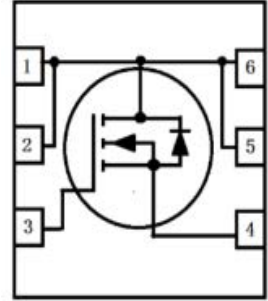
1. FEATURES

- Low RDS(on) trench technology
- Fast Switching Speed
- Low thermal impedance
- We declare that the material of product are Halogen Free and compliance with RoHS requirements.



2. APPLICATIONS

- White LED boost converters
- Automotive Systems
- DC-DC Converters



3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
N3406D	N6S	4000/Tape&Reel

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

Parameter	Symbol	Limits	Unit	
Drain-to-Source Voltage	VDSS	30	V	
Gate-to-Source Voltage	VGS	±8	V	
Continuous Drain Current(Note 1)	ID	TA =25°C	10	A
		TA =70°C	8.1	A
Pulsed Drain Current (Note 2)	IDM	40	A	
Maximum Power Dissipation(Note 1)	PD	TA =25°C	2.1	W
		TA =70°C	1.3	
Operating Junction and Storage Temperature Range	TJ/Tstg	-55 ~+150	°C	

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit	
Maximum Junction-to-Ambient(Note 1)	RθJA	t ≤10s	62.5	°C/W
		Steady State	110	

- 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

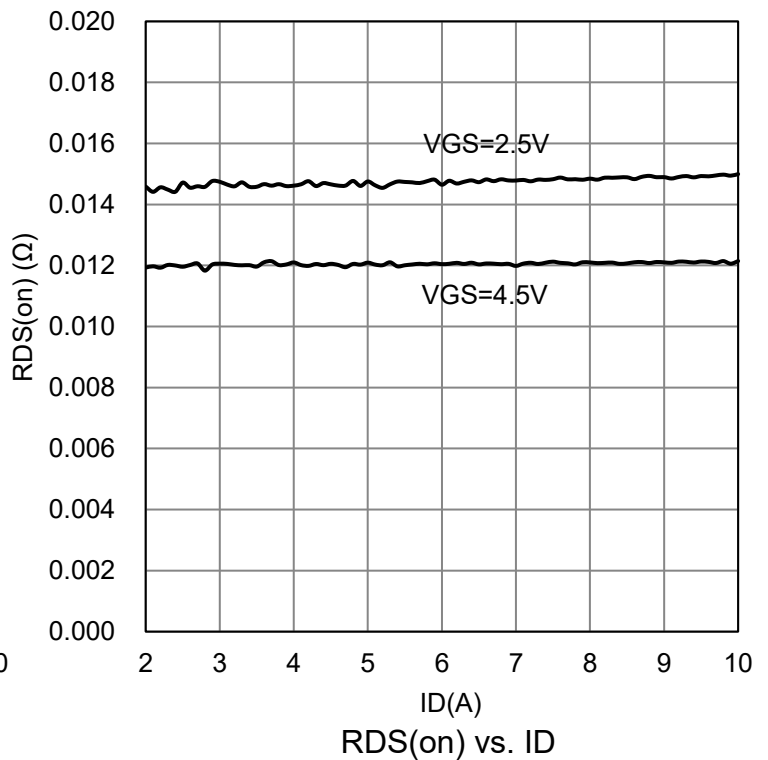
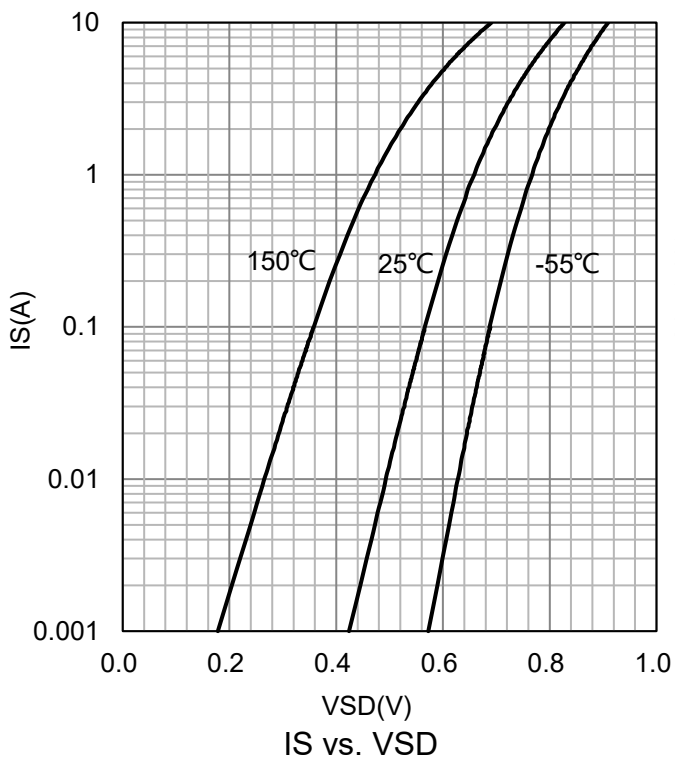
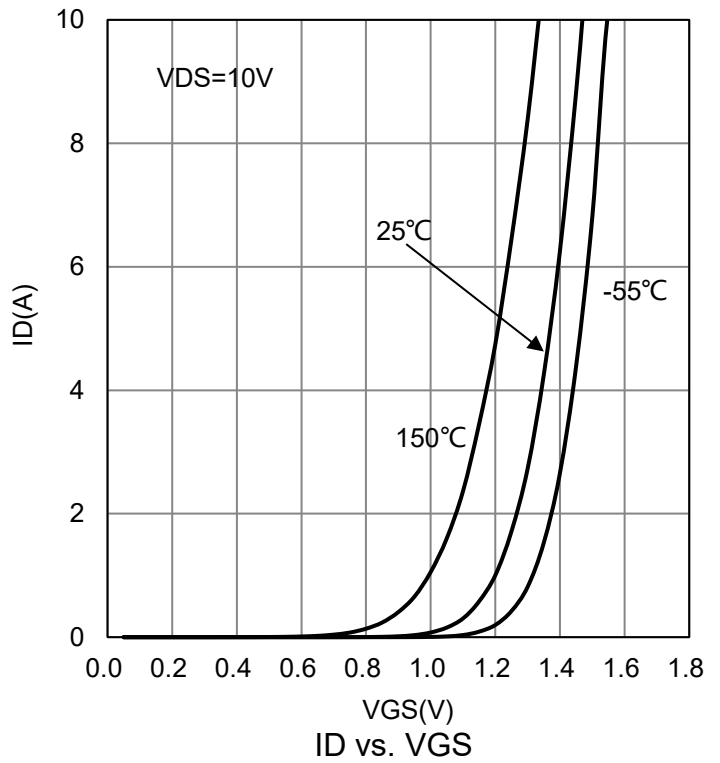
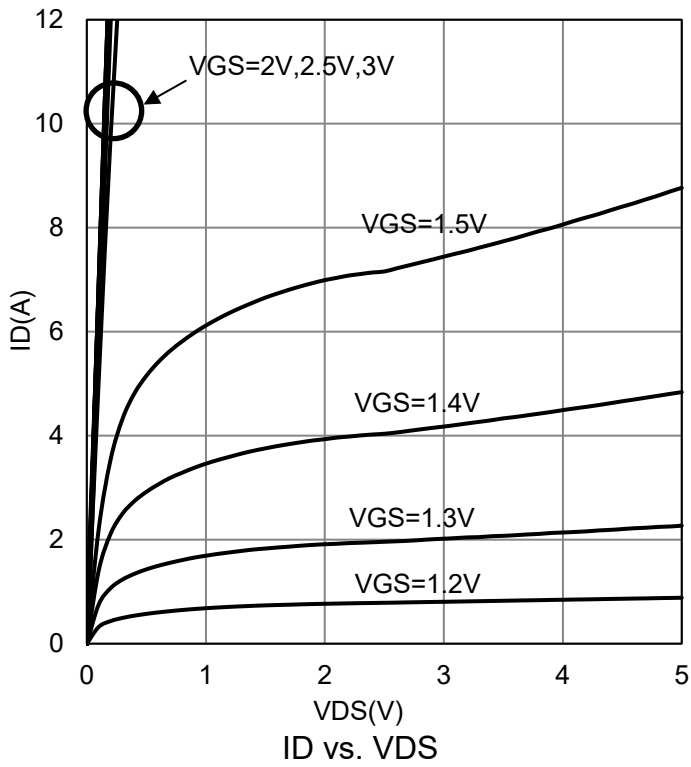


6. ELECTRICAL CHARACTERISTICS

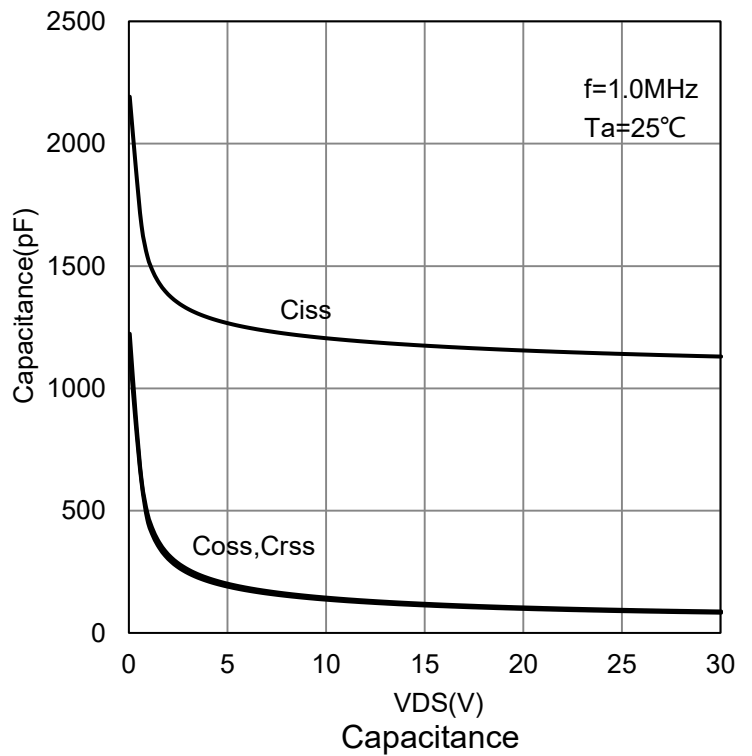
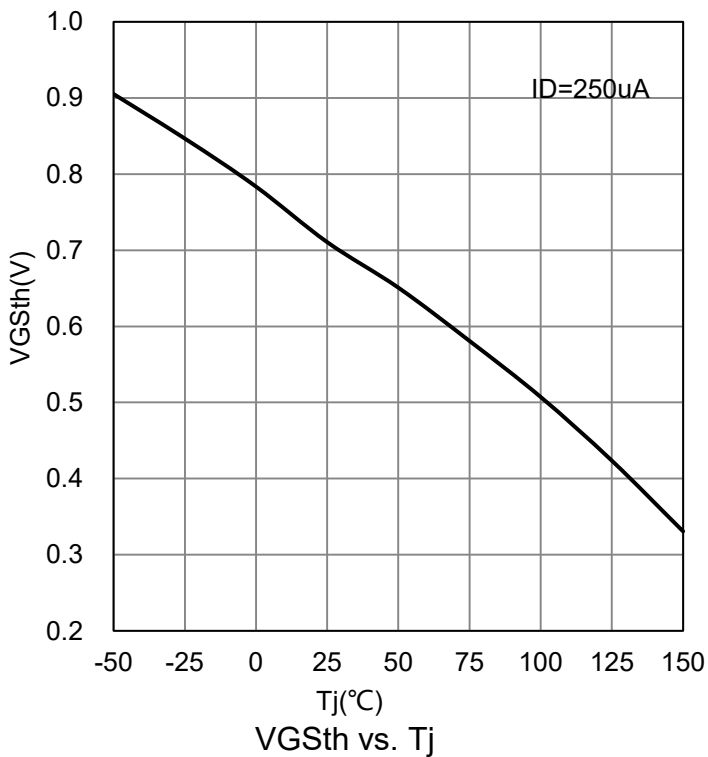
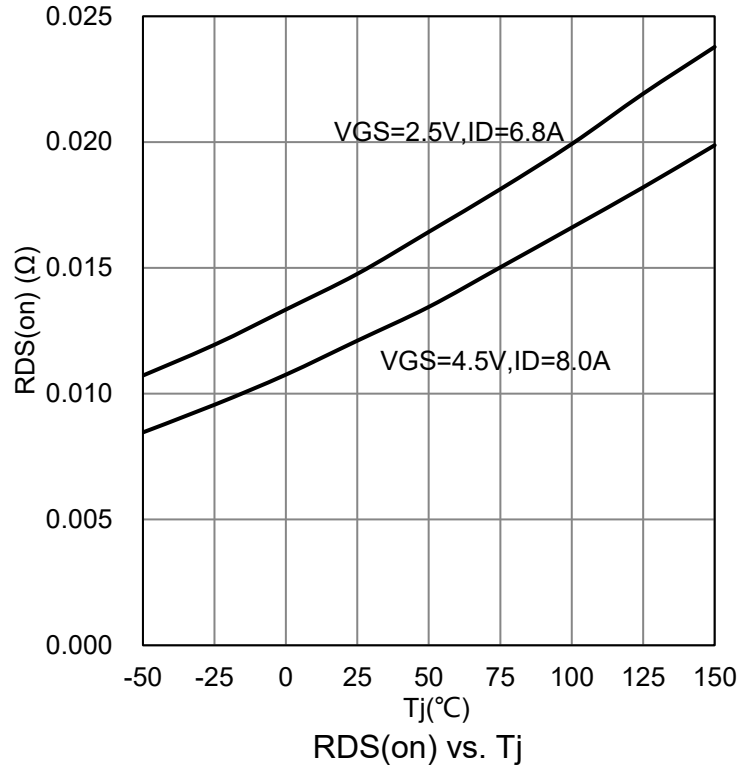
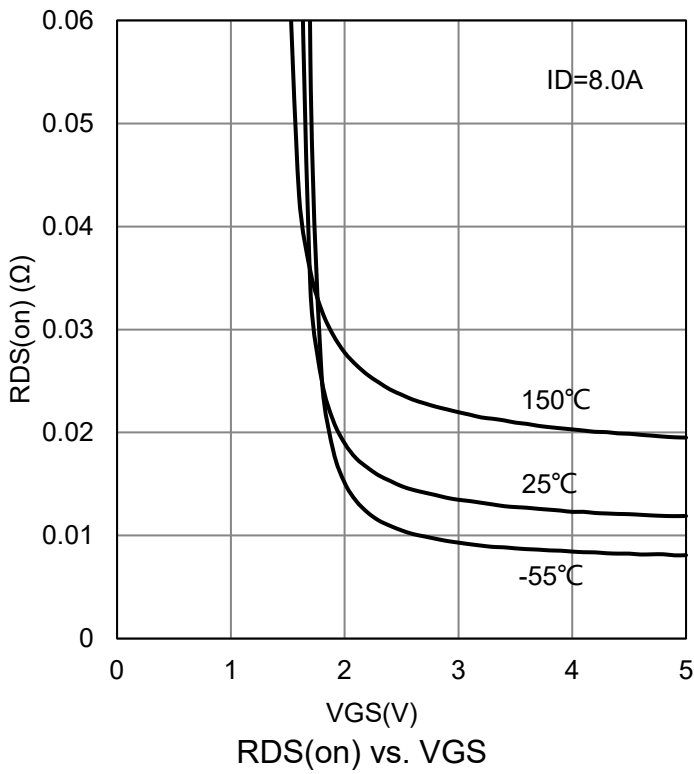
Characteristic	Symbol	Min.	Typ.	Max.	Unit	
Static						
Drain-Source Breakdown Voltage (VGS =0V, ID =250μA)	V(BR)DSS	30	-	-	V	
Gate-Source Threshold Voltage (VDS =VGS , ID =250μA)	VGS(th)	0.4	-	1.3	V	
Gate Leakage Current (VDS =0V, VGS =±8V)	IGSS	-	-	±100	nA	
Zero Gate Voltage Drain Current (VDS = 24 V, VGS = 0 V) (VDS = 24 V, VGS = 0 V, TJ = 55°C)	IDSS	-	-	1 25	μA	
Drain-Source On-Resistance (VGS =4.5V, ID = 8A) (VGS =2.5V, ID = 6.8A)	RDS(ON)	-	-	13.5 20	mΩ	
Diode Forward Voltage (IS = 1.7 A, VGS = 0 V)	VSD	-	0.68	-	V	
DYNAMIC						
Total Gate Charge	(VDS =15V, VGS =4.5V, ID =8A)	Qg	-	24	-	nC
Gate-Source Charge		Qgs	-	5	-	
Gate-Drain Charge		Qgd	-	6.8	-	
Turn-On Delay Time	(VDS =15V, RL = 1.9Ω, ID=8A, VGEN =4.5V, RGEN =6 Ω)	td(on)	-	19	-	ns
Turn-On Rise Time		tr	-	25	-	
Turn-Off Delay Time		td(off)	-	105	-	
Turn-Off Fall Time		tf	-	33	-	
Input Capacitance	(VDS =15V, VGS =0V, f=1MHz)	Ciss	-	2141	-	pF
Output Capacitance		Coss	-	229	-	
Reverse Transfer Capacitance		Crss	-	205	-	

3. Pulse test; pulse width ≤ 300μs, duty cycle ≤ 2%

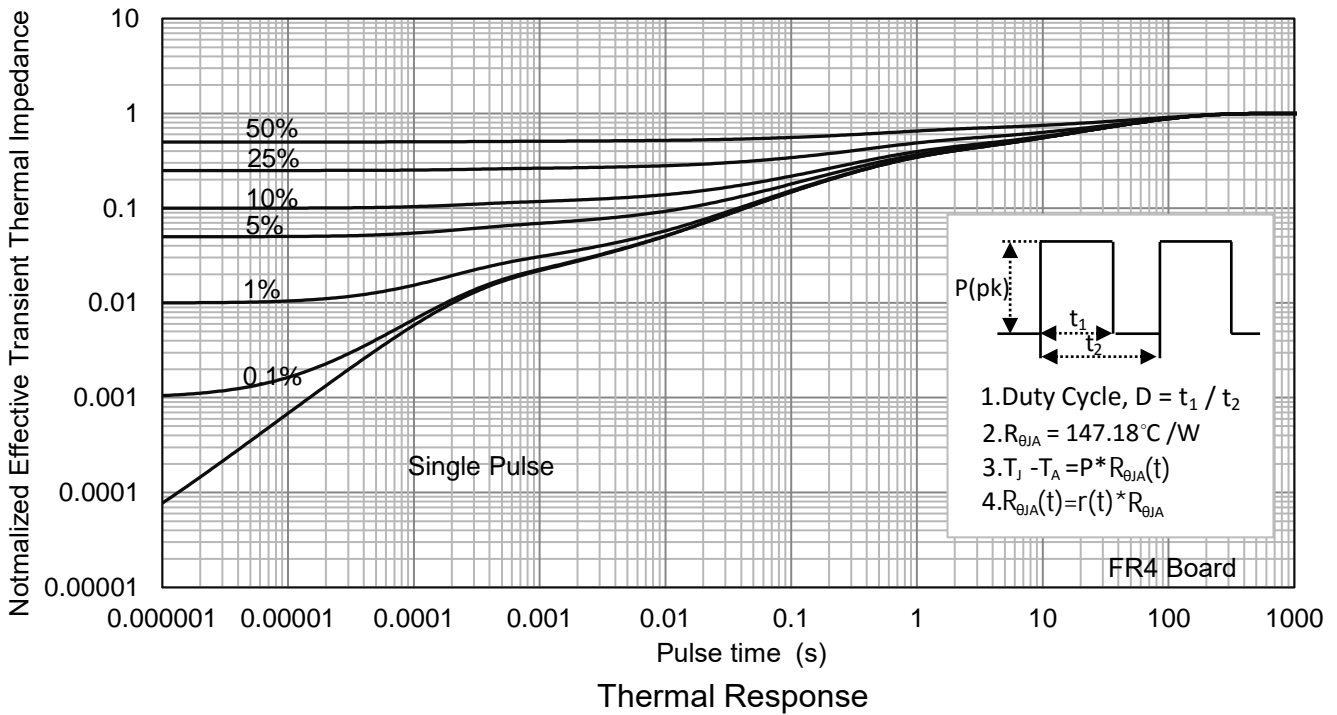
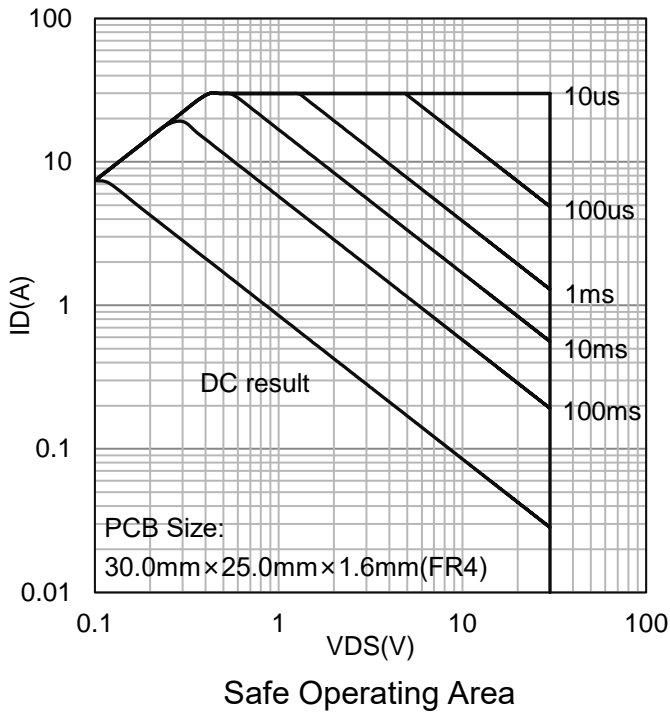


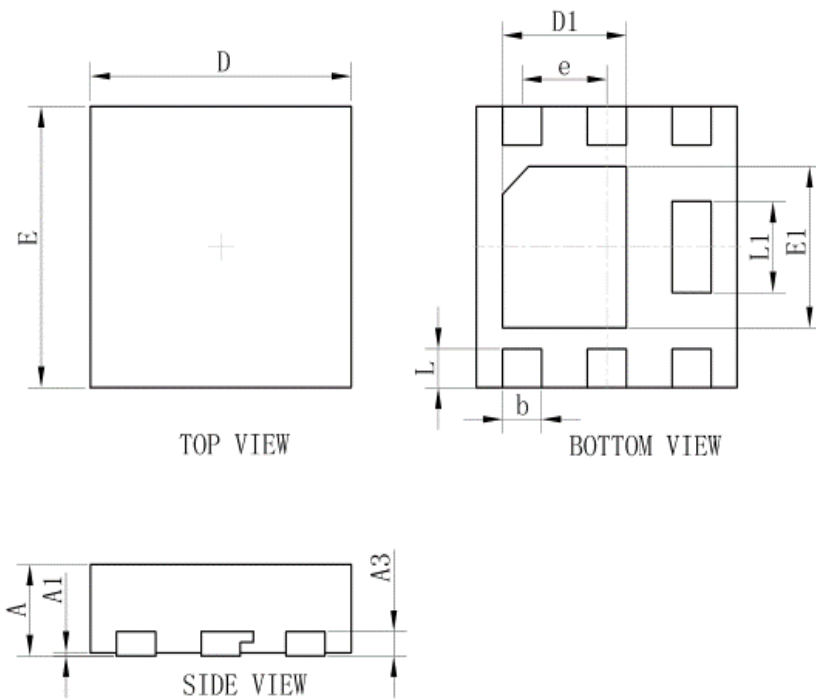
7.ELECTRICAL CHARACTERISTICS CURVES


7.ELECTRICAL CHARACTERISTICS CURVES(Con.)

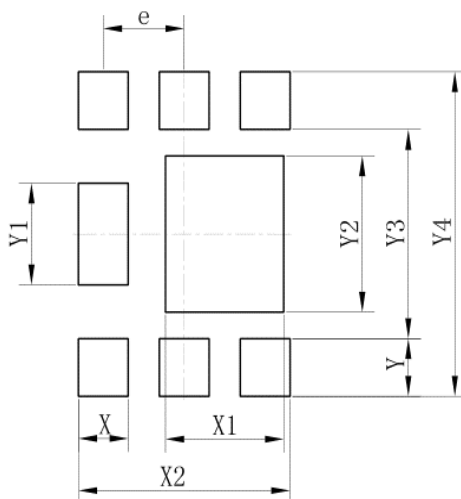


7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



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

