

N2406D

30V N-Channel Enhancement-Mode MOSFET

1. FEATURES

- VDS= 30V
- RDS(ON), VGS@10V, IDS@5.8A = 38mΩ
- RDS(ON), VGS@4.5V, IDS@5.0A = 43mΩ
- RDS(ON), VGS@2.5V, IDS@4.0A = 62mΩ
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.

2. APPLICATIONS

- Advanced trench process technology
- High density cell design for ultra low on-resistance

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
N2406D	6D	4000/Tape&Reel

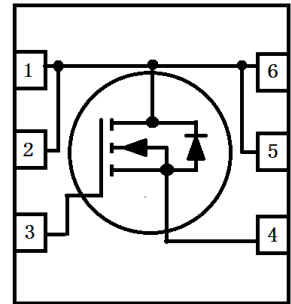
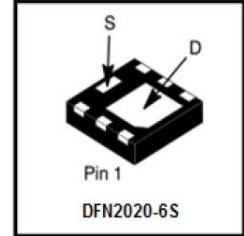
4. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit
Drain–Source Voltage	VDSS	30	V
Gate–to–Source Voltage – Continuous	VGS	±12	V
Drain Current			
– Continuous TA = 25°C	ID	7	A
– Pulsed(Note 1)	IDM	30	

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Maximum Power Dissipation	PD	2.4	W
Thermal Resistance, Junction–to–Ambient(Note 2)	RθJA	60	°C/W
Junction and Storage temperature	TJ, Tstg	–55~+150	°C

1. Repetitive Rating: Pulse width limited by the Maximum junction temperature.
2. 1-in² 2oz Cu PCB board.



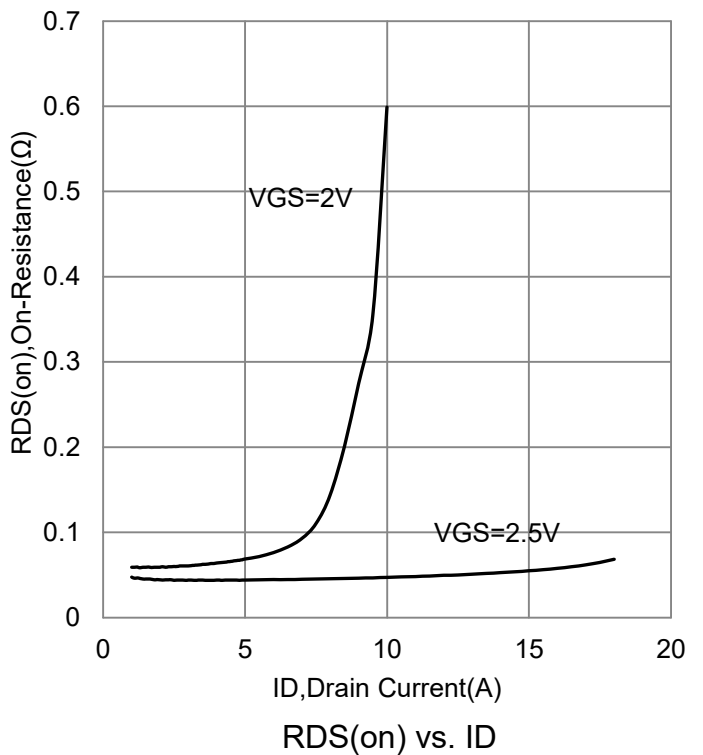
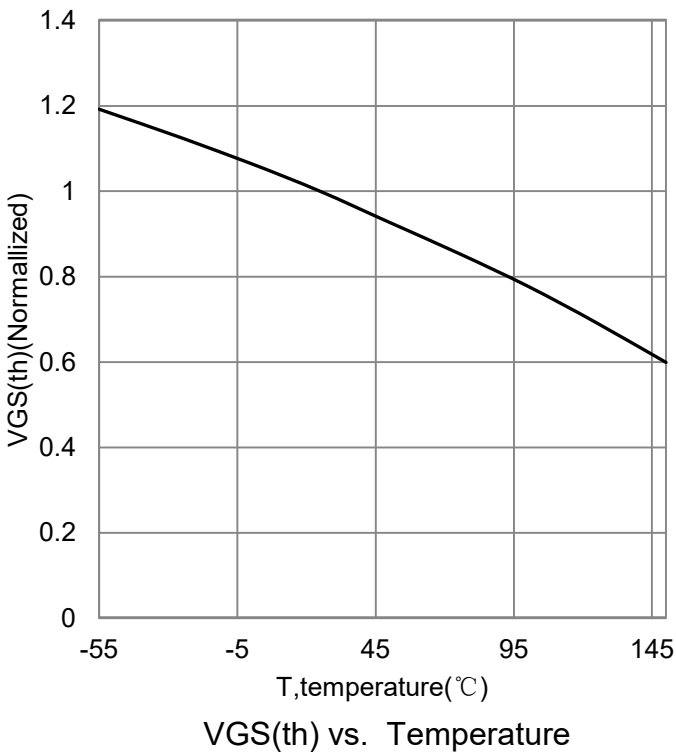
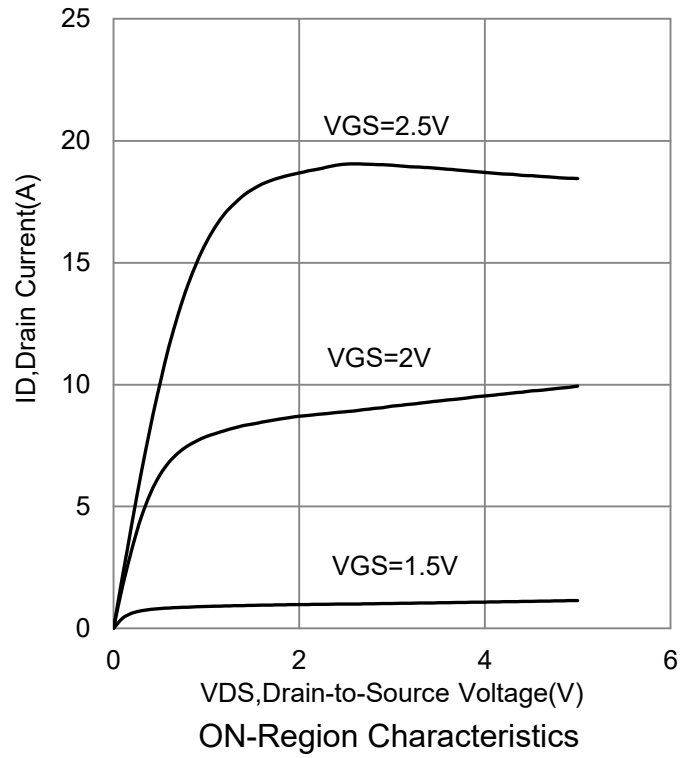
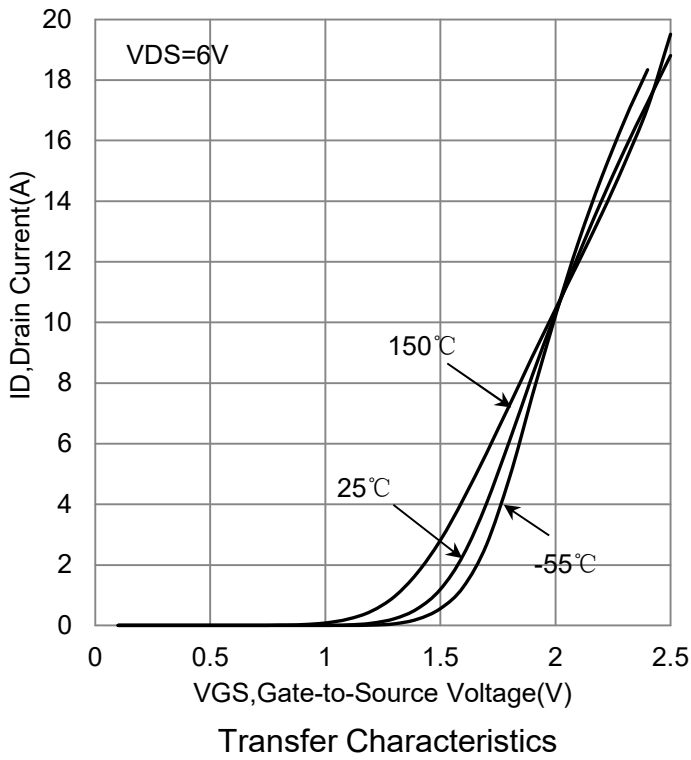
6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Static					
Drain–Source Breakdown Voltage (VGS = 0, ID = 250μA)	V(BR)DSS	30	-	-	V
Zero Gate Voltage Drain Current (VDS=9.6V, VGS=0V)	IDSS	-	-	1	μA
Gate–Body Leakage Current, Forward (VDS = 0 V, VGS = 8 V)	IGSSF	-	-	100	nA
Gate–Body Leakage Current, Reverse (VDS = 0 V, VGS = -8 V)	IGSSR	-	-	-100	nA
Gate Threshold Voltage (VDS = VGS, ID = 250μA)	VGS(th)	0.7	-	1.4	V
Static Drain–Source On–State Resistance (VGS = 10 V, ID =5.8 A) (VGS = 4.5 V, ID =5 A) (VGS = 2.5 V, ID = 4 A)	RDS(on)	- - -	31 34 45	36 43 62	mΩ
Dynamic					
Total Gate Charge (VGS = 4.5 V, ID = 5.8A,VDS= 15 V)	Qg	-	5.4	-	nC
Gate-Source Charge (VGS = 4.5 V, ID = 5.8A,VDS= 15 V)	Qgs	-	1.2	-	nC
Gate-Drain Charge (VGS = 4.5 V, ID = 5.8A,VDS= 15 V)	Qgd	-	1.3	-	nC
Input Capacitance (VGS = 0 V, f = 1.0MHz,VDS= 15 V)	Ciss	-	590	-	pF
Output Capacitance (VGS = 0 V, f = 1.0MHz,VDS= 15 V)	Coss	-	46	-	pF
Reverse Transfer Capacitance (VGS = 0 V, f = 1.0MHz,VDS= 15 V)	Crss	-	37	-	pF
Turn-On Delay Time	td(on)	-	7	14	ns
Rise Time	tr	-	15	30	
Turn-Off Delay Time	td(off)	-	38	76	
Fall Time	tf	-	3	6	
Forward Voltage (VGS = 0 V, ISD = 1 A)	VSD	-	-	1.2	V
Max.Diode Forward Current	IS	-	-	2.5	A

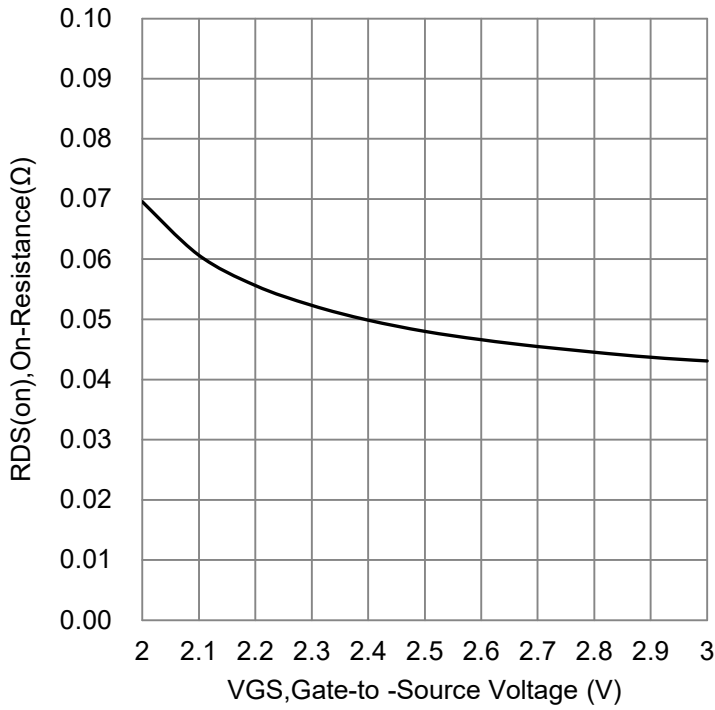
3.Pulse Test: Pulse Width ≤300 μs, Duty Cycle ≤2.0%.



7. ELECTRICAL CHARACTERISTICS CURVES

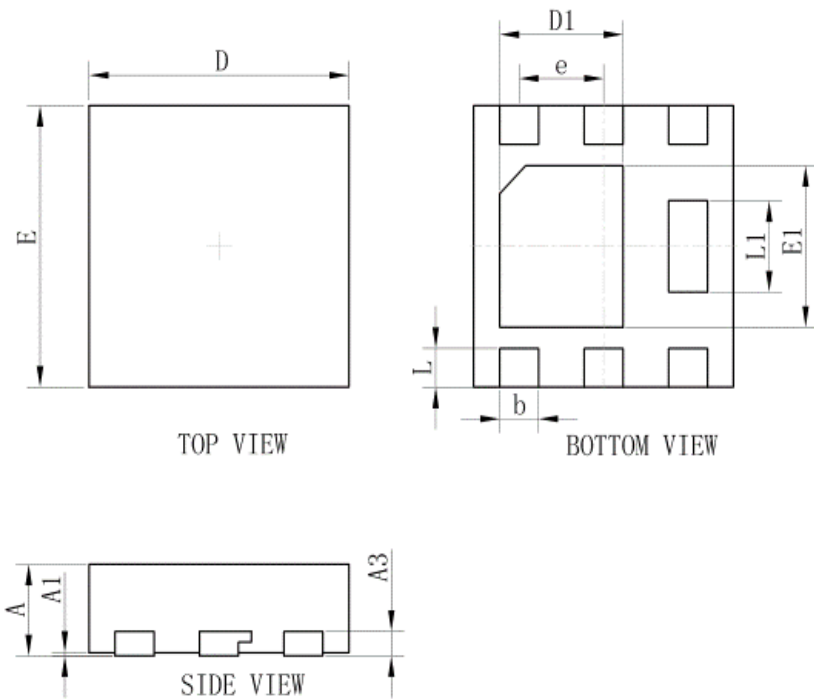


7. ELECTRICAL CHARACTERISTICS CURVES (Con.)

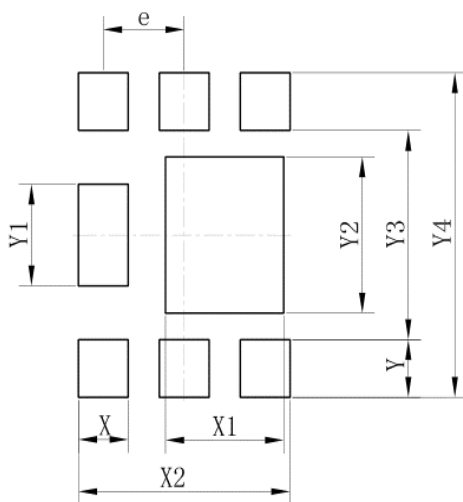


RDS(on) vs. VGS



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

