

N2293D

105V N-Channel Enhancement-Mode MOSFET

1. FEATURES

- VDS= 105V
- RDS(ON) ≤ 200 mΩ @ VGS = 10V, ID = 3A
- RDS(ON) ≤ 260 mΩ @ VGS = 4.5V, ID = 1A
- Super high density cell design for extremely low RDS(ON).
- Exceptional on-resistance and maximum DC current capability.
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

2. APPLICATIONS

- Power Management in Note book
- DC/DC Converter
- Load Switch

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
N2293D	N4L	4000/Tape&Reel

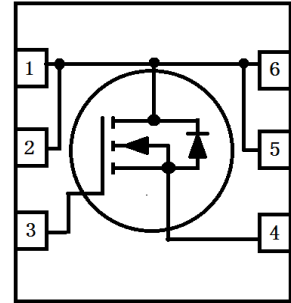
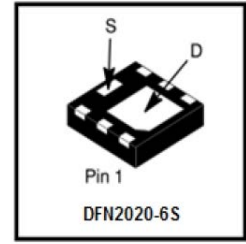
4. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit
Drain–Source Voltage	VDSS	105	V
Gate–to–Source Voltage – Continuous	VGS	±20	V
Drain Current			
– Continuous TA = 25°C	ID	3	A
– Pulsed	IDM	10	
Avalanche Current	IAS	9	A
Avalanche energy (L=0.1mH)	EAS	4	mJ
Power Dissipation (Note 1)	PD	2.7	W
Junction and Storage temperature	TJ, Tstg	-55~+150	°C

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Maximum Junction-to-Ambient (Note 1)	RθJA	t ≤ 10S	45
		Steady State	95

1. Surface Mounted on 1" x 1" FR4 Board.



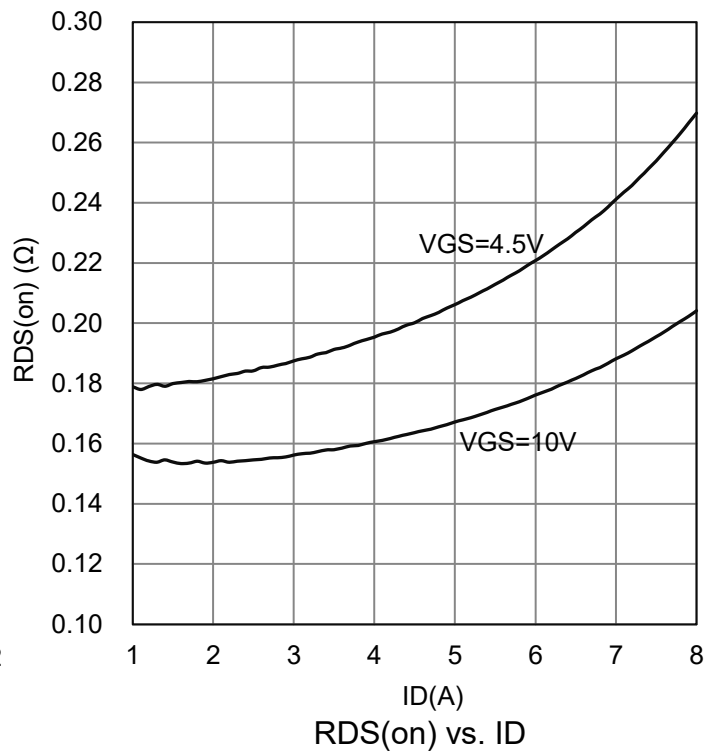
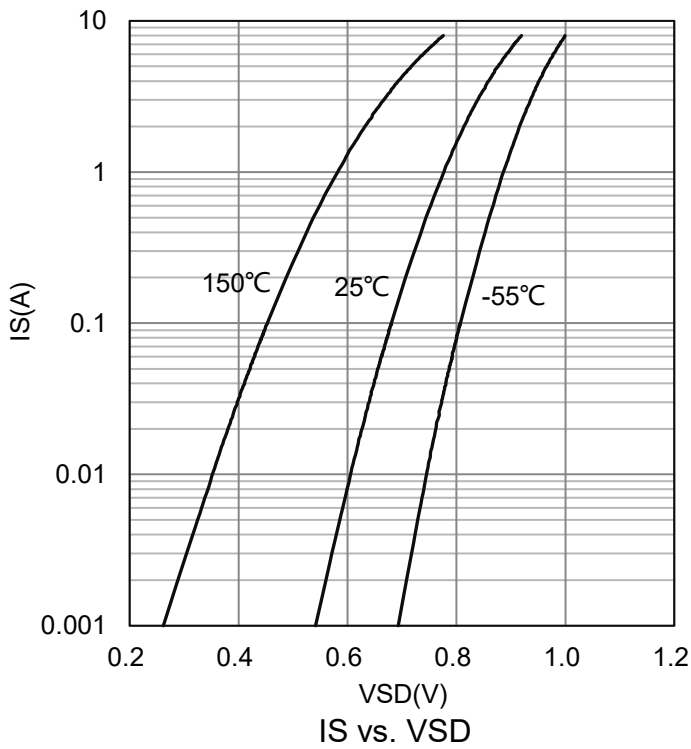
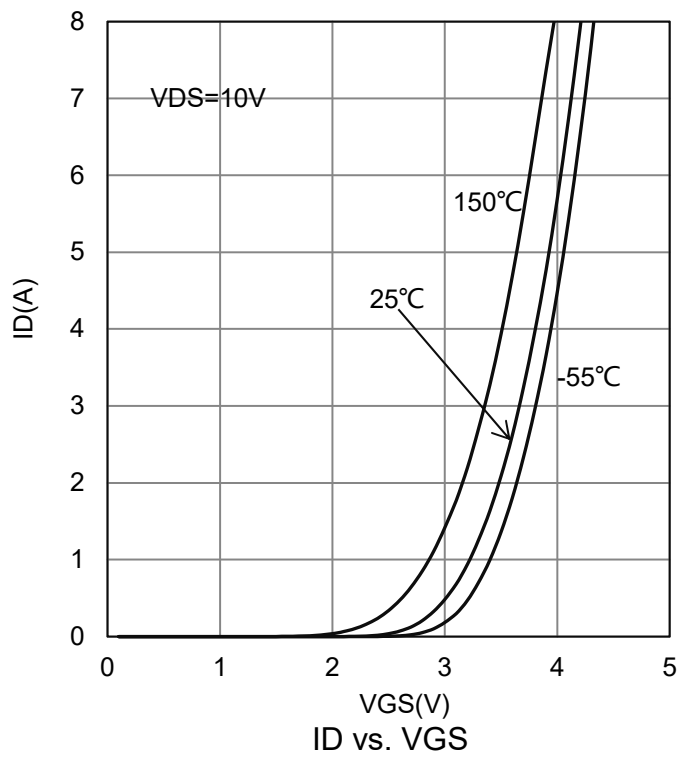
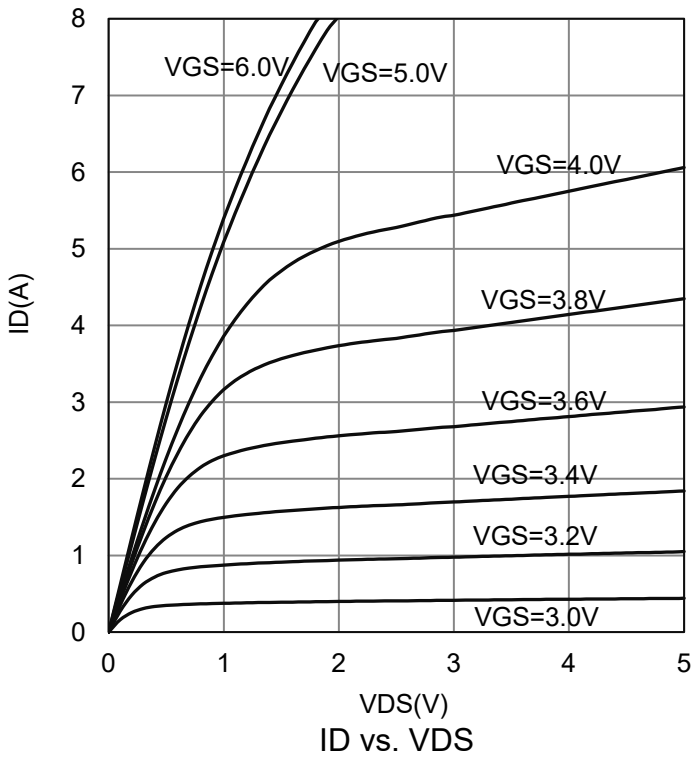
6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain–Source Breakdown Voltage (VGS = 0V, ID = 250μA)	V(BR)DSS	105	-	-	V
Gate Threshold Voltage (VDS = VGS, ID = 250μA)	VGS(th)	1.0	-	3.0	V
Gate–Body Leakage (VDS = 0 V, VGS =±20 V)	IGSS	-	-	±100	nA
Zero Gate Voltage Drain Current (VDS=105 V, VGS=0 V)	IDSS	-	-	1	μA
Static Drain–Source On–State Resistance (VGS = 10 V, ID = 3 A) (VGS = 4.5 V, ID = 1 A)	RDS(on)	- -	160 200	200 260	mΩ
Forward Voltage (VGS = 0 V, IS = 6.5 A)	VSD	-	0.9	1.3	V
Total Gate Charge	(VDS =50V, VGS =5V, ID =6.5A)	Qg	-	5.8	nC
Gate–Source Charge		Qgs	-	1.9	
Gate–Drain Charge		Qgd	-	3.1	
Input Capacitance	(VDS =25V, VGS =0V, f=1MHz)	Ciss	-	483	pF
Output Capacitance		Coss	-	24.6	
Reverse Transfer Capacitance		Crss	-	19.7	
Turn-On Delay Time	(VDD =50V, RL =50Ω, VGEN =10V, RG =2.5Ω)	td(on)	-	9.6	ns
Rise Time		tr	-	4.2	
Turn-Off Delay Time		td(off)	-	25	
Fall Time		tf	-	3.2	
Gate resistance (VGS =0V, VDS =0V, f=1MHz)	Rg	-	56.5	-	Ω

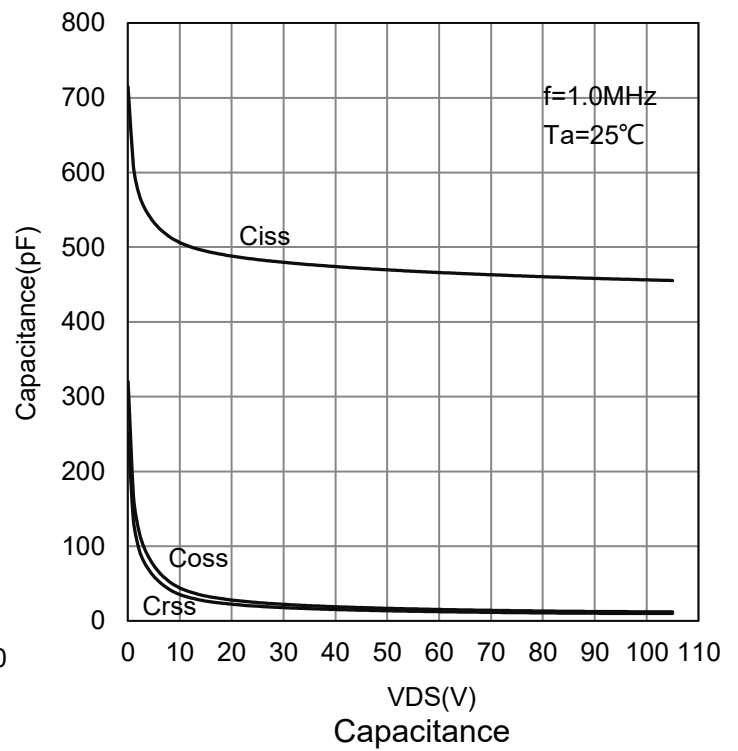
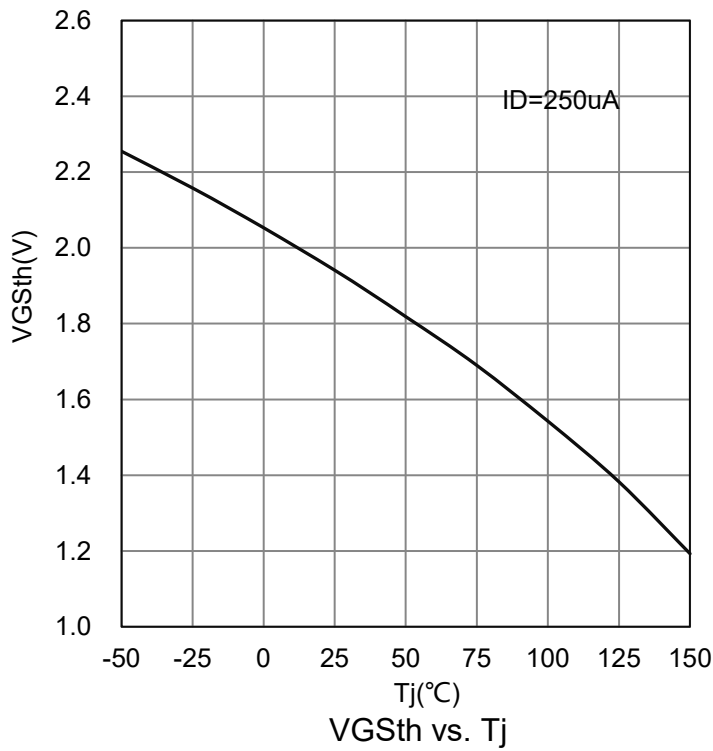
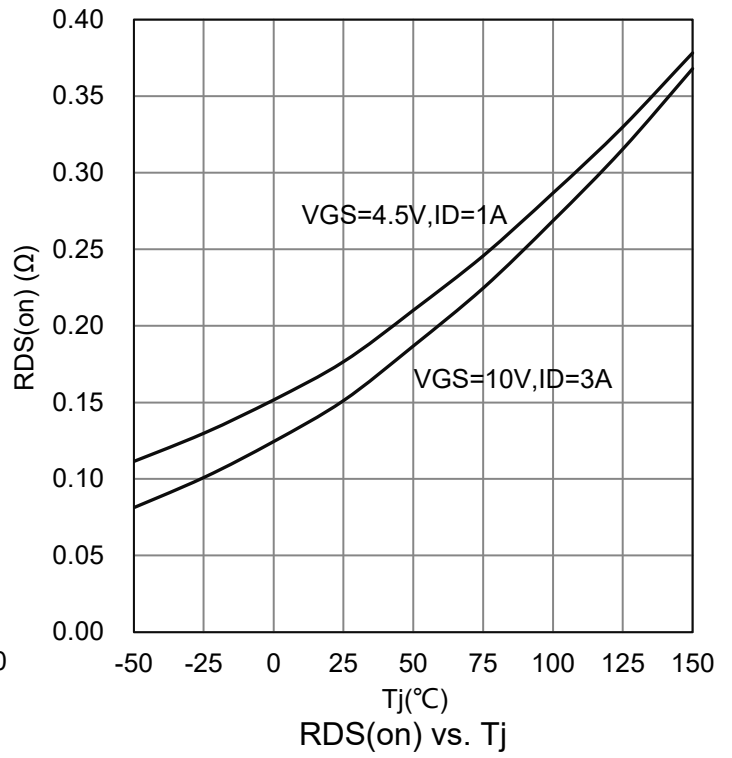
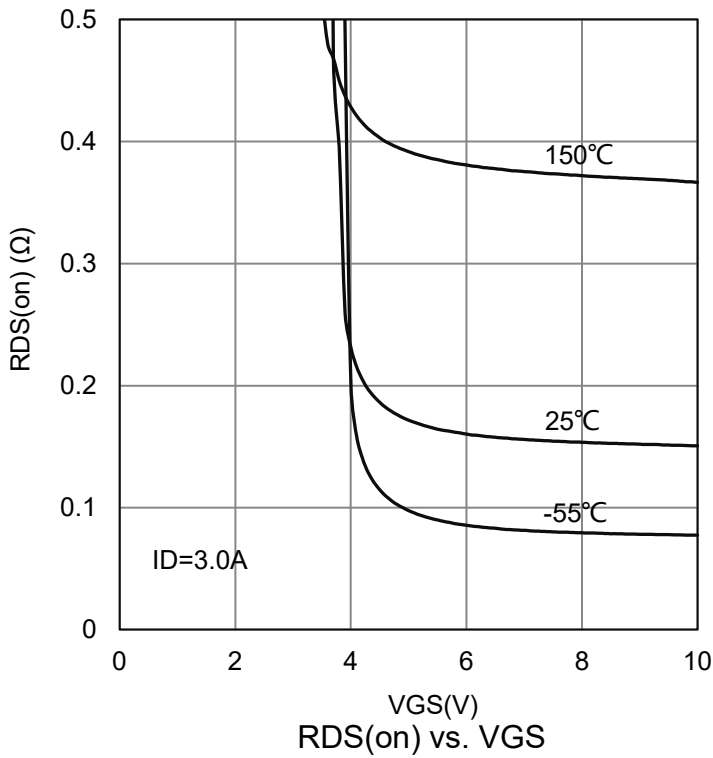
2:Pulse Test: Pulse Width ≤300 μs, Duty Cycle ≤2.0%.

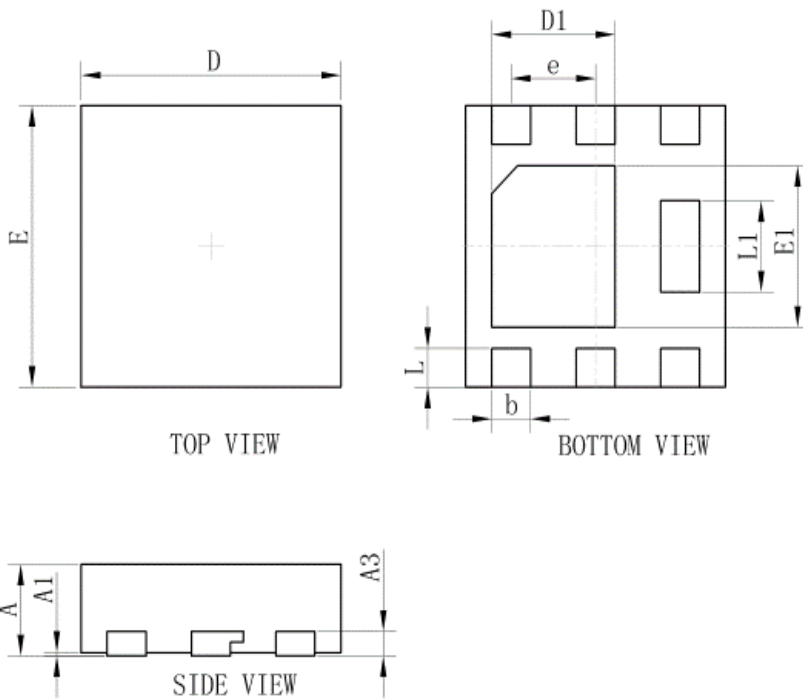


7. ELECTRICAL CHARACTERISTICS CURVES

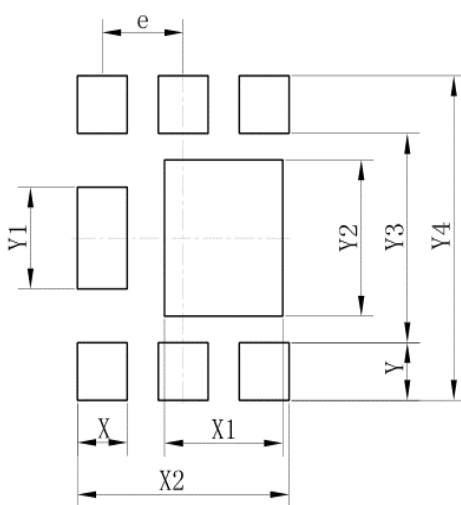


7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



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

