

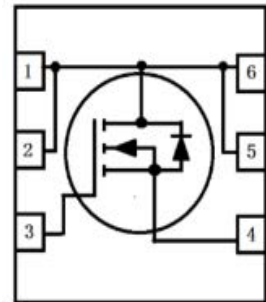
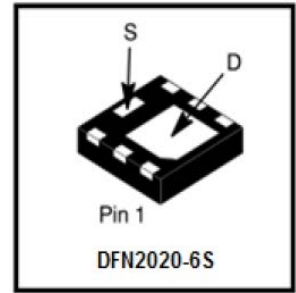
N2324D

S-N2324D

20V N-Channel (D-S) MOSFET

1. FEATURES

- VDS =20V
RDS(ON)≤10.5mΩ,VGS@4.5V,IDS@10A
RDS(ON)≤12.5mΩ,VGS@2.5V,IDS@8A
- Low RDS(ON) trench technology.
- Low thermal impedance.
- Fast switching speed.
- 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

- Power Routing
- Level Shifting and Driver Circuits

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
N2324D	AN	4000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit	
Drain-Source Voltage	VDS	20	V	
Gate-Source Voltage	VGS	± 8		
Continuous Drain Current(Note 1)	ID	TA = 25°C	14	A
		TA = 70°C	11	
Pulsed Drain Current(Note 2)	IDM	60		
Continuous Source Current (Diode Conduction)(Note 1)	IS	2.9		
Power Dissipation(Note 1)	PD	TA = 25°C	3	W
		TA = 70°C	1.9	
Operating Junction and Storage Temperature Range	TJ , Tstg	-55~+150	°C	

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)	RθJA	t≤10S	40
		Steady State	90



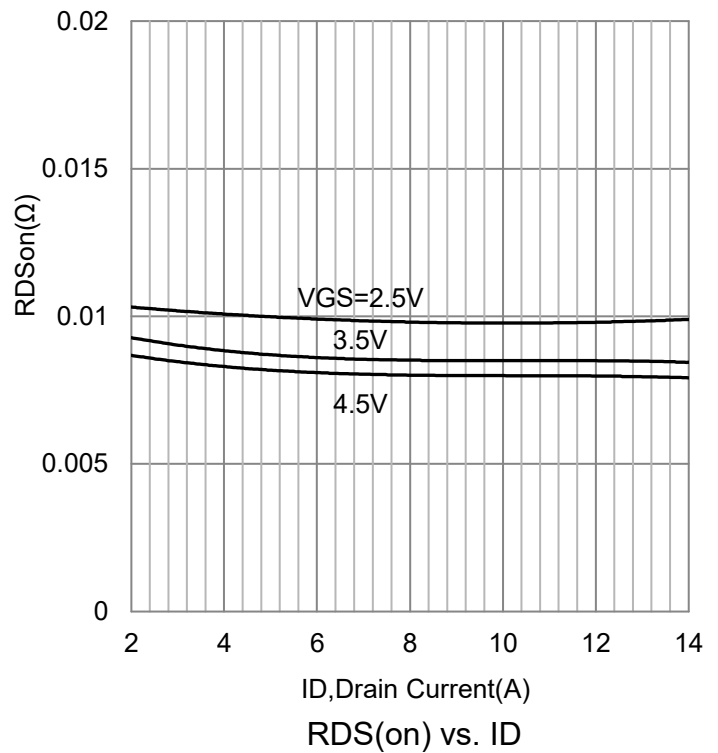
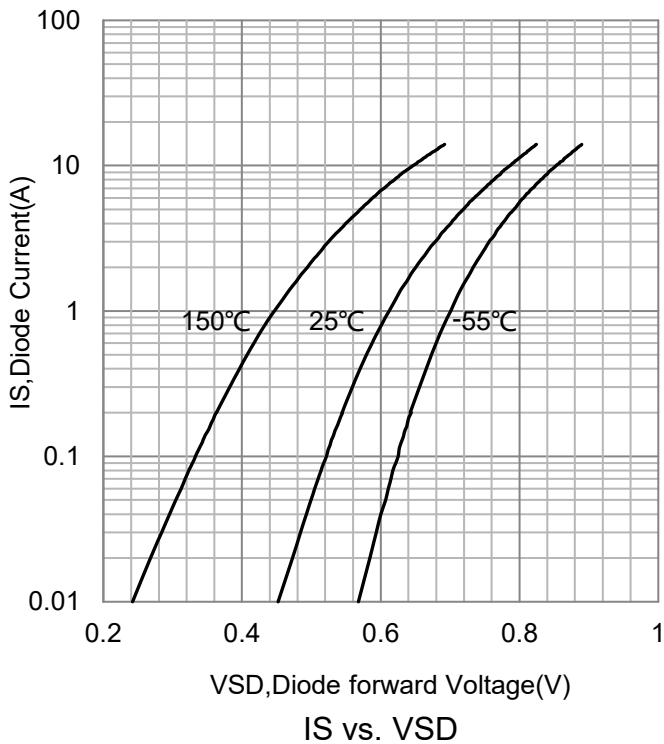
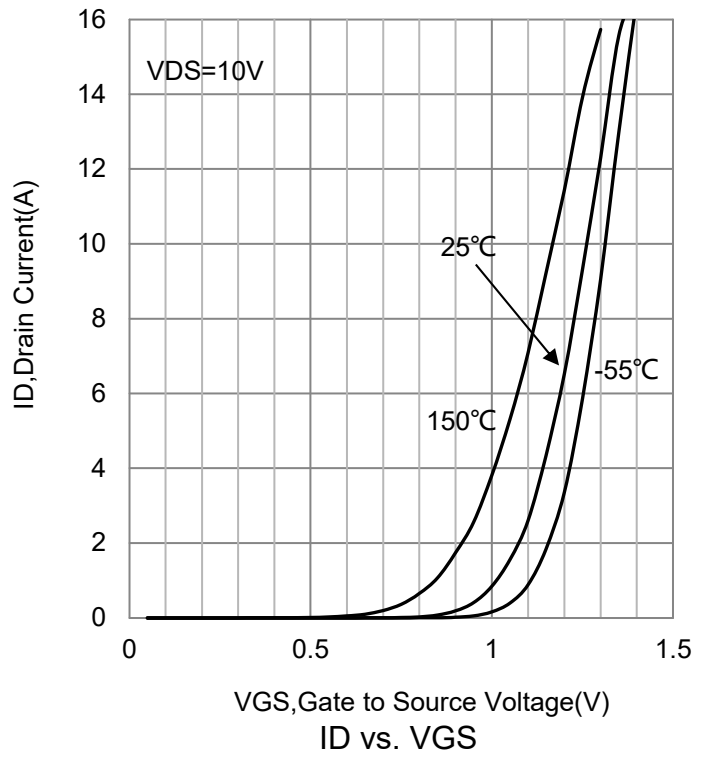
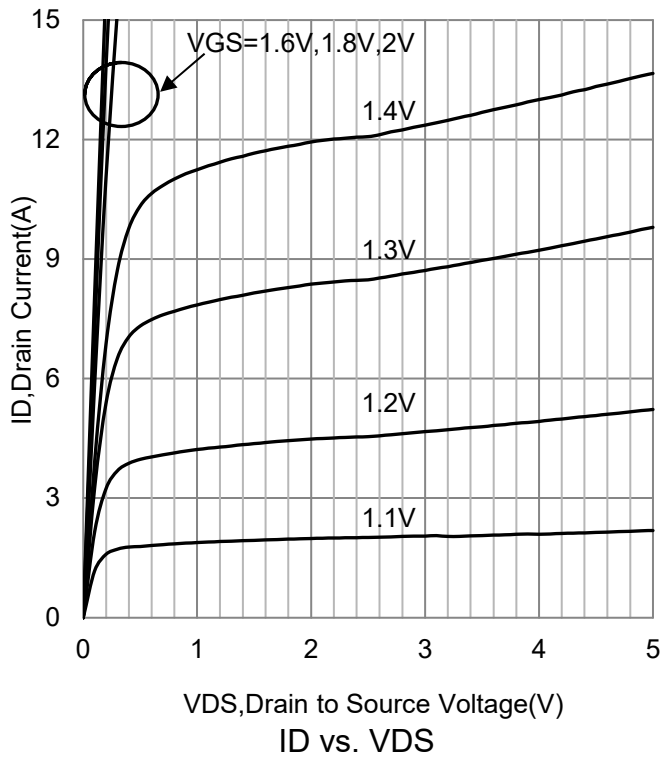
6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Static					
Drain-Source Breakdown Voltage (VGS = 0V , ID = 250 uA)	V(BR)DSS	20	-	-	V
Gate-Source Threshold Voltage (VDS =VGS , ID =250μA)	VGS(th)	0.4	-	2.5	V
Gate-Body Leakage (VDS =0V, VGS =±8V)	IGSS	-	-	±100	nA
Zero Gate Voltage Drain Current (VDS = 16 V, VGS = 0 V) (VDS = 16 V, VGS = 0 V, TJ = 55°C)	IDSS	-	-	1 10	μA
Drain-Source On-Resistance(Note 3) (VGS = 4.5 V, ID = 10 A) (VGS = 2.5 V, ID = 8 A)	RDS(ON)	-	-	10.5 12.5	mΩ
Diode Forward Voltage(Note 3) (IS = 1.4 A, VGS = 0 V)	VSD	-	0.74	-	V
DYNAMIC(Note 4)					
Total Gate Charge	(VDS = 10 V, VGS = 4.5 V, ID = 10 A)	Qg	-	22	nC
Gate-Source Charge		Qgs	-	1.9	
Gate-Drain Charge		Qgd	-	6	
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 1 MHz)	Ciss	-	1779	pF
Output Capacitance		Coss	-	166	
Reverse Transfer Capacitance		Crss	-	160	
Turn-On Delay Time	(VDS = 10 V, RL = 1Ω ,ID = 10 A, VGEN = 4.5 V, RGEN = 6Ω)	td(on)	-	25	ns
Turn-On Rise Time		tr	-	77	
Turn-Off Delay Time		td(off)	-	195	
Turn-Off Fall Time		tf	-	101	

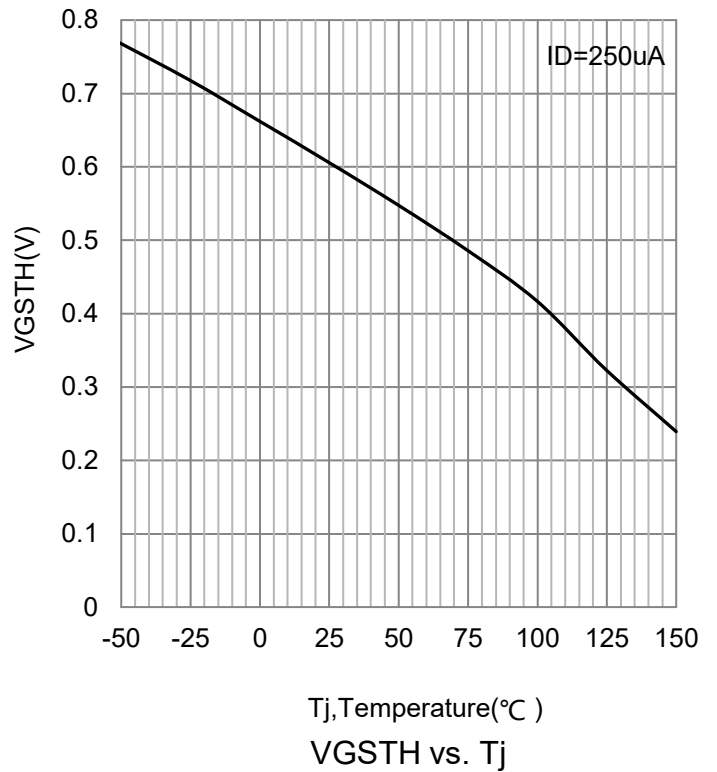
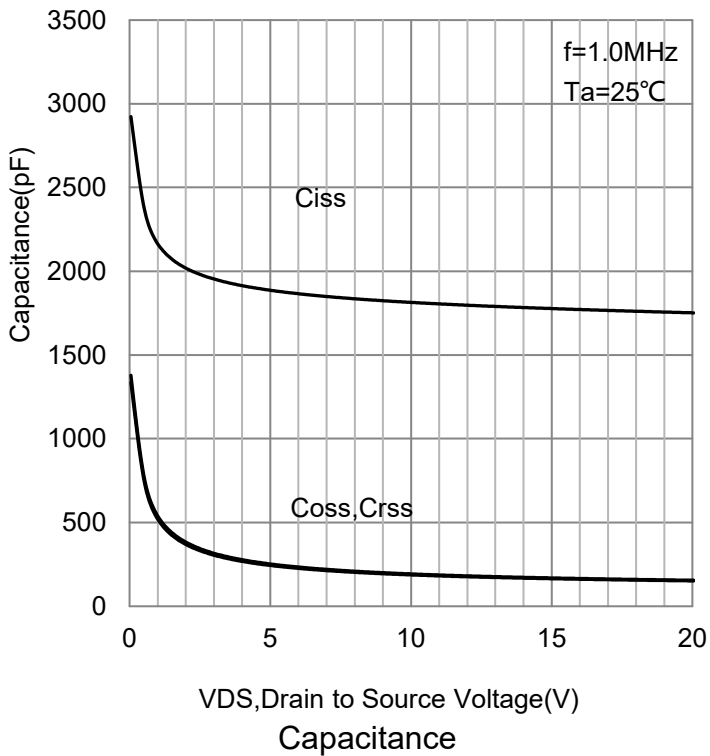
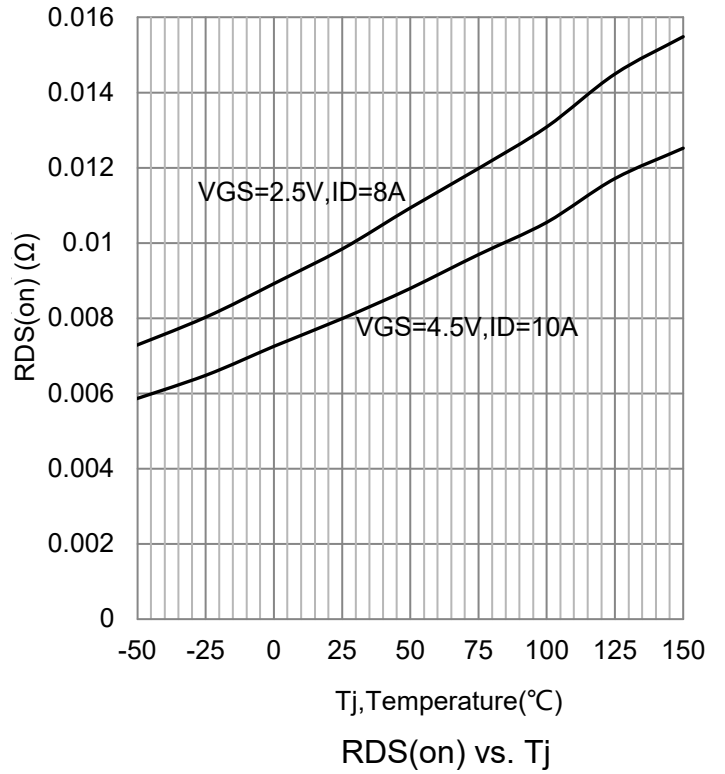
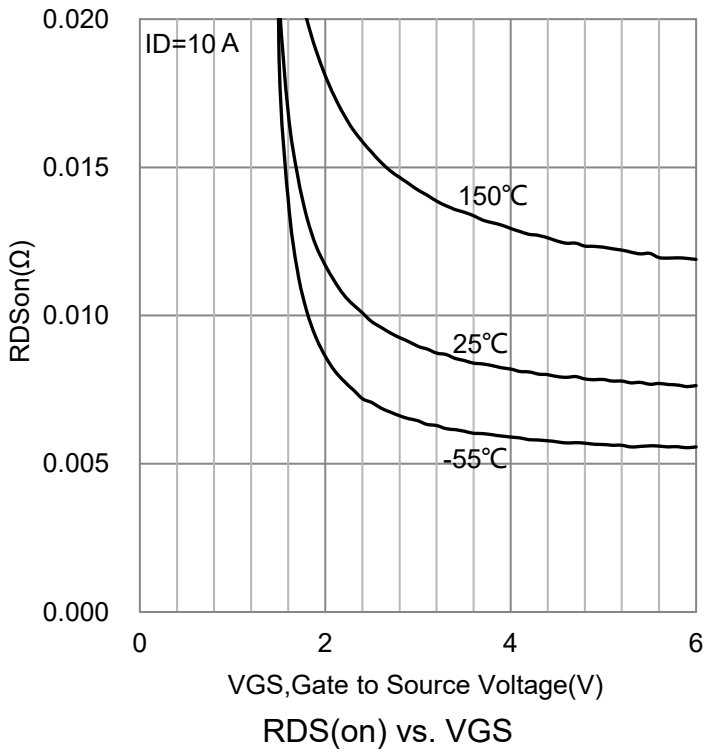
3. Pulse test; pulse width ≤ 300μs, duty cycle ≤ 2%.

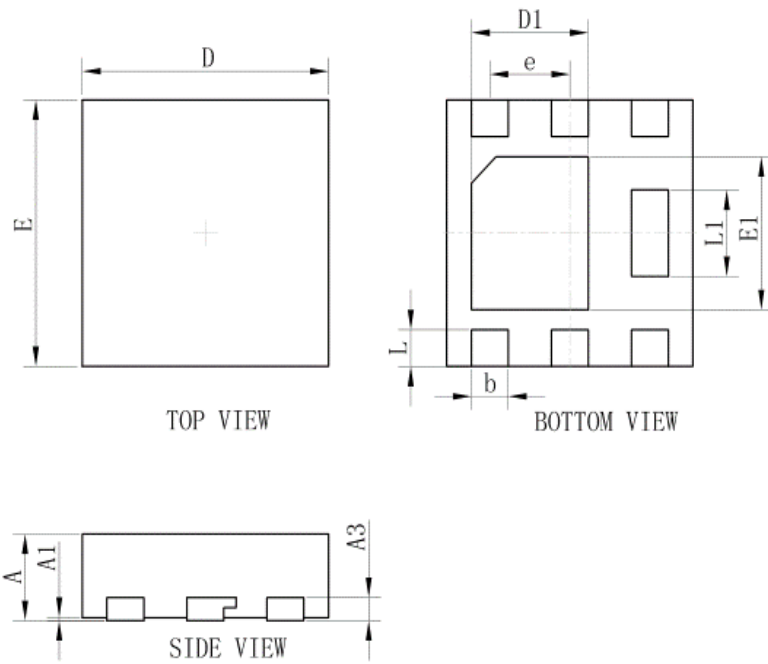
4. Guaranteed by design, not subject to production testing.



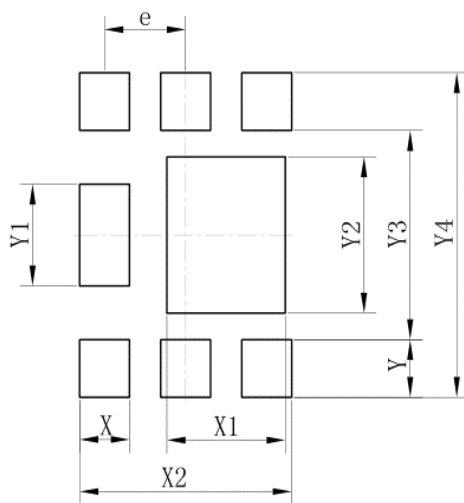
7. ELECTRICAL CHARACTERISTICS CURVES


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

