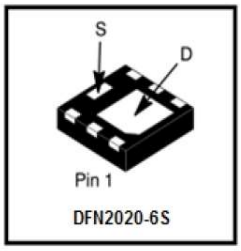
P3418D

30V P-Channel (D-S) MOSFET

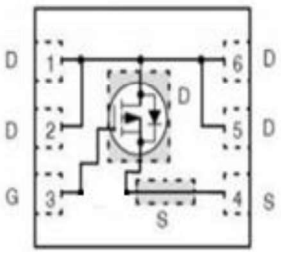
1. FEATURES

- VDS = -30V
  RDS(ON)≤25mΩ ,VGS@-10V,IDS@-7.3A
  RDS(ON)≤38mΩ,VGS@-4.5V,IDS@-5.9A
- 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.



2. APPLICATIONS

- Load Switches
- DC/DC Conversion
- Motor Drives



3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
P3418D	3B1	4000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25ºC)

Parameter		Symbol	Limits	Unit
Drain-Source Voltage		VDS	-30	V
Gate-Source Voltage		VGS	± 20	
Continuous Drain Current(Note 1)		ID	-9.4	A
Pulsed Drain Current(Note 2)		IDM	-40	
Maximum Power Dissipation(Note 1)	TA = 25℃	PD	3.1	W
	TA = 70℃		2	
Operating Junction and Storage Temperature Range		TJ , Tstg	-50~+150	℃
Continuous Source Current (Diode Conduction)(Note 1)		IS	3.8	A

Note: 1. Surface Mounted on 1” x 1” FR4 Board.
2. Pulse width limited by maximum junction temperature.

5. THERMAL CHARACTERISTICS

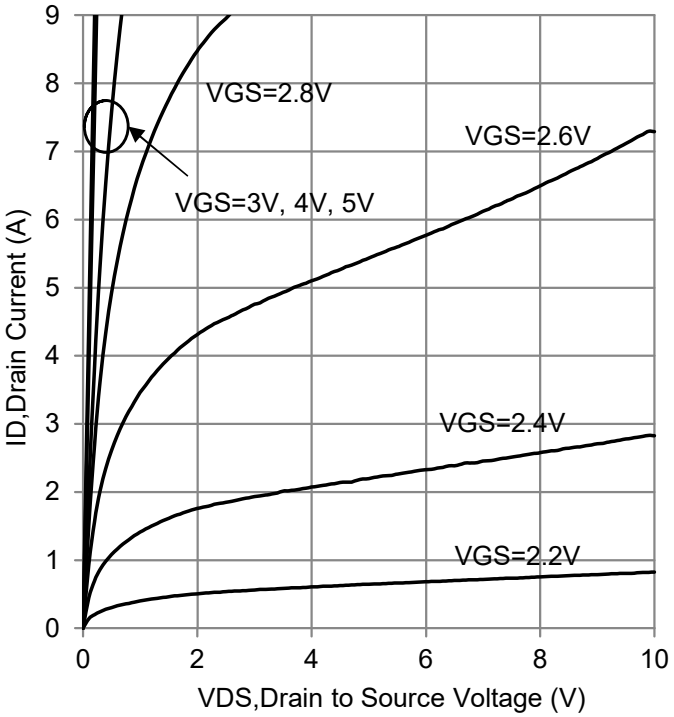
Parameter		Symbol	Max	Unit
Maximum Junction-to-Ambient (Note 1)	t≤10S	RθJA	40	ºC/W
	Steady State		90	

6. ELECTRICAL CHARACTERISTICS (Ta= 25ºC)

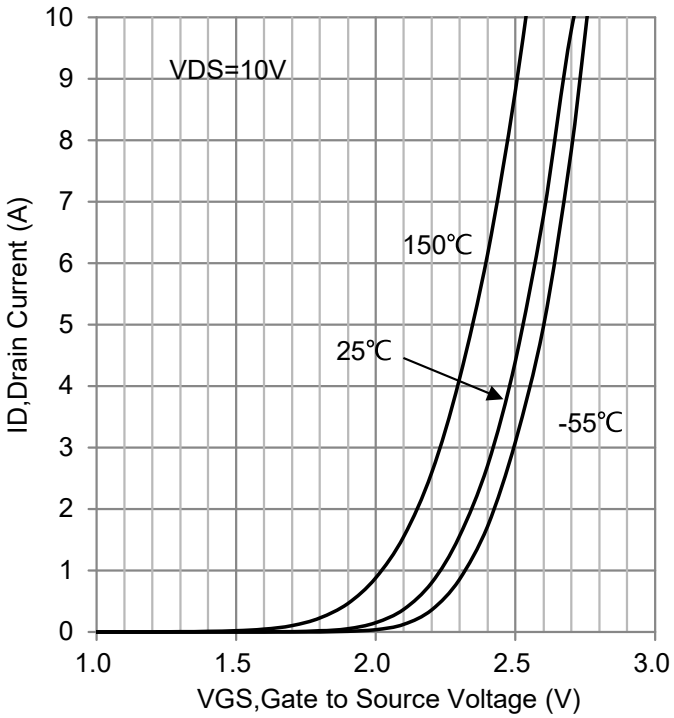
Characteristic		Symbol	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage (VGS =0V, ID =-250μA)		V(BR)DSS	-30	-	-	V
Gate Threshold Voltage (VDS =VGS , ID =-250μA)		VGS(th)	-1	-	-3	V
Gate Leakage Current (VDS =0V, VGS =±20V)		IGSS	-	-	±100	nA
Zero Gate Voltage Drain Current (VDS =-24V, VGS =0V)		IDSS	-	-	-1	μA
On-State Drain Current(Note 3) (VDS = -5 V, VGS = -10 V)		ID(on)	-14	-	-	A
Drain-Source On-Resistance (VGS =-10V, ID = -7.3A)		RDS(ON) (Note 3)	-	-	25	mΩ
Drain-Source On-Resistance (VGS =-4.5V, ID = -5.9A)			-	-	38	
Diode Forward Voltage(Note 3) (IS =-1A, VGS =0V)		VSD	-	-	-1.5	V
Forward Transconductance(Note 3) (VDS = -15 V, ID = -7.3 A)		gfs	-	10	-	S
DYNAMIC(Note 4)						
Total Gate Charge	(VDS = -15 V, VGS = -4.5 V, ID = -7.3 A)	Qg	-	11.2	-	nC
Gate-Source Charge		Qgs	-	2.8	-	
Gate-Drain Charge		Qgd	-	4.2	-	
Input Capacitance	(VDS = -15 V, VGS = 0 V, f = 1 MHz)	Ciss	-	1370	-	pF
Output Capacitance		Coss	-	133	-	
Reverse Transfer Capacitance		Crss	-	112	-	
Turn-On Delay Time	(VDS = -15 V, RL =2.1 Ω,ID = -7.3 A,VGEN = -10 V,RGEN = 6 Ω)	td(on)	-	6	-	ns
Turn-On Rise Time		tr	-	5	-	
Turn-Off Delay Time		td(off)	-	55	-	
Turn-Off Fall Time		tf	-	21	-	

Note: 3. Pulse test; pulse width≤ 300us, duty cycle≤ 2%.
4. Guaranteed by design, not subject to production testing.

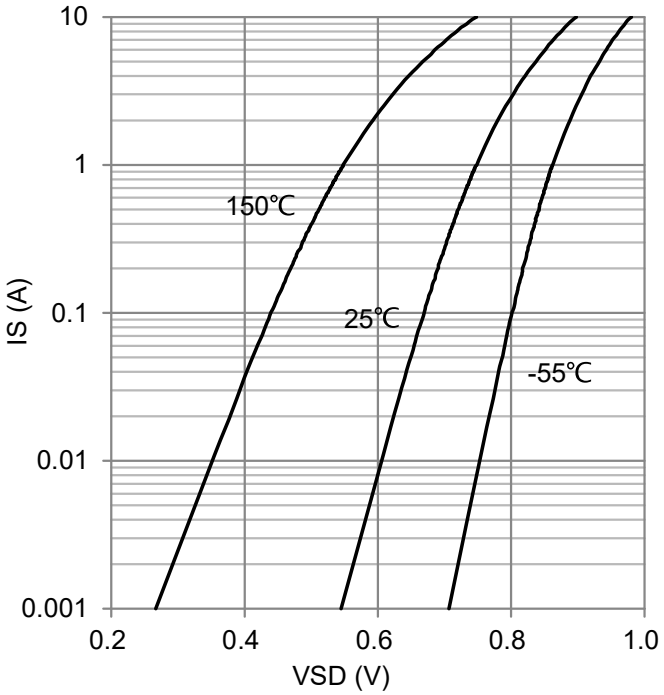
7. ELECTRICAL CHARACTERISTICS CURVES



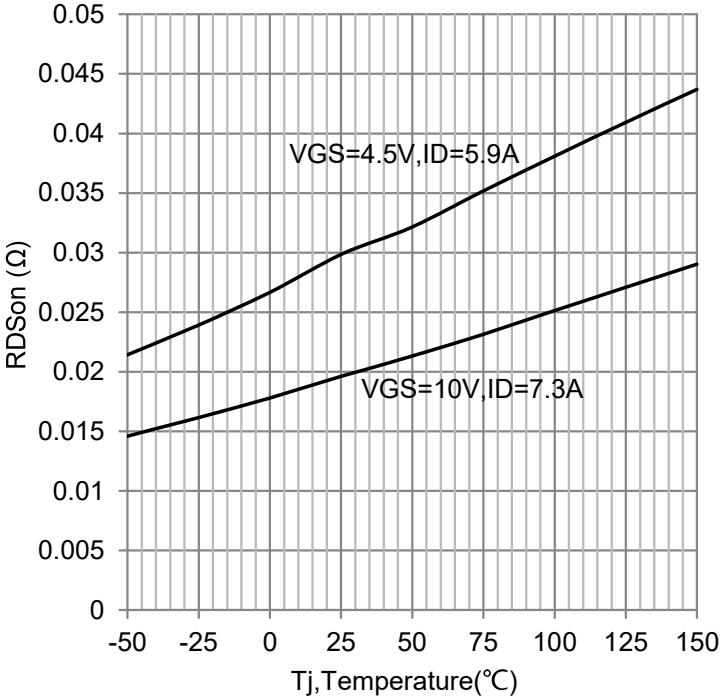
ID vs.VDS



ID vs.VGS

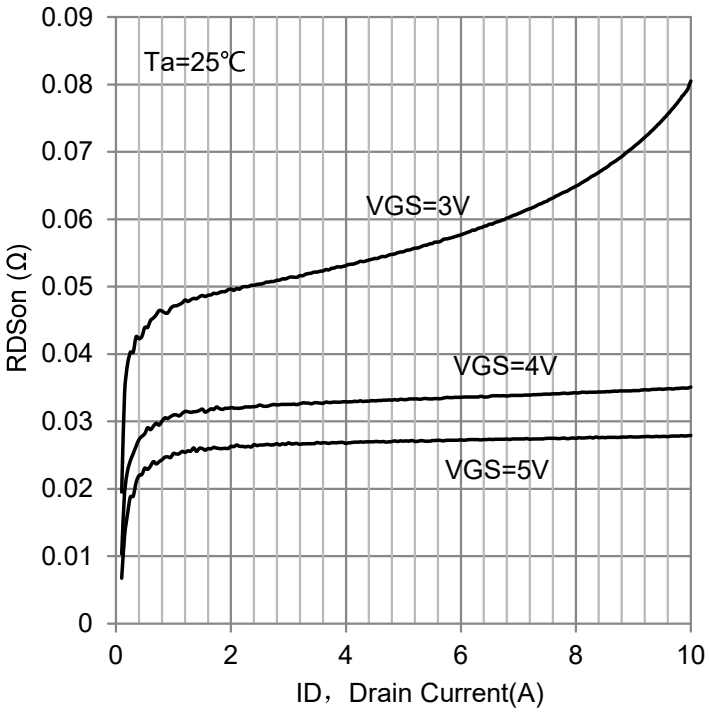


IS vs.VSD

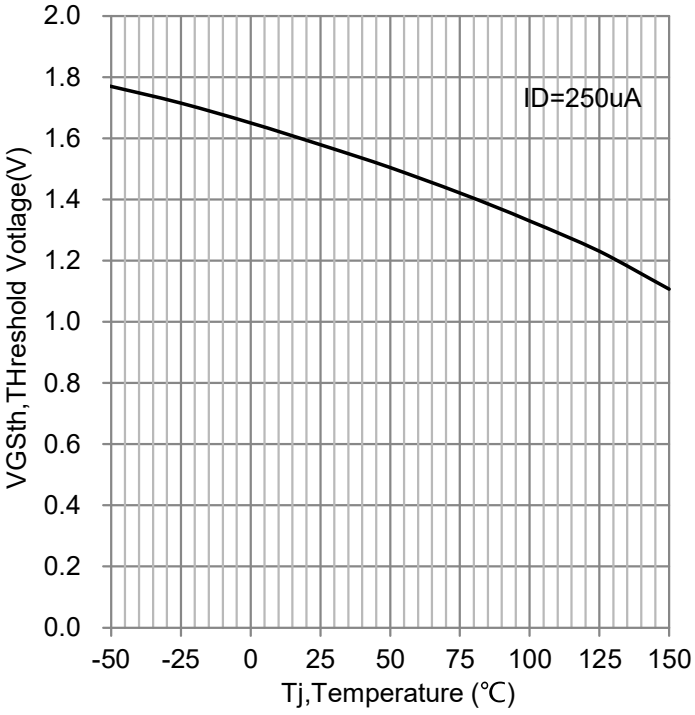


RDSON vs.TJ

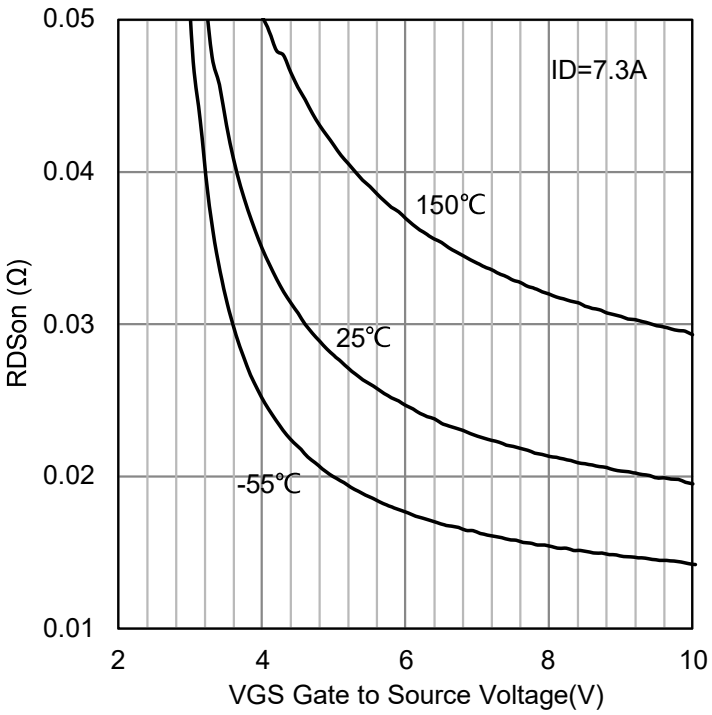
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



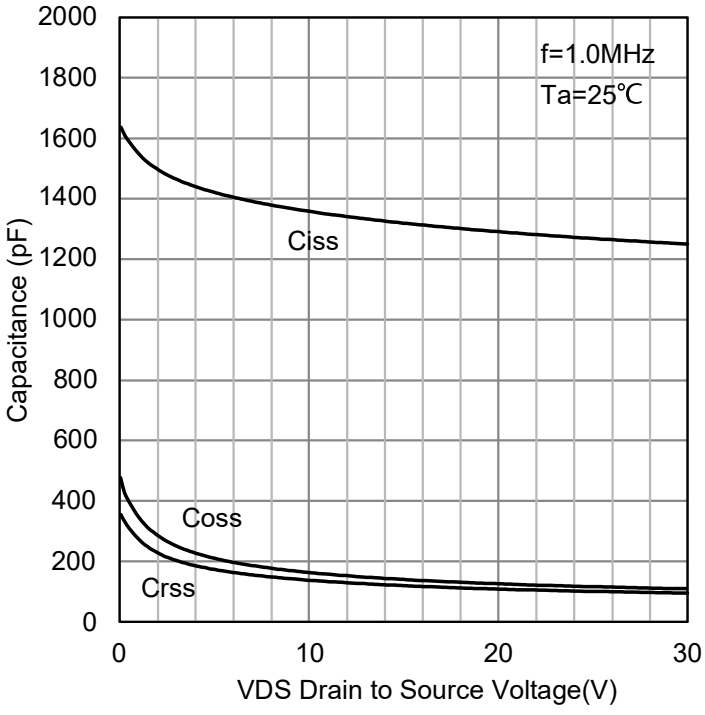
RDSon vs.ID



VGSth vs.Tj

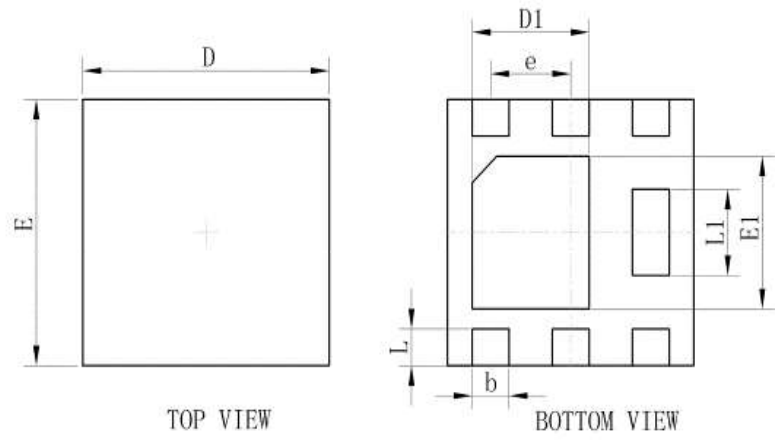


RDS(on) vs. VGS



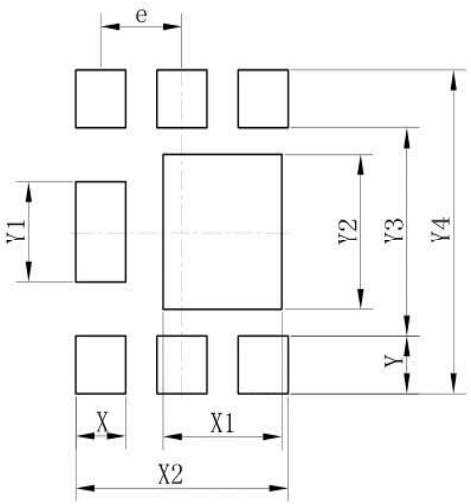
Capacitance

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