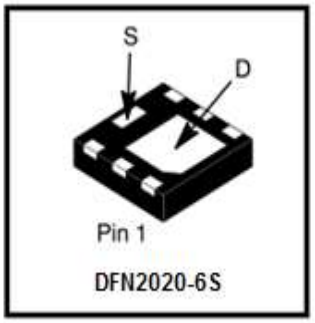
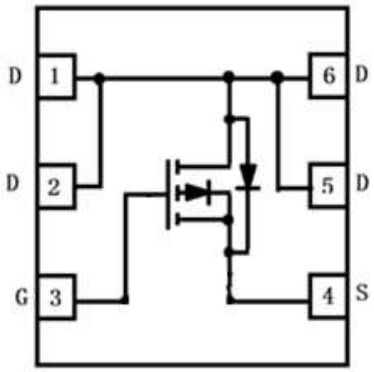
P2317D

20V P-Channel (D-S) MOSFET



1. FEATURES

- VDS = -20V
  RDS(ON)≤26mΩ,VGS@-4.5V,IDS@-7A
  RDS(ON)≤36mΩ,VGS@-2.5V,IDS@-5.6A
- 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

- Load Switches
- DC/DC Conversion
- Motor Drives

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
P2317D	L1	4000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25ºC)

Parameter		Symbol	Limits	Unit
Drain-Source Voltage		VDS	-20	V
Gate-Source Voltage		VGS	± 8	
Continuous Drain Current (Note1)		ID	-8.8	A
Pulsed Drain Current (Note2)		IDM	-40	
Continuous Source Current (Diode Conduction) (Note1)		IS	-5	
Power Dissipation (Note1)	TA = 25℃	PD	3	W
	TA = 70℃		1.9	
Operating Junction and Storage Temperature Range		TJ , Tstg	-55~+150	℃
Maximum Junction-to-Ambient (Note1)	t ≤10 sec	RqJA	40	℃/W
	Steady State		90	

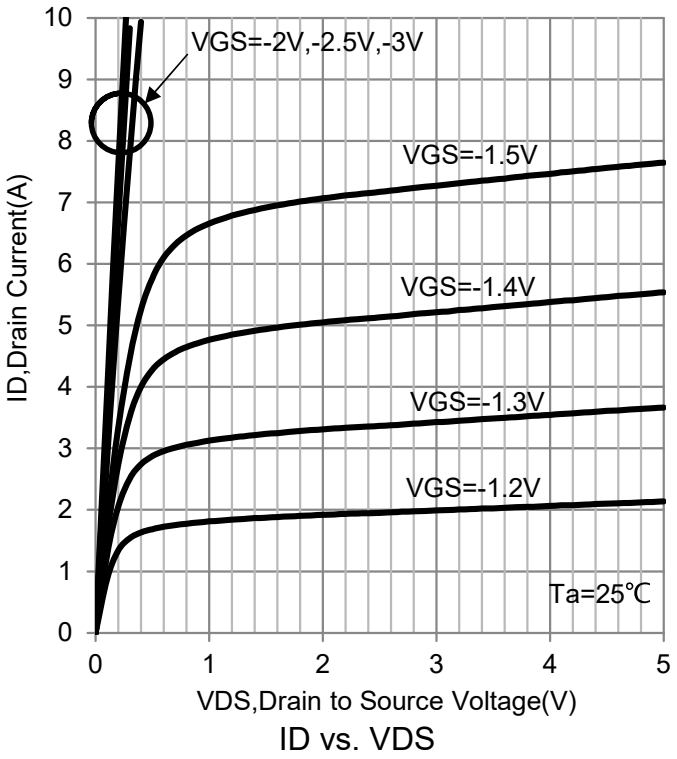
Note: 1. Surface Mounted on 1” x 1” FR4 Board.
2. Pulse width limited by maximum junction temperature

5. ELECTRICAL CHARACTERISTICS (Ta= 25ºC)

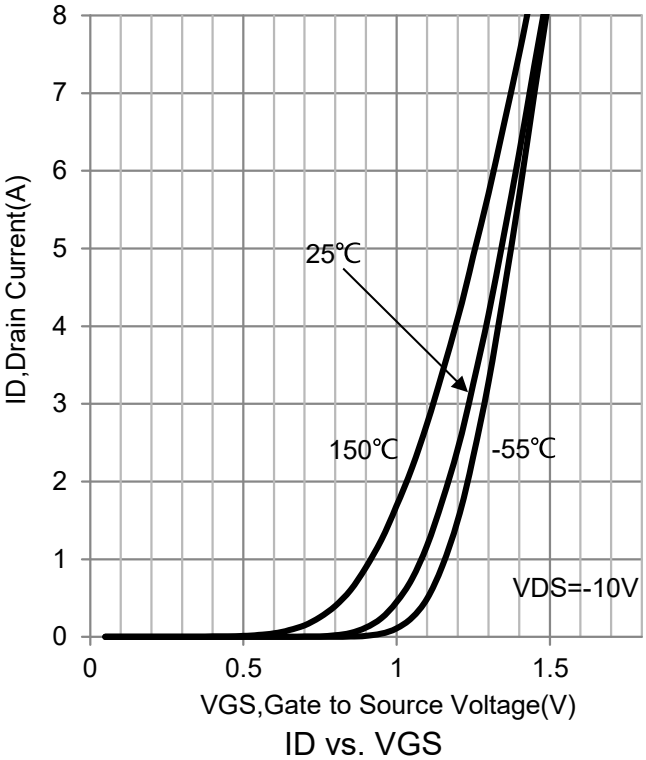
Characteristic		Symbol	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage (VGS = 0V, ID =-250uA)		V(BR)DSS	-20	-	-	V
Gate Threshold Voltage (VDS =VGS , ID =-250μA)		VGS(th)	-0.4	-	-1.2	V
Gate Leakage Current (VDS =0V, VGS =±8V)		IGSS	-	-	±100	nA
Zero Gate Voltage Drain Current (VDS =-16V, VGS =0V)		IDSS	-	-	-1	μA
On-State Drain Current (Note 3) (VDS = -5 V, VGS = -4.5 V)		ID(on)	-12	-	-	A
Drain-Source On-Resistance (VGS = -4.5 V; ID = -7 A)		RDS(ON) (Note 3)	-	-	26	mΩ
Drain-Source On-Resistance (VGS = -2.5 V; ID = -5.6 A)			-	-	36	
Diode Forward Voltage (Note 3) (IS =-2.5 A, VGS =0V)		VSD	-	-	-1.3	V
Forward Transconductance (Note 3) (VDS = -15 V, ID = -7 A)		gfs	-	8	-	S
Dynamic (Note 4)						
Total Gate Charge	(VDS = -10 V, VGS = -4.5 V,ID = -7 A)	Qg	-	30	-	nC
Gate-Source Charge		Qgs	-	4	-	
Gate-Drain Charge		Qgd	-	6	-	
Turn-On Delay Time	(VDS = -10 V, RL = 1.4 Ω,ID = -7 A,VGEN = -4.5 V, RGEN = 6 Ω)	td(on)	-	6	-	ns
Rise Time		tr	-	12	-	
Turn-Off Delay Time		td(off)	-	85	-	
Fall Time		tf	-	35	-	
Input Capacitance	(VDS = -15 V, VGS = 0 V, f = 1 MHz)	Ciss	-	1435	-	pF
Output Capacitance		Coss	-	126	-	
Reverse Transfer Capacitance		Crss	-	113	-	

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

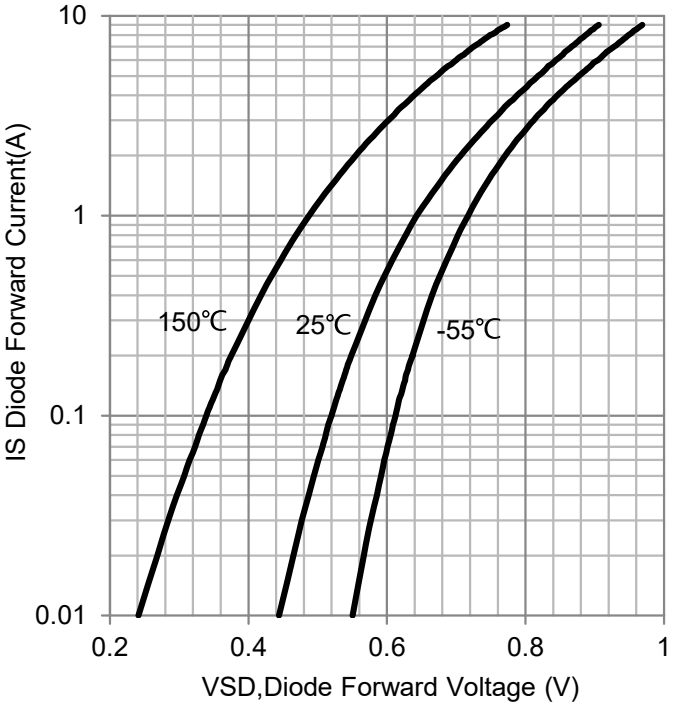
6.ELECTRICAL CHARACTERISTICS CURVES



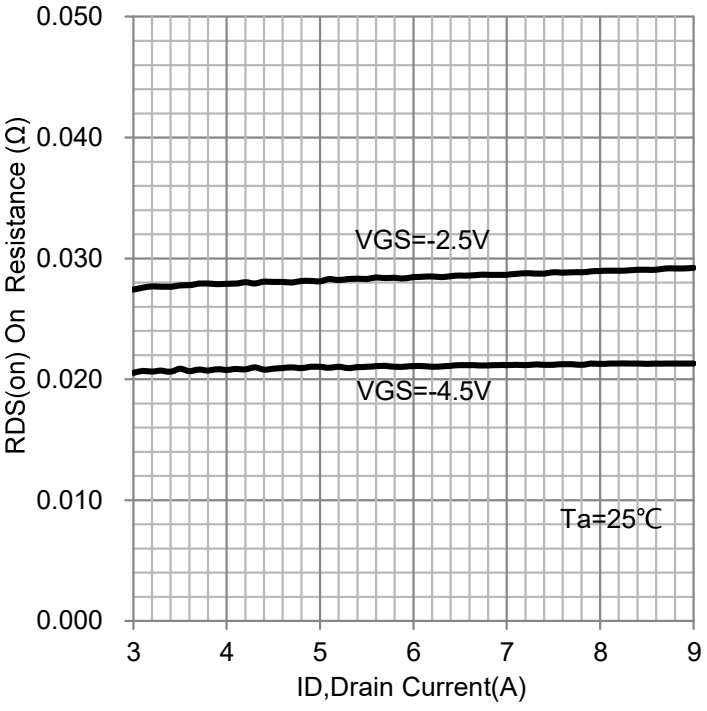
ID vs. VDS



ID vs. VGS

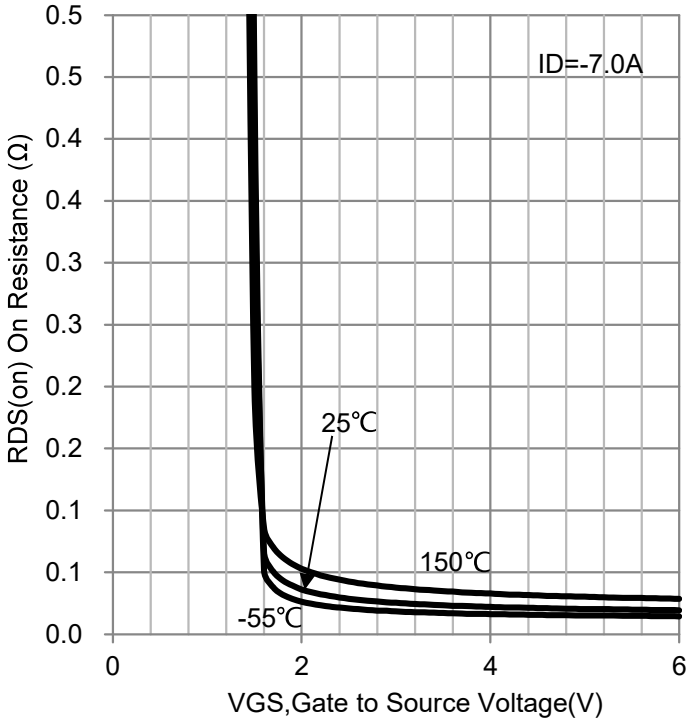


IS vs. VSD

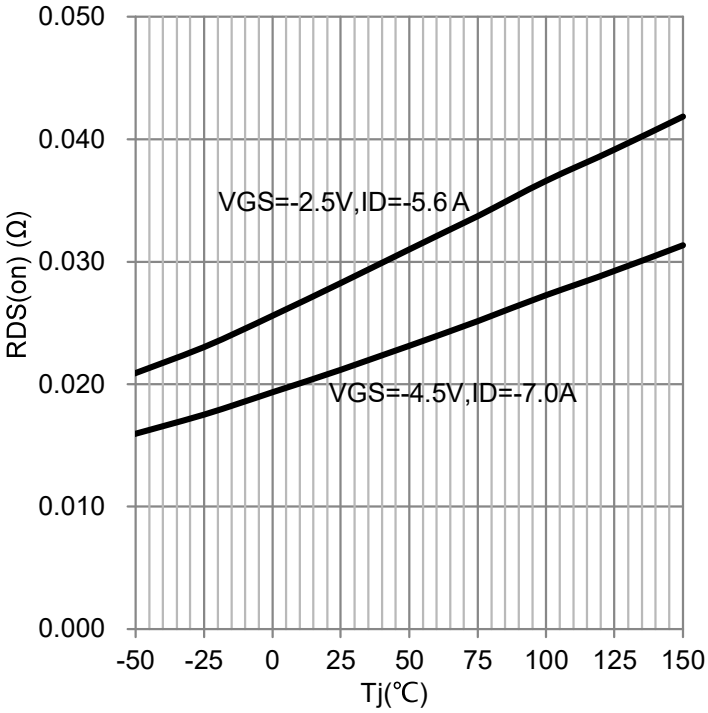


RDS(on) vs. ID

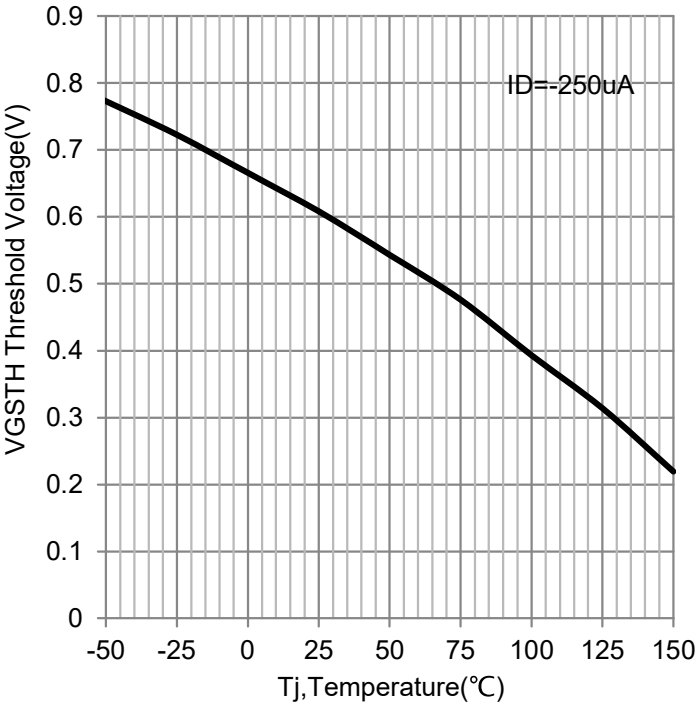
6.ELECTRICAL CHARACTERISTICS CURVES(Con.)



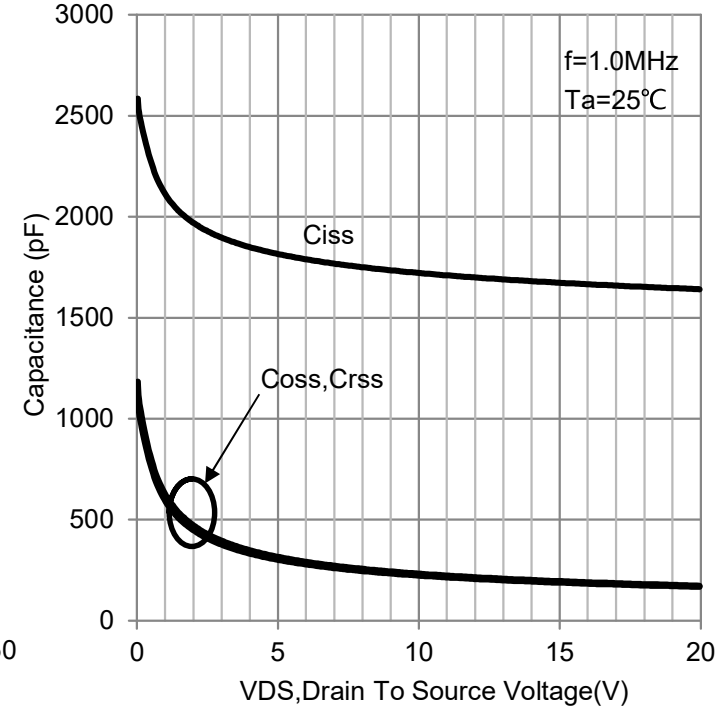
RDS(on) vs. VGS



RDS(on) vs. Tj

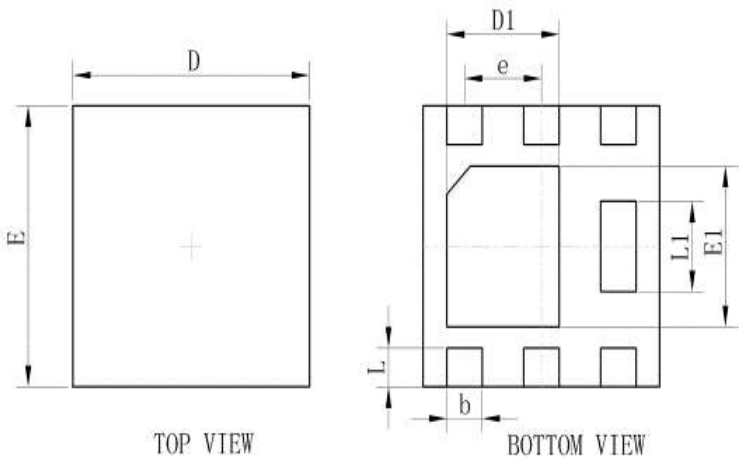


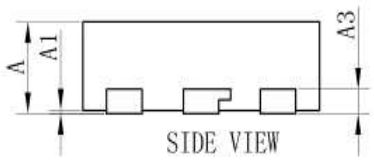
VGSTH vs. Tj



Capacitance

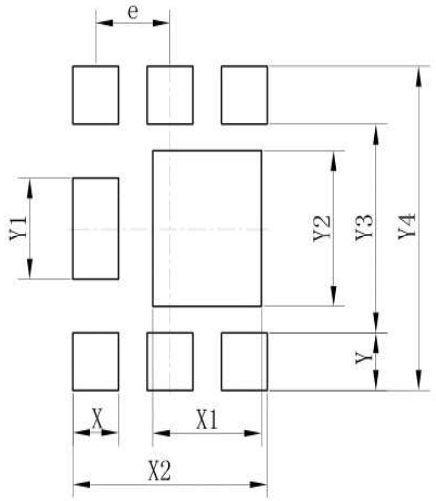
7.OUTLINE AND DIMENSIONS





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			

8 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