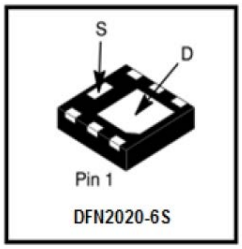
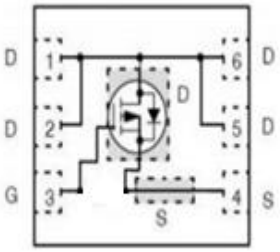
P2707D

20V P-Channel Enhancement-Mode MOSFET



1. FEATURES

- VDS =-20V
- RDS(ON)≤70mΩ,VGS@-4.5V,IDS@-4.7A
- RDS(ON)≤110mΩ,VGS@-2.5V,IDS@-1.0A
- 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
- ESD Rating of Class 0 (<100V) per Human Body Model

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
P2707D	1E	4000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25ºC)

Parameter		Symbol	Limits	Unit
Drain–Source Voltage		VDSS	-20	V
Gate–to–Source Voltage – Continuous		VGS	±12	V
Continuous Drain Current		ID	-7	A
Pulsed Drain Current(Note1)		IDM	-25	A
Maximum Power Dissipation	TA = 25°C	PD	1.9	W
	TA = 75°C		0.7	
Operating and Storage Temperature Range		TJ , Tstg	–55~+150	℃
Thermal Resistance-Junction to Ambient (Note2)		RθJA	70	°C/W

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

5. ELECTRICAL CHARACTERISTICS (Ta= 25ºC)

STATIC

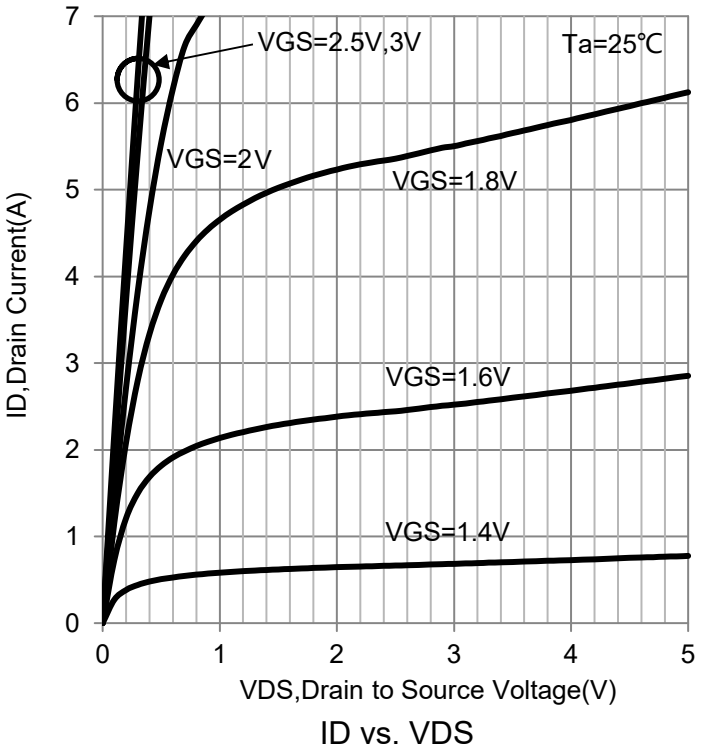
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain–Source Breakdown Voltage (VGS = 0, ID = -250μA)	VBRDSS	-20	-	-	V
Zero Gate Voltage Drain Current (VDS =-20V, VGS =0V)	IDSS	-	-	-1	μA
Gate−to−Source Leakage Current (VDS = 0 V, VGS = ±12 V)	IGSS	-	-	±100	nA
Gate Threshold Voltage (VGS = VDS , ID =- 250μA)	VGS(th)	-0.6	-0.85	-1.4	V
Static Drain–Source On–State Resistance (VGS = -4.5V, ID =-4.7 A) (VGS = -2.7V, ID =-3.8 A) (VGS = -2.5 V, ID = -1 A)	RDS(on)	- - -	- - -	70 100 110	mΩ
Forward Diode Voltage (VGS = 0 V, ISD = -1.7A)	VSD	-	-	-1.2	V

DYNAMIC

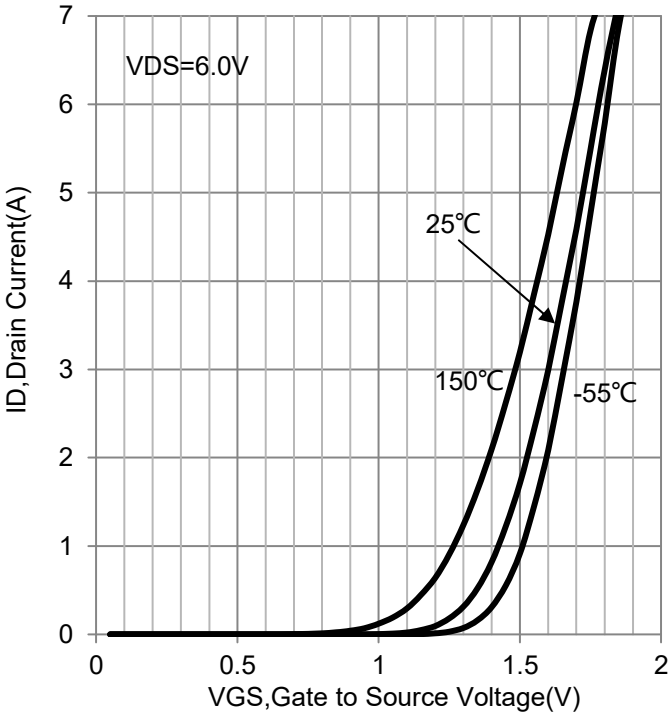
Total Gate Charge Gate−to−Source Gate Charge Gate−to−Drain Charge	(VGS =-10V,VDS = -4.7V, ID = -4.5A)	QG QGS QGD	- - -	16 0.9 2.7	24 - -	nC
Turn−On Delay Time Rise Time Turn−Off Delay Time Fall Time	(VDD = -10V, RL =10Ω ,ID = −1A, VGEN = -4.5V,RG = 6Ω)	td(on) tr td(off) tf	- - - -	16 35 70 25	25 55 95 40	ns
Input Capacitance Output Capacitance Reverse Transfer Capacitance	(VGS=0V,VDS= -10V,f=200kHz)	Ciss Coss Crss	- - -	797.3 88.5 74.8	- - -	pF
Forward Transconductance (VDS = -10 V, ID = -4.7 A)		gFS	-	8	-	S

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

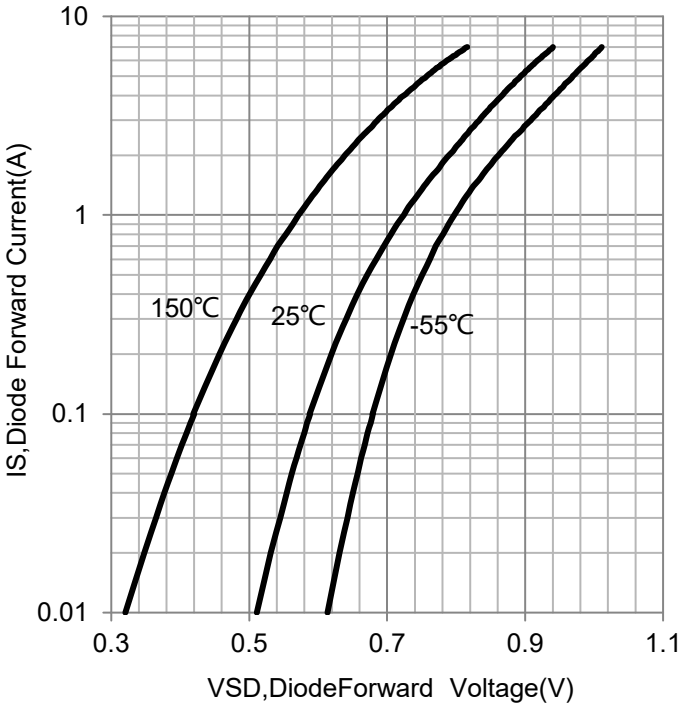
6. ELECTRICAL CHARACTERISTICS CURVES



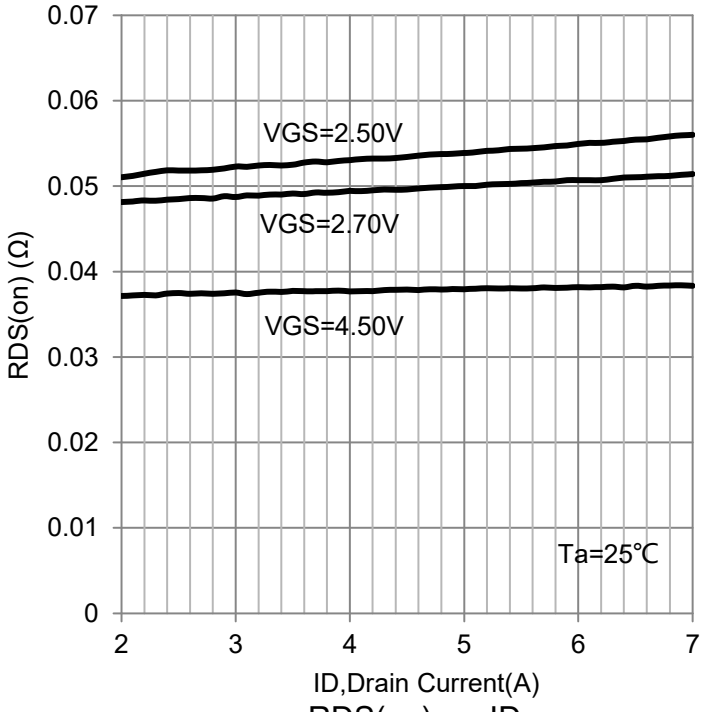
ID vs. VDS



ID vs. VGS

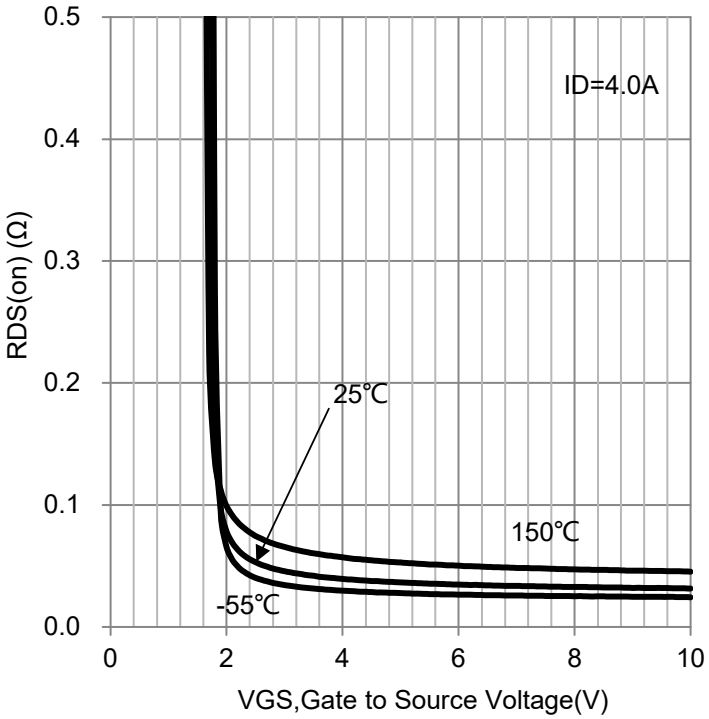


IS vs. VSD

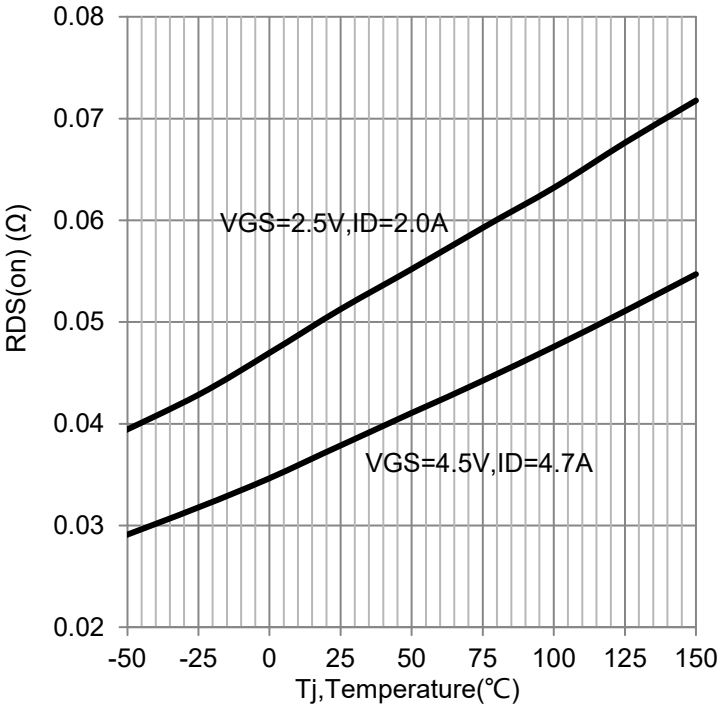


RDS(on) vs. ID

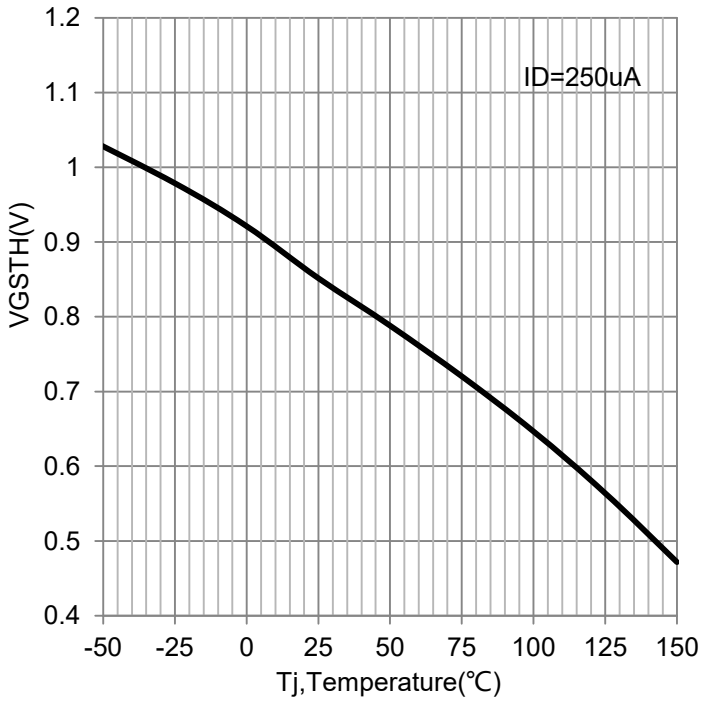
6. ELECTRICAL CHARACTERISTICS CURVES(Con.)



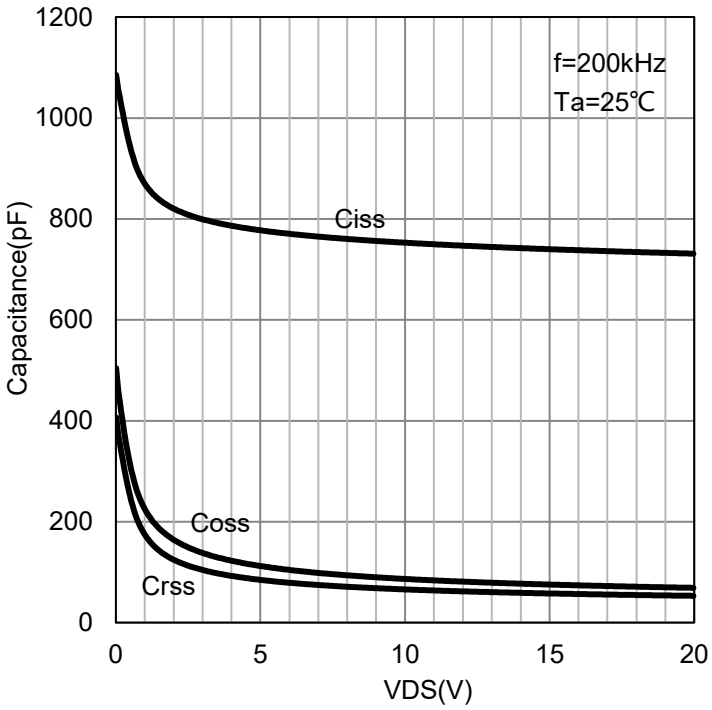
RDS(on) vs. VGS



RDS(on) vs. Tj

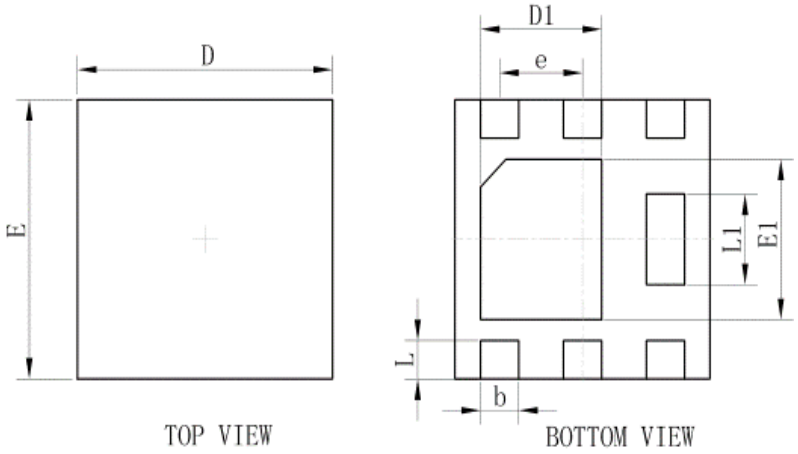


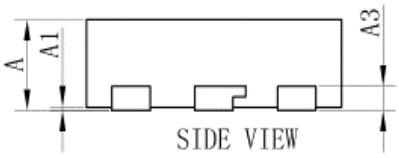
VGSTH vs. Tj



Capacitance

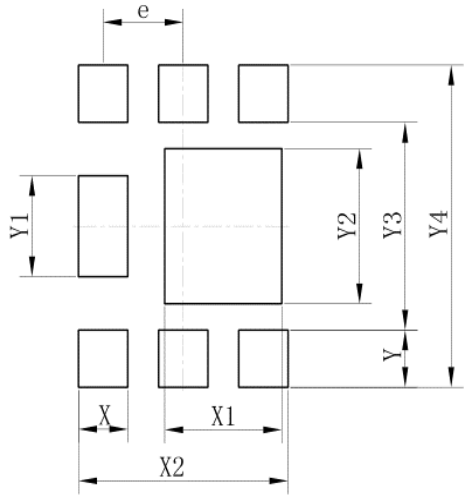
7.OUTLINE AND DIMENSIONS





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