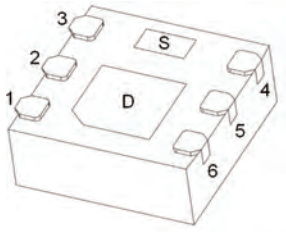
20V P-Channel MOSFET

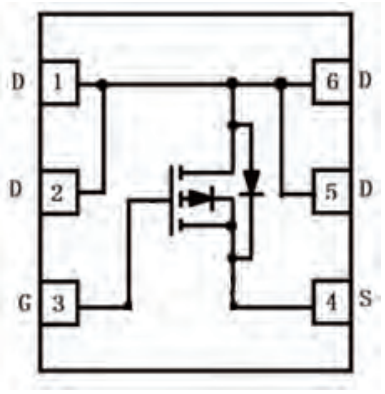
DFN 2×2-6L-J



1. DRAIN
2. DRAIN
3. GATE
4. SOURCE
5. DRAIN
6. DRAIN

1. FEATURES

- VDS = -20V
  RDS(ON)≤ 26m ,VGS@-4.5V,IDS@-7A
  RDS(ON)≤ 34m ,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.



2. APPLICATIONS

- Load Switches
- DC/DC Conversion
- Motor Drives

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
FTK2317DFN22	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	

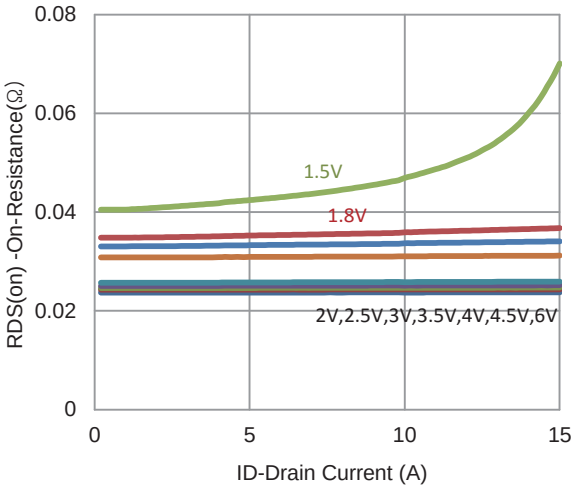
Note: 1. Surface Mounted on 1” x 1” FR4 Board.
2. Pulse width limited by maximum junction temperature

5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

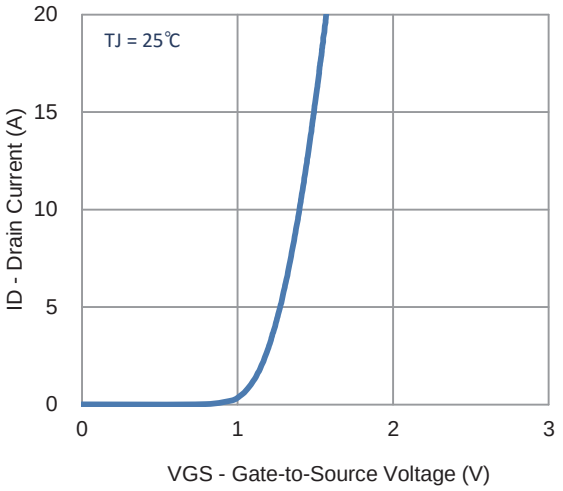
Characteristic		Symbol	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage (VGS = 0V, ID =-250uA)		V(BR)DSS	-20	-	-	V
Gate Threshold Voltage (VDS =VGS , ID = - 250μA)		VGS(th)	-0.4	-	-	V
Gate Leakage Current (VDS =0V, VGS =±8V)		IGSS	-	-	±100	nA
Zero Gate Voltage Drain Current (VDS =-16V, 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	m
Drain-Source On-Resistance (VGS = -2.5 V; ID = -5.6 A)			-	-	34	
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 ,ID = -7 A,VGEN = -4.5 V, RGEN = 6)	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.

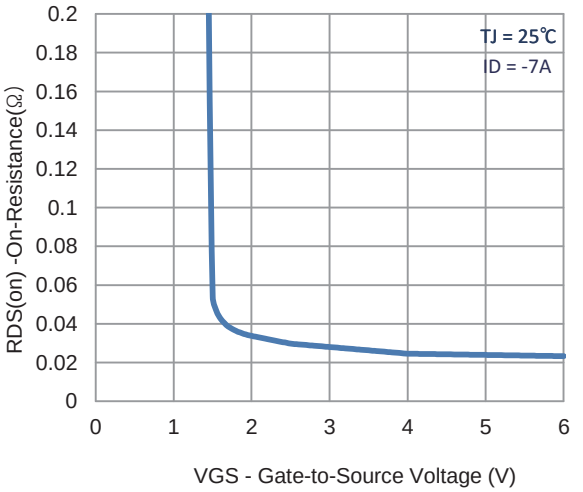
6.ELECTRICAL CHARACTERISTICS CURVES



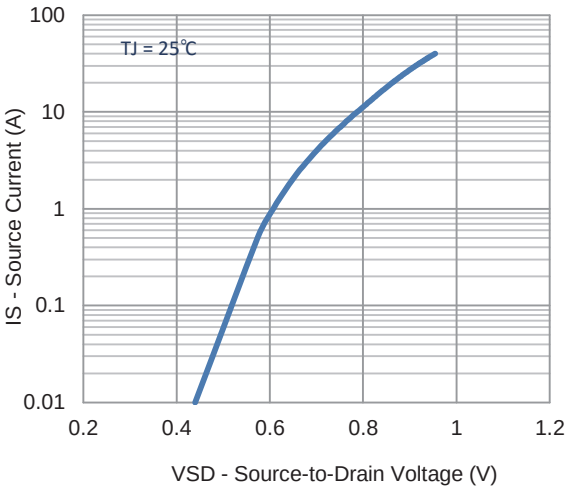
1. On-Resistance vs. Drain Current



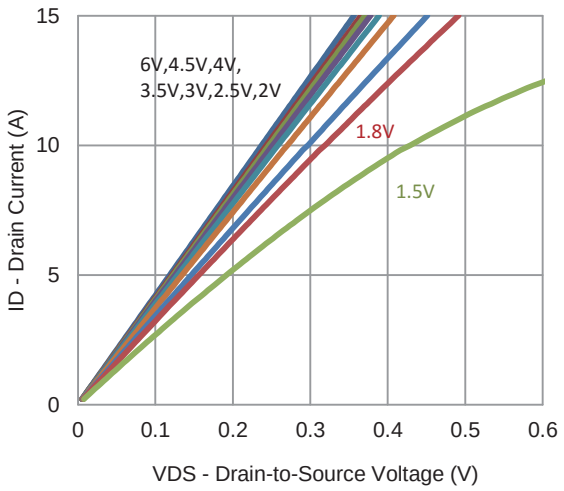
2. Transfer Characteristics



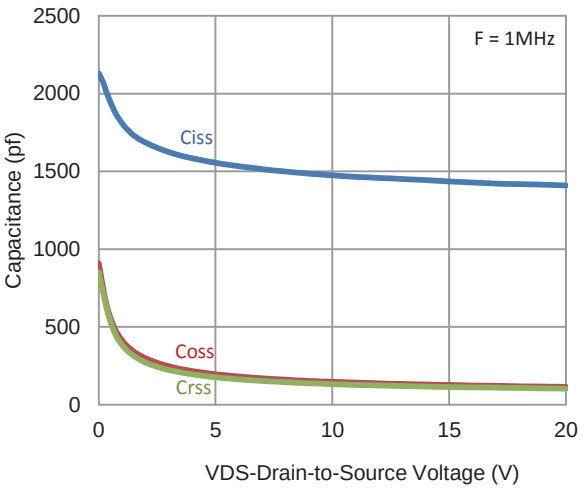
3. On-Resistance vs. Gate-to-Source Voltage



4. Drain-to-Source Forward Voltage

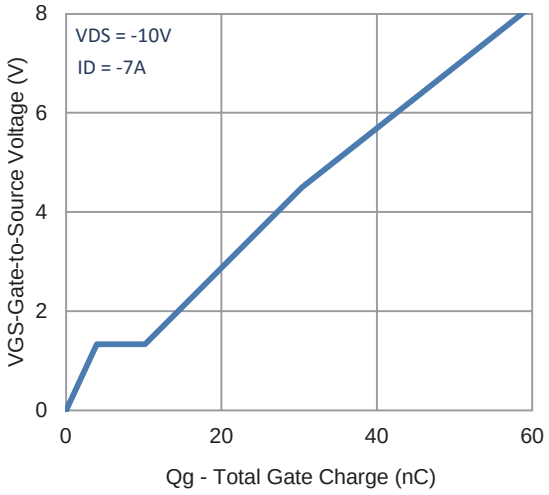


5. Output Characteristics

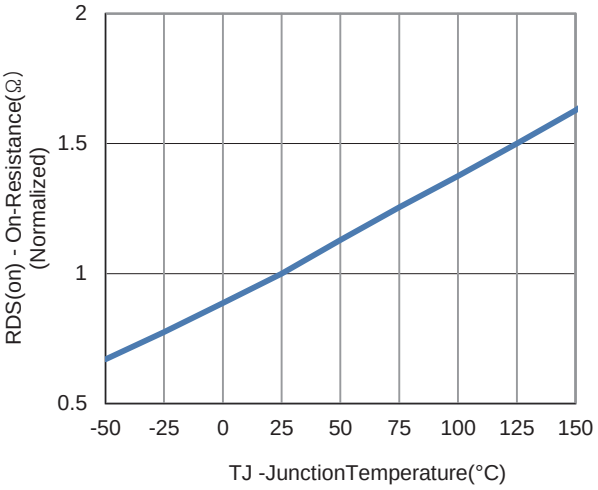


6. Capacitance

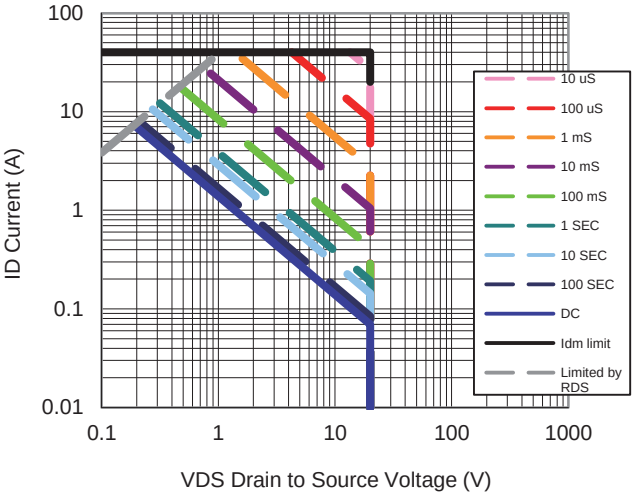
6.ELECTRICAL CHARACTERISTICS CURVES(Con.)



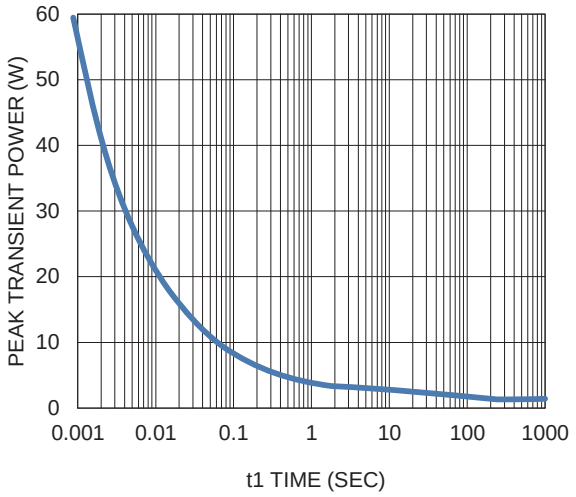
7. Gate Charge



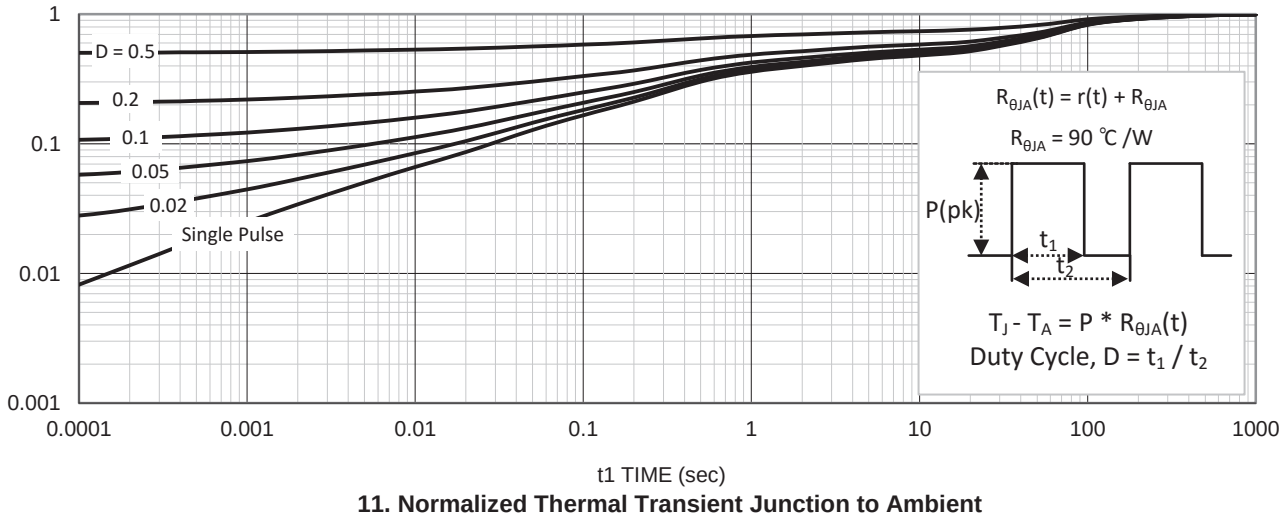
8. Normalized On-Resistance Vs Junction Temperature



9. Safe Operating Area

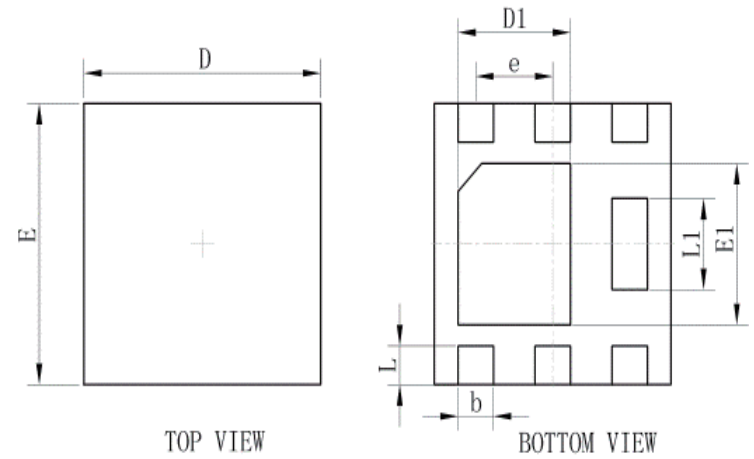


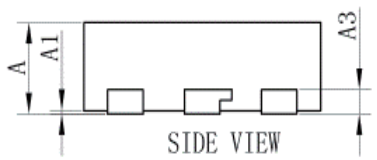
10. Single Pulse Maximum Power Dissipation



11. Normalized Thermal Transient Junction to Ambient

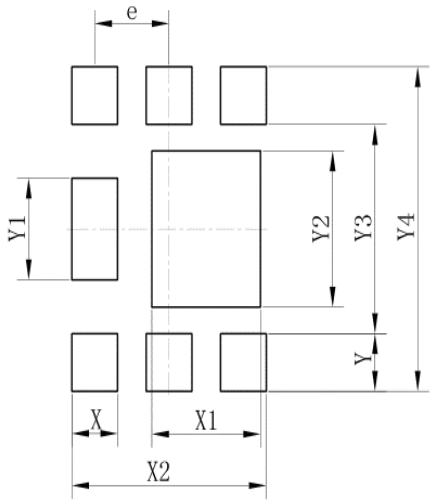
7.OUTLINE AND DIMENSIONS





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