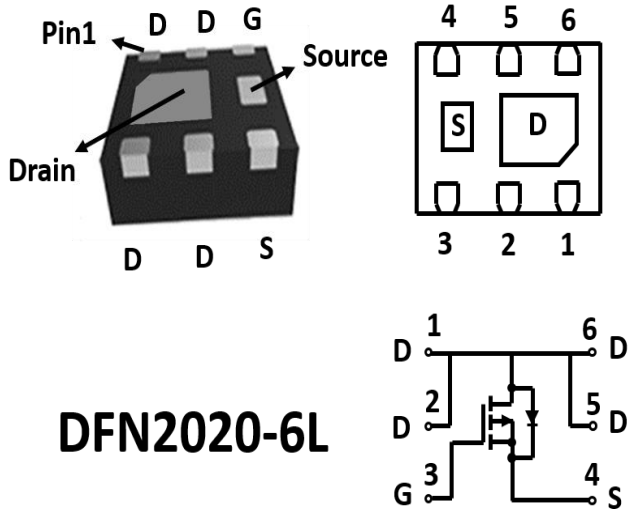


## P-Channel Enhancement Mode Field Effect Transistor



### Product Summary

- $V_{DS}$  -16V
- $I_D$  -8A
- $R_{DS(ON)}$  (at  $V_{GS}=-4.5V$ ) <25 mohm
- $R_{DS(ON)}$  (at  $V_{GS}=-2.5V$ ) <32 mohm
- $R_{DS(ON)}$  (at  $V_{GS}=-1.8V$ ) <52 mohm

### General Description

- Trench Power LV MOSFET technology
- Low  $R_{DS(ON)}$
- Low Gate Charge

### Applications

- Battery charge
- Load switching in Cellular handset
- Ultraportable applications

### ■ Absolute Maximum Ratings ( $T_A=25^\circ C$ unless otherwise noted)

Parameter	Symbol	Maximum	Unit
Drain-source Voltage	$V_{DS}$	-16	V
Gate-source Voltage	$V_{GS}$	$\pm 10$	V
Drain Current	$I_D$	$T_A=25^\circ C$	-8
		$T_A=70^\circ C$	-6.4
Pulsed Drain Current <sup>A</sup>	$I_{DM}$	-32	A
Total Power Dissipation @ $T_A=25^\circ C$	$P_D$	2.5	W
Thermal Resistance Junction-to-Ambient <sup>B</sup>	$R_{\theta JA}$	50	°C/W
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	15	
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~+150	°C

### ■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJQ4666C	F2	..G66C	3000	15000	60000	7" reel



# YJQ4666C

## ■ Electrical Characteristics ( $T_J=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-16			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-16V, V_{GS}=0V, T_C=25^\circ\text{C}$			-1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 10V, V_{DS}=0V$			$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.4	-0.62	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-8A$		20	25	m $\Omega$
		$V_{GS}=-2.5V, I_D=-5.6A$		26	32	
		$V_{GS}=-1.8V, I_D=-2A$		35	52	
Diode Forward Voltage	$V_{SD}$	$I_S=-8A, V_{GS}=0V$		-0.7	-1	V
Maximum Body-Diode Continuous Current	$I_S$				-8	A
<b>Dynamic Parameters</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=-10V, V_{GS}=0V, f=1\text{MHz}$		990		pF
Output Capacitance	$C_{oss}$			168		
Reverse Transfer Capacitance	$C_{rss}$			107		
<b>Switching Parameters</b>						
Total Gate Charge	$Q_g$	$V_{GS}=-4.5V, V_{DS}=-10V, I_D=-8A$		8.6		nC
Gate Source Charge	$Q_{gs}$			1.6		
Gate Drain Charge	$Q_{gd}$			2.2		
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=-4.5V, V_{DD}=-10V, I_D=-1A, R_{GEN}=2.5\Omega$		12		ns
Turn-on Rise Time	$t_r$			54		
Turn-off Delay Time	$t_{D(off)}$			15		
Turn-off Fall Time	$t_f$			9		

A. Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty cycle  $\leq 2\%$ .

B.  $R_{\theta JA}$  is the sum of the junction-to-case and case-to-ambient thermal resistance, where the case thermal reference is defined as the solder mounting surface of the drain pins.  $R_{\theta JC}$  is guaranteed by design, while  $R_{\theta JA}$  is determined by the board design. The maximum rating presented here is based on mounting on a 1 in 2 pad of 2oz copper.



■ Typical Performance Characteristics

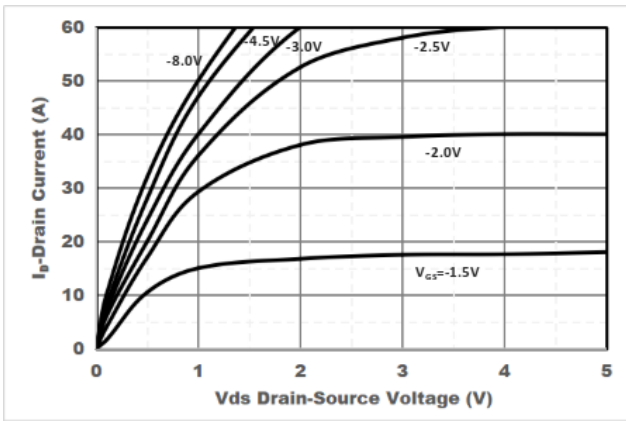


Figure1. Output Characteristics

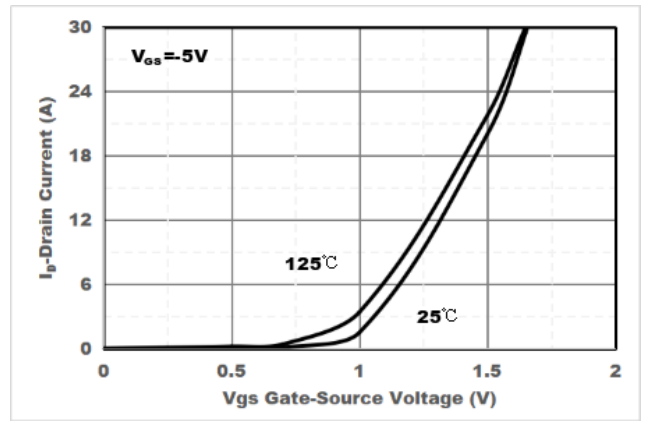


Figure2. Transfer Characteristics

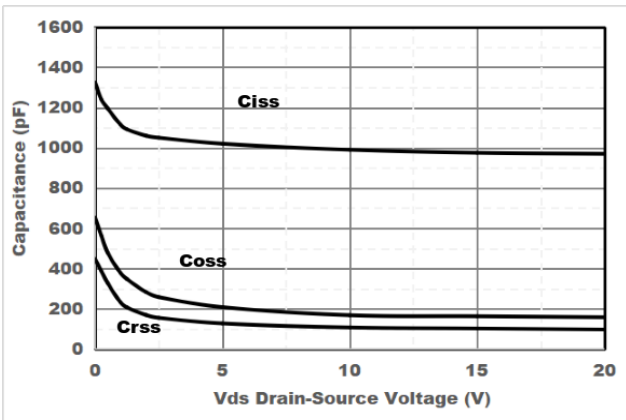


Figure3. Capacitance Characteristics

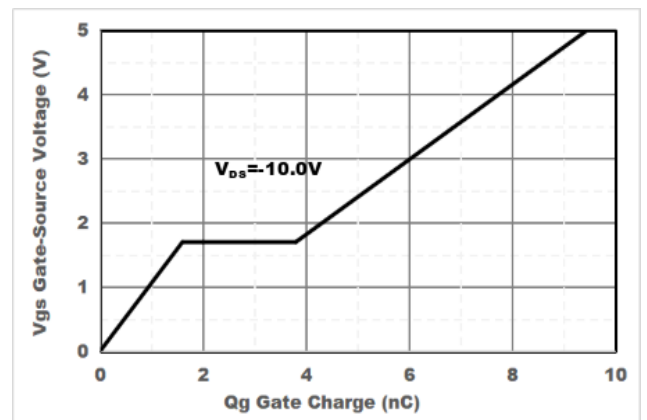


Figure4. Gate Charge

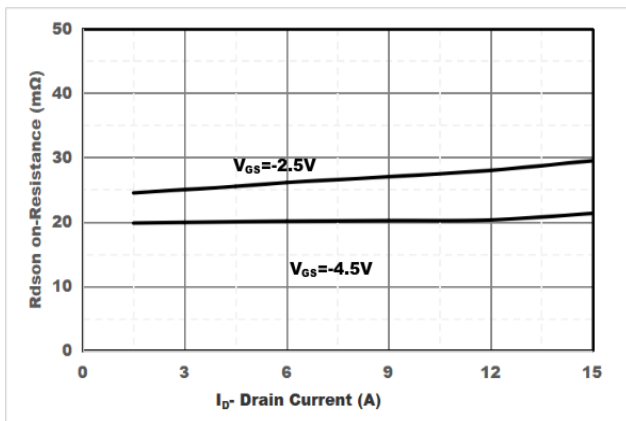


Figure5. Drain-Source on Resistance

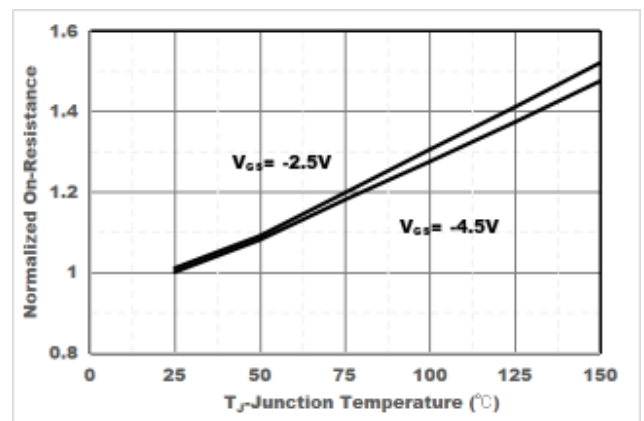


Figure6. Drain-Source on Resistance

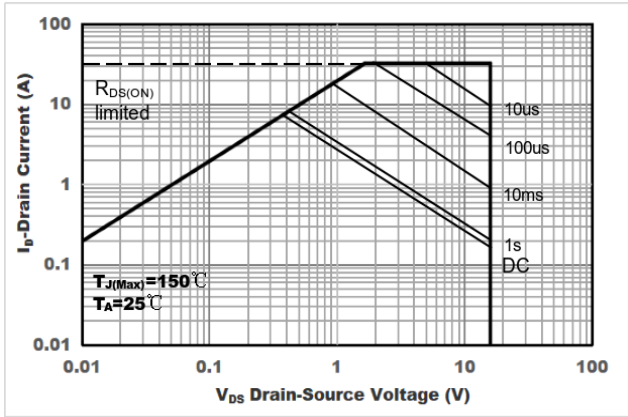


Figure7. Safe Operation Area

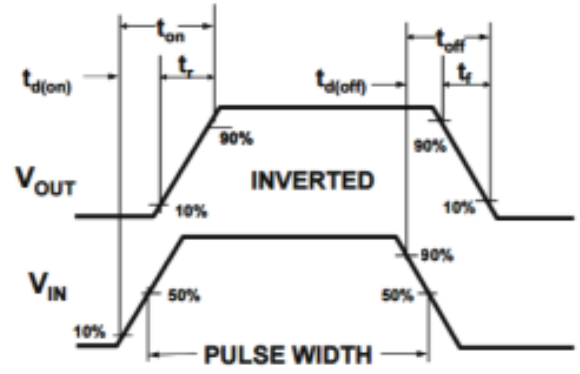
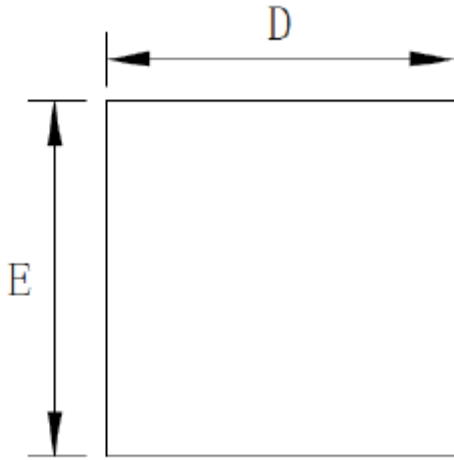
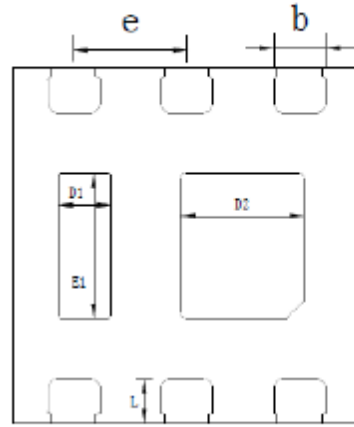


Figure8. Switching wave

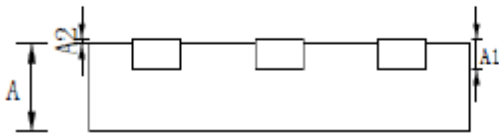
## ■ DFN2020-6L Package information



Top View  
【顶视图】



Bottom View  
【背视图】



Side View  
【侧视图】

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.70	0.75	0.80
A1		0.15REF	
A2	0.00	0.02	0.05
L	0.20	0.25	0.30
b	0.25	0.30	0.35
D	1.95	2.00	2.05
E	1.95	2.00	2.05
e		0.65BSC	
D2	0.61	0.71	0.81
D1	0.20	0.30	0.40
E1	0.71	0.81	0.91

备注: A1/e 不监控



## YJQ4666C

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