

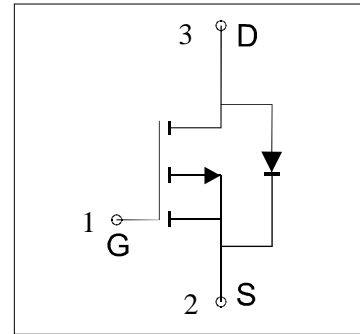
20V P-Channel Enhancement-Mode MOSFET

FEATURES

- $R_{DS(ON)} \leq 110m\Omega$ @ $V_{GS} = -4.5V$
- $R_{DS(ON)} \leq 150m\Omega$ @ $V_{GS} = -2.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$

APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- Load Switch
- DSC
- We declare that the material of product are Halogen Free and compliance with RoHS requirements.



MARKING DIAGRAM



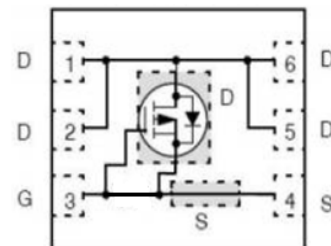
1B = Specific Device Code
M = Date Code
■ = Pb-Free Package

(* Note: Microdot may be in either location)

Ordering Information

Device	Marking	Shipping
FTK2501DFN2020	1B	3000/Tape&Reel

PIN CONNECTIONS



(Top View)

Absolute Maximum Ratings ($T_A = 25^\circ C$ Unless Otherwise Noted)

Parameter	Symbol	Limit	Unit	
Drain-Source Voltage	V_{DSS}	-20	V	
Gate-Source Voltage	V_{GSS}	± 8	V	
Continuous Drain Current ($T_J = 150^\circ C$)*	I_D	$T_A = 25^\circ C$	-2.8	A
		$T_A = 70^\circ C$	-2.0	
Pulsed Drain Current	I_{DM}	-10	A	
Maximum Power Dissipation	P_D	$T_A = 25^\circ C$	0.7	W
		$T_A = 70^\circ C$	0.45	
Operating Junction Temperature	T_J	-55 to 150	$^\circ C$	
Storage Temperature Range	T_{stg}	-55 to 150	$^\circ C$	
Thermal Resistance-Junction to Ambient*	$R_{\theta JA}$	Typical	Maximum	$^\circ C/W$
		100	175	

* The device mounted on $1in^2$ FR4 board with 2 oz copper

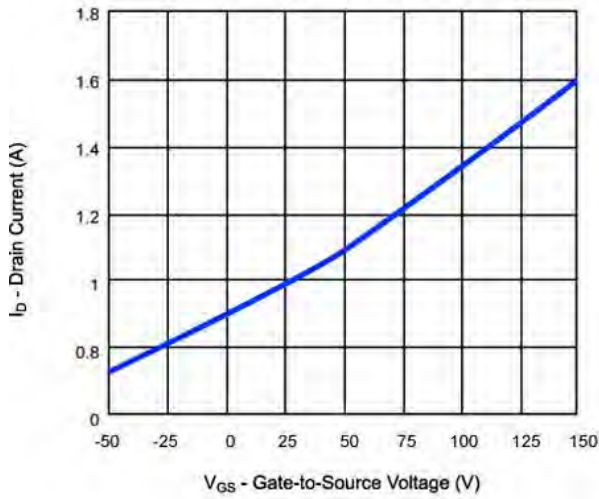
**ELECTRICAL CHARACTERISTICS**

Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-20			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.4	-0.6	-1	V
I_{GSS}	Gate Leakage Current	$V_{DS}=0V, V_{GS}=\pm 8V$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=-20V, V_{GS}=0V$			-1	μA
$R_{DS(ON)}$	Drain-Source On-Resistance ^a	$V_{GS}=-4.5V, I_D=-2.8A$		90	110	m Ω
		$V_{GS}=-2.5V, I_D=-2.0A$		110	150	
V_{SD}	Diode Forward Voltage	$I_S=-1A, V_{GS}=0V$		-0.7	-1.4	V
DYNAMIC						
Q_g	Total Gate Charge	$V_{DS}=-6V, V_{GS}=-4.5V,$ $I_D=-2.8A$		7.2		nC
Q_{gs}	Gate-Source Charge			2.2		
Q_{gd}	Gate-Drain Charge			1.2		
R_g	Gate resistance	$V_{DS}=0V, V_{GS}=0V, f=1MHz$		7.5		Ω
C_{iss}	Input Capacitance	$V_{DS}=-15V, V_{GS}=0V,$ $f=1MHz$		480		pF
C_{oss}	Output Capacitance			46		
C_{rss}	Reverse Transfer Capacitance			10		
$t_{d(on)}$	Turn-On Delay Time	$V_{DS}=-6V, R_L=6\Omega$ $R_{GEN}=6\Omega, V_{GS}=-4.5V$		50		ns
t_r	Turn-On Rise Time			30		
$t_{d(off)}$	Turn-Off Delay Time			40		
t_f	Turn-Off Fall time			11		

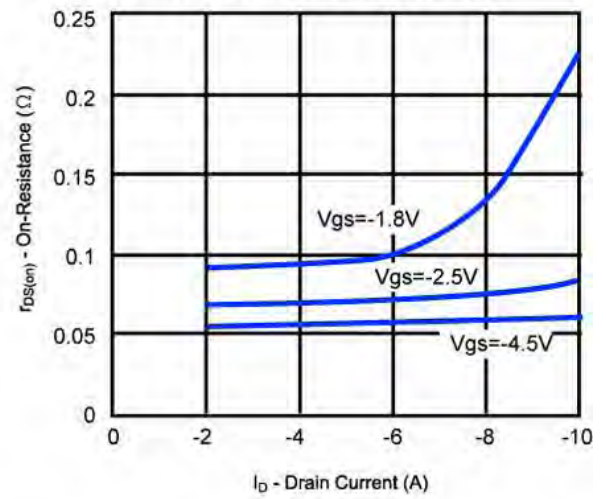
Notes: a. Pulse test; pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$

TYPICAL CHARACTERISTICS

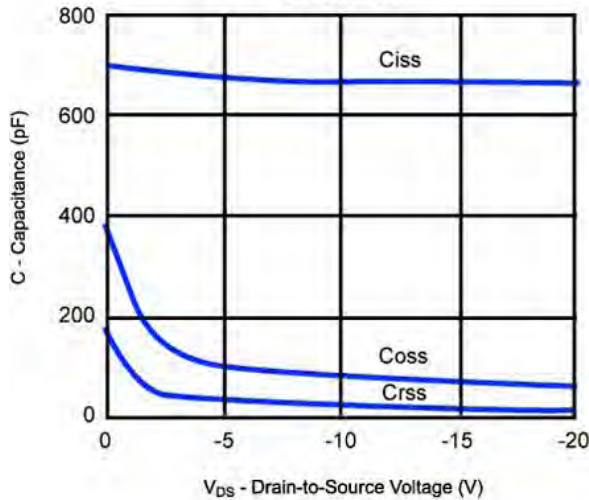
Transfer Characteristics



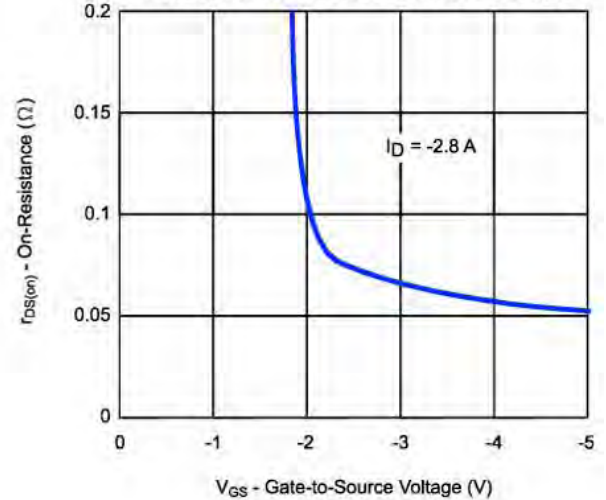
On-Resistance vs. Drain Current



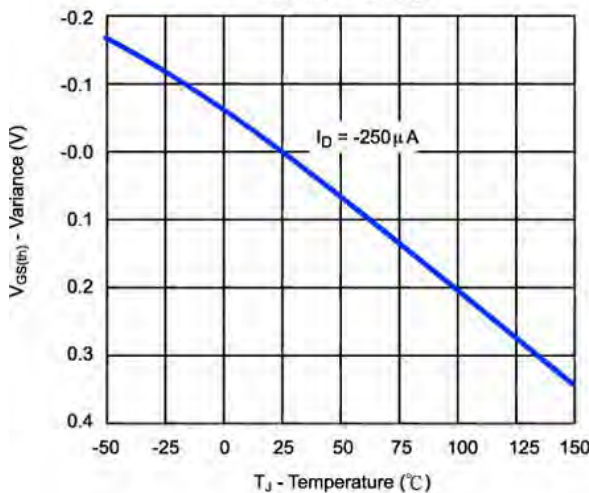
Capacitance



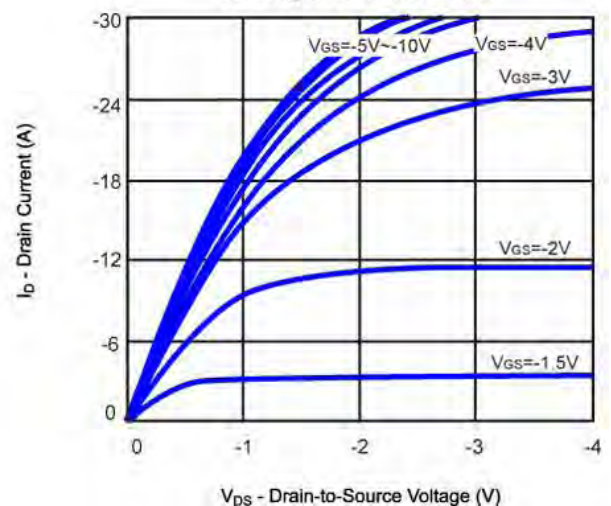
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage

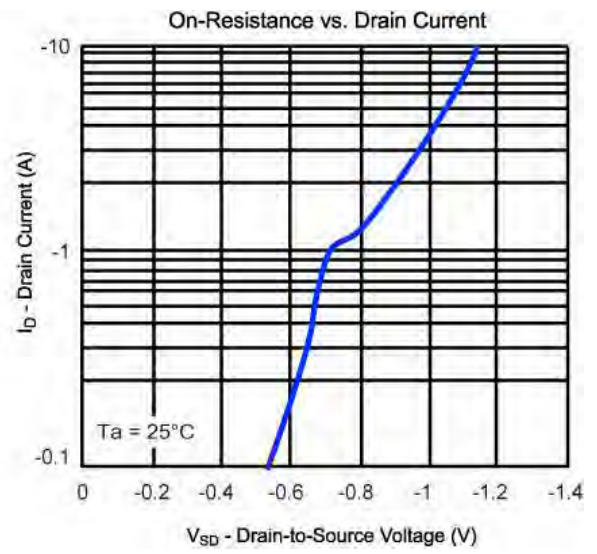
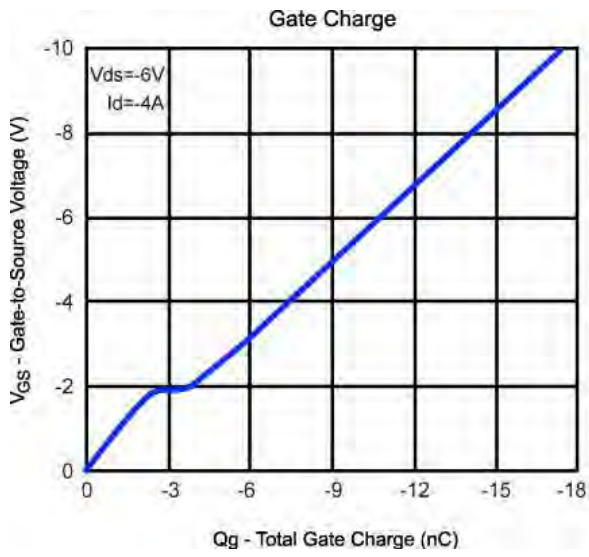


On-Region Characteristics



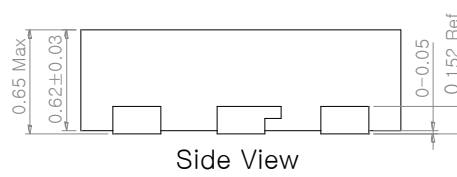
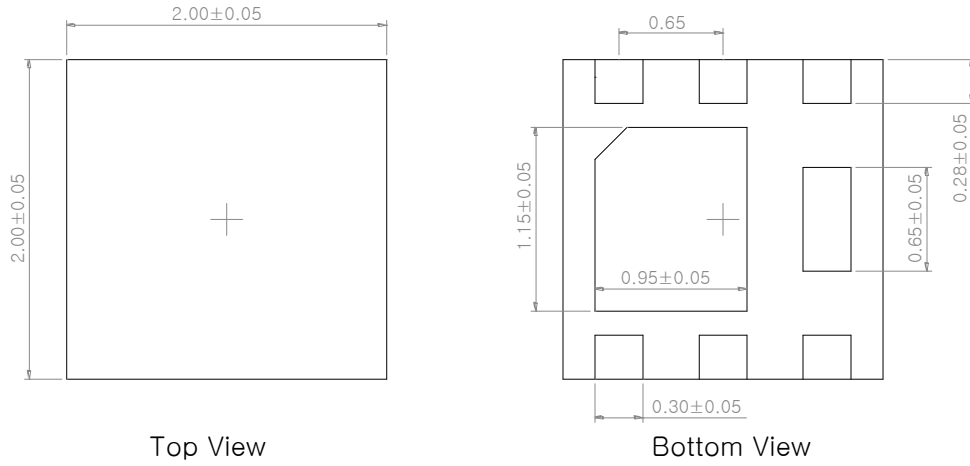


FTK2501DFN2020



DFN2020-6

DIMENSION OUTLINE: Unit:mm



RECOMMENDED MOUNTING FOOTPRINT*

