

Product Summary

- $V_{DS} = -40V, I_D = -5A$
- $R_{DS(on)} < 47m\Omega @ V_{GS} = -10V$
- $R_{DS(on)} < 66m\Omega @ V_{GS} = -4.5V$

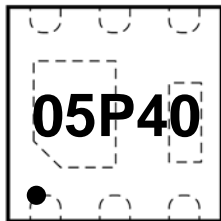
Features

- Advanced Trench Technology
- RoHS and Reach Compliant
- Halogen and Antimony Free
- Moisture Sensitivity Level 1

Application

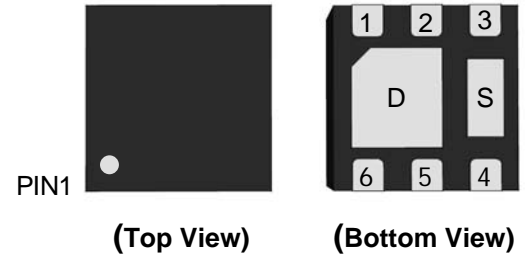
- Notebook
- Load Switch
- Battery Protection

Marking Code



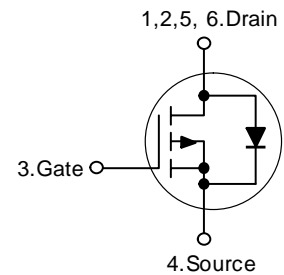
Top View

DFN2x2- 6L



Pin	Description
1,2,5,6	Drain
3	Gate
4	Source

Schematic Diagram



Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$-V_{DS}$	40	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	$-I_D$	5	A
Drain Current-Pulsed ^{Note1}	$-I_{DM}$	20	A
Maximum Power Dissipation	P_D	2	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance, Junction-to-Ambient ^{Note2}	$R_{\theta JA}$	62.5	°C/W
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FTK05P40DFN22

Electrical Characteristics

(Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$-V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	40	--	--	V
Zero Gate Voltage Drain Current	$-I_{DSS}$	$V_{DS}=-40V, V_{GS}=0V$	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	--	--	± 100	nA
Gate Threshold Voltage ^{Note3}	$-V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	1.0	--	2.5	V
Drain-Source On-Resistance ^{Note3}	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-2A$	--	--	47	m Ω
		$V_{GS}=-4.5V, I_D=-1.5A$	--	--	66	m Ω
Forward Transconductance ^{Note3}	g_{FS}	$V_{DS}=-5V, I_D=-1A$	--	5	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=-20V, V_{GS}=0V, f=1MHz$	--	956	--	pF
Output Capacitance	C_{oss}		--	98	--	pF
Reverse Transfer Capacitance	C_{riss}		--	85	--	pF
Total Gate Charge	Q_g	$V_{DS}=-15V, I_D=-5A, V_{GS}=-10V$	--	20	--	nC
Gate-Source Charge	Q_{gs}		--	3.5	--	nC
Gate-Drain Charge	Q_{gd}		--	4.2	--	nC
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=-20V, I_D=-5A, V_{GS}=-10V, R_{GEN}=2.4\Omega$	--	8	--	nS
Turn-on Rise Time	t_r		--	15	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	23	--	nS
Turn-off Fall Time	t_f		--	9	--	nS
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note3}	$-V_{SD}$	$V_{GS}=0V, I_S=-5A$	--	--	1.2	V
Diode Forward Current	$-I_S$		--	--	5	A

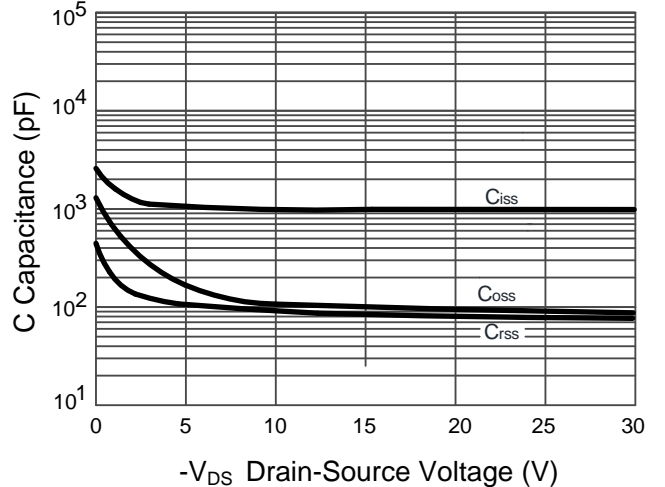
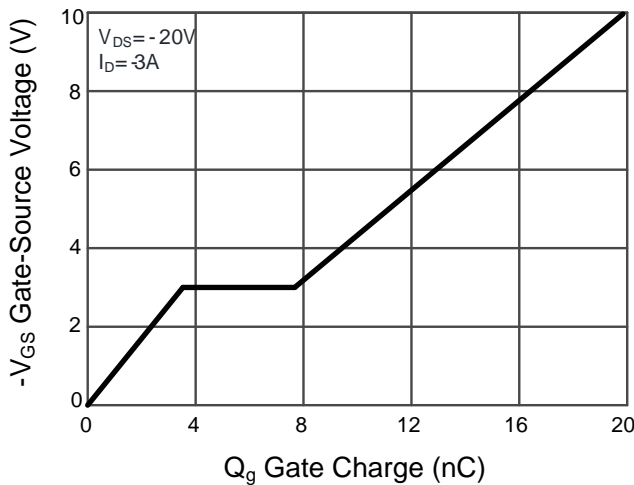
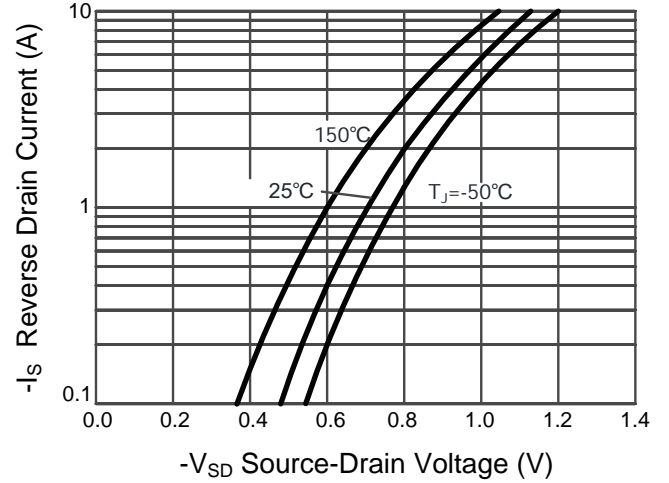
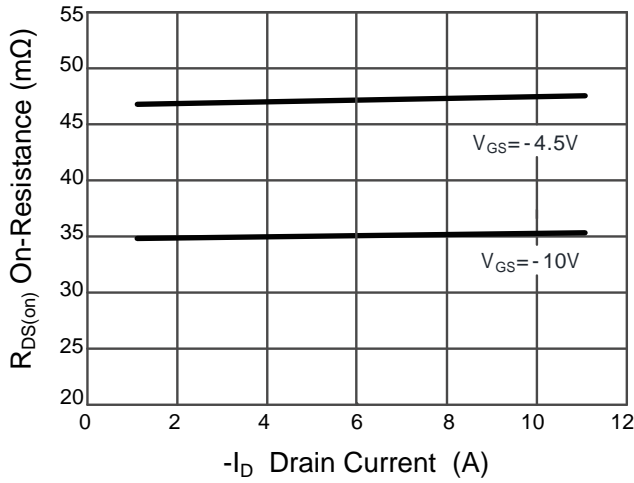
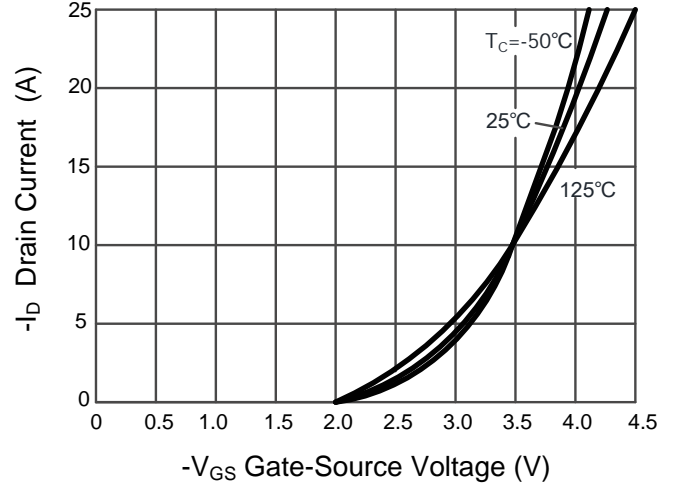
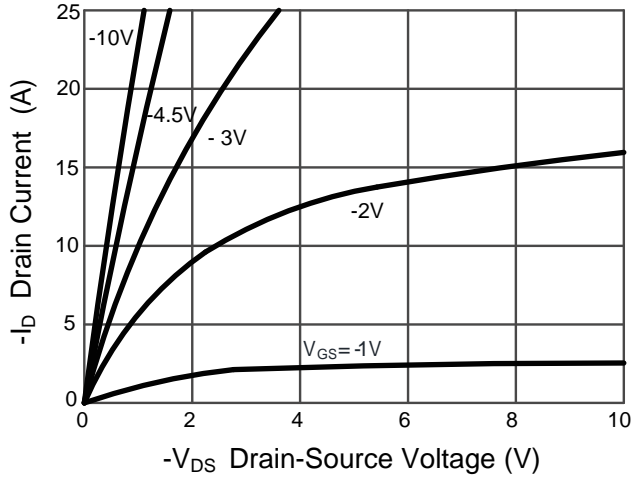
Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. Surface Mounted on FR4 Board, $t \leq 10$ sec.

3. Pulse Test: Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

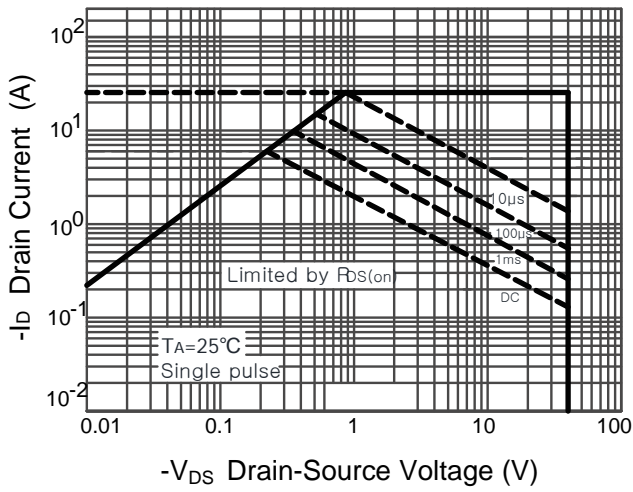
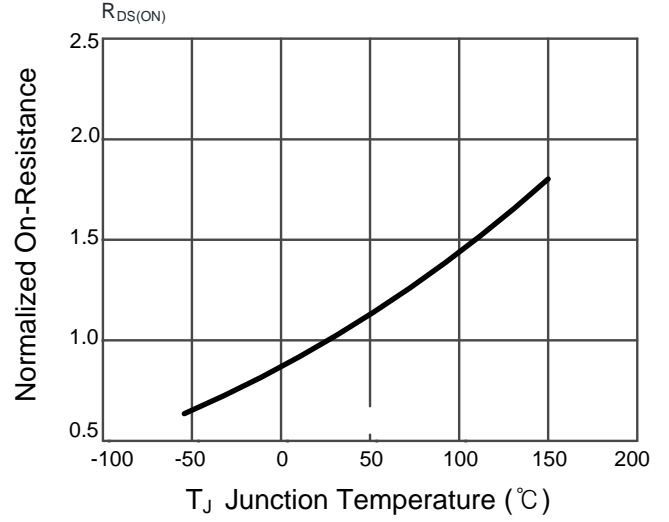
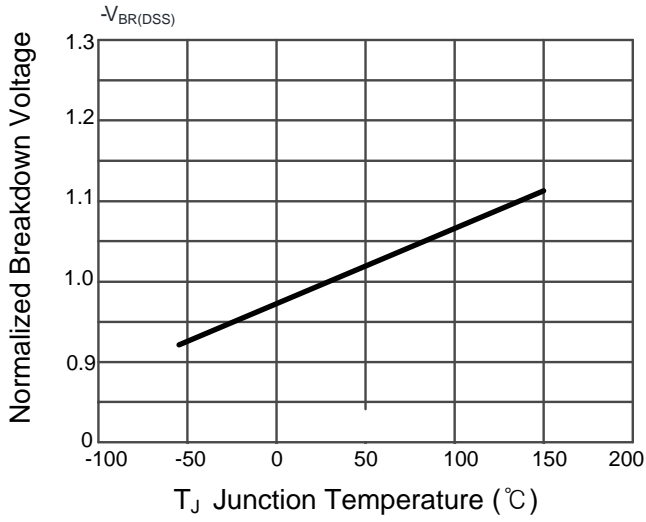


Typical Characteristic Curves





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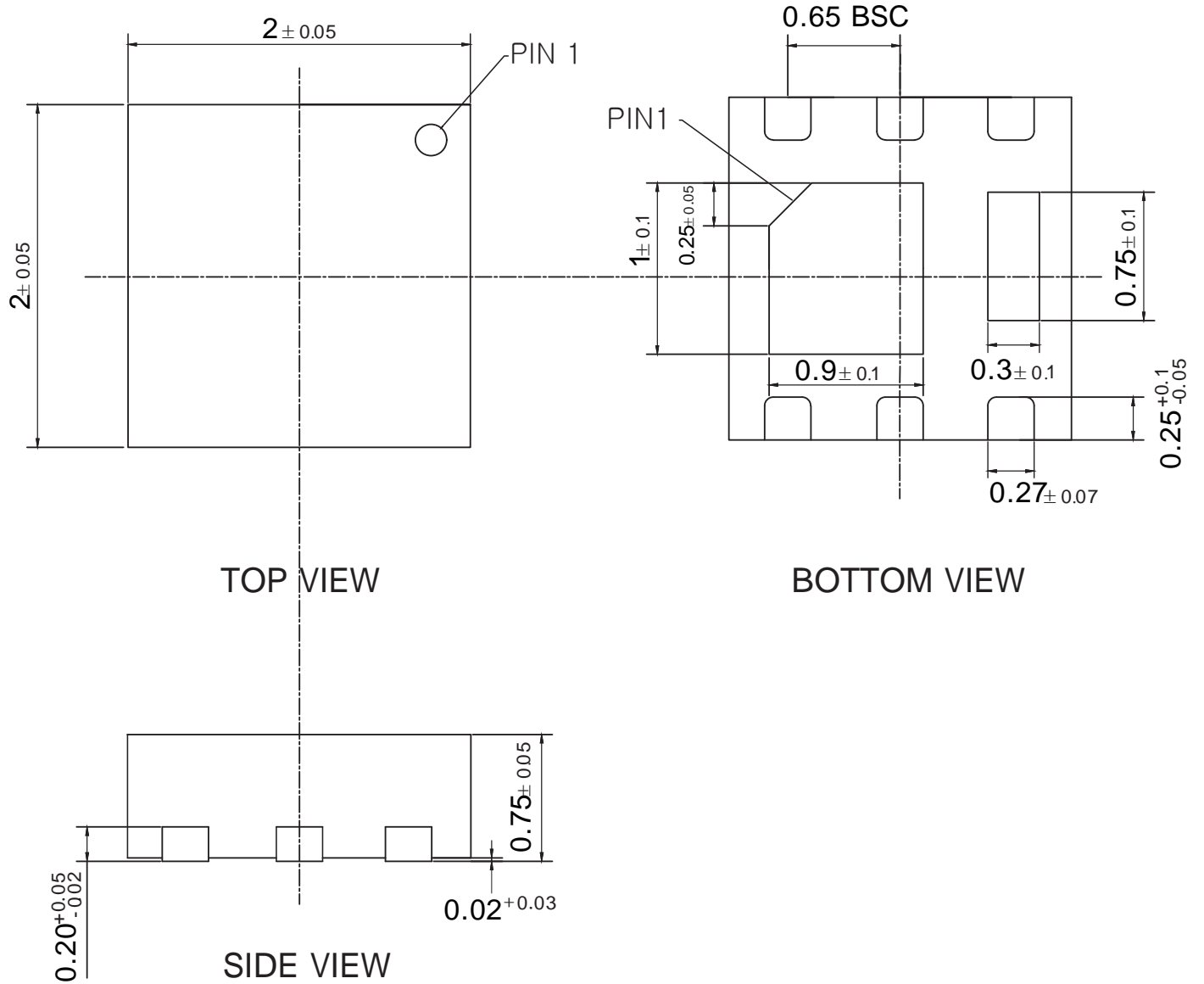




FTK05P40DFN22

Package Outline

DFN2x2 - 6L - 0001
Dimensions in mm



Ordering Information

Device	Package	Shipping
FTK05P40DFN22	DFN2x2 - 6L	3,000PCS/Reel&7inches