

Plastic-Encapsulate MOSFETS

N Channel +P Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
20V	380m Ω @ 4.5V	0.75A
	450m Ω @ 2.5V	
	800m Ω @ 1.8V	
- 20V	520m Ω @ -4.5V	- 0.66A
	700m Ω @ -2.5V	
	950m Ω (TYP) @ -1.8V	



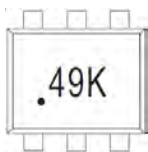
FEATURE

- Surface Mount Package
- Low $R_{DS(on)}$
- Operated at Low Logic Level Gate Drive
- ESD Protected Gate
- Including a N-ch FTK3439K and a P-ch FTK3439K (independently) In a Package

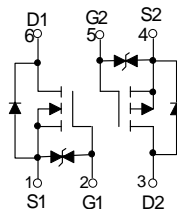
APPLICATION

- Load/ Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

MARKING



Equivalent Circuit



ABSOLUTE MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
N- MOSFET			
Drain-Source Voltage	V_{DS}	20	V
Typical Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current (note 1)	I_D	0.75	A
Pulsed Drain Current (tp=10us)	I_{DM}	1.8	A
P- MOSFET			
Drain-Source Voltage	V_{DS}	-20	V
Typical Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current (note 1)	I_D	-0.66	A
Pulsed Drain Current (tp=10us)	I_{DM}	-1.2	A
Temperature and Thermal Resistance			
Thermal Resistance from Junction to Ambient (note 1)	$R_{\theta JA}$	833	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55~+150	°C
Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	T_L	260	°C



FTK3439K

MOSFET ELECTRICAL CHARACTERISTICS

N-ch MOSFET ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC CHARACTERISTICS						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = 20V, V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±10V, V _{DS} = 0V			±20	uA
Gate threshold voltage (note 2)	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.35		1.1	V
Drain-source on-resistance(note 2)	R _{DS(on)}	V _{GS} = 4.5V, I _D = 0.65A			380	mΩ
		V _{GS} = 2.5V, I _D = 0.55A			450	mΩ
		V _{GS} = 1.8V, I _D = 0.45A			800	mΩ
Forward tranconductance(note 2)	g _{FS}	V _{DS} = 10V, I _D = 0.8A		1.6		S
Diode forward voltage	V _{SD}	I _S = 0.15A, V _{GS} = 0V			1.2	V
DYNAMIC CHARACTERISTICS (note 4)						
Input Capacitance	C _{iss}	V _{DS} = 16V, V _{GS} = 0V, f = 1MHz		79	120	pF
Output Capacitance	C _{oss}			13	20	pF
Reverse Transfer Capacitance	C _{rss}			9	15	pF
SWITCHING CHARACTERISTICS (note 3,4)						
Turn-on delay time	t _{d(on)}	V _{GS} = 4.5V, V _{DS} = 10V, I _D = 500mA, R _{GEN} = 10Ω		6.7		ns
Turn-on rise time	t _r			4.8		ns
Turn-off delay time	t _{d(off)}			17.3		ns
Turn-off fall time	t _f			7.4		ns

P-ch MOSFET ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC CHARACTERISTICS						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = -20V, V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±10V, V _{DS} = 0V			±20	uA
Gate threshold voltage (note 2)	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.35		-1.1	V
Drain-source on-resistance(note 2)	R _{DS(on)}	V _{GS} = -4.5V, I _D = -1A		270	520	mΩ
		V _{GS} = -2.5V, I _D = -0.8A		320	700	mΩ
		V _{GS} = -1.8V, I _D = -0.5A		950		mΩ
Forward tranconductance(note 2)	g _{FS}	V _{DS} = -10V, I _D = -0.54A		1.2		S
Diode forward voltage	V _{SD}	I _S = -0.5A, V _{GS} = 0V			-1.2	V
DYNAMIC CHARACTERISTICS (note 4)						
Input Capacitance	C _{iss}	V _{DS} = -16V, V _{GS} = 0V, f = 1MHz		113	170	pF
Output Capacitance	C _{oss}			15	25	pF
Reverse Transfer Capacitance	C _{rss}			9	15	pF
SWITCHING CHARACTERISTICS (note 3,4)						
Turn-on delay time	t _{d(on)}	V _{GS} = -4.5V, V _{DS} = -10V, I _D = -200mA, R _{GEN} = 10Ω		9		ns
Turn-on rise time	t _r			5.8		ns
Turn-off delay time	t _{d(off)}			32.7		ns
Turn-off fall time	t _f			20.3		ns

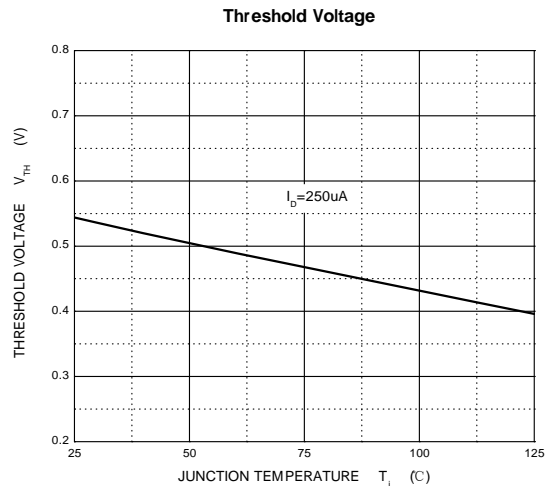
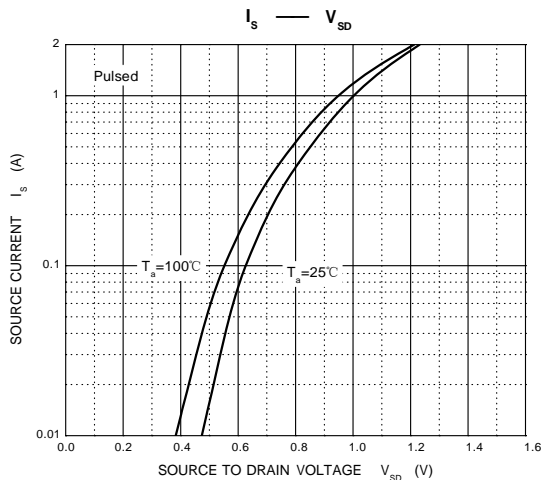
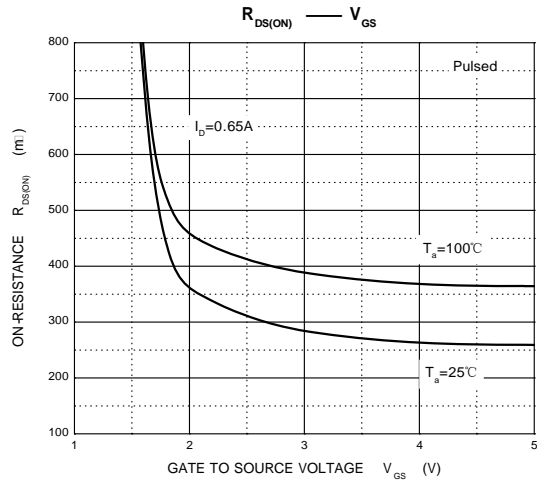
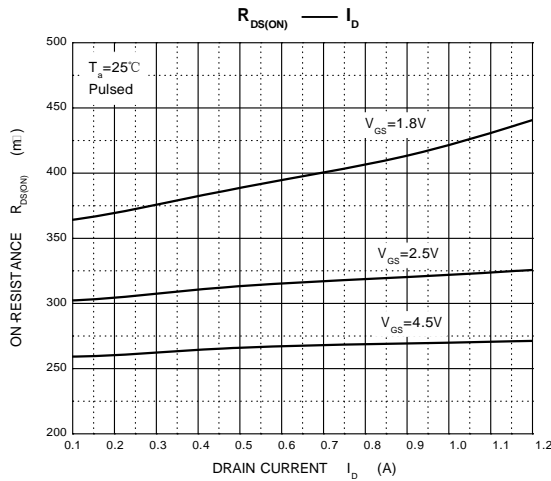
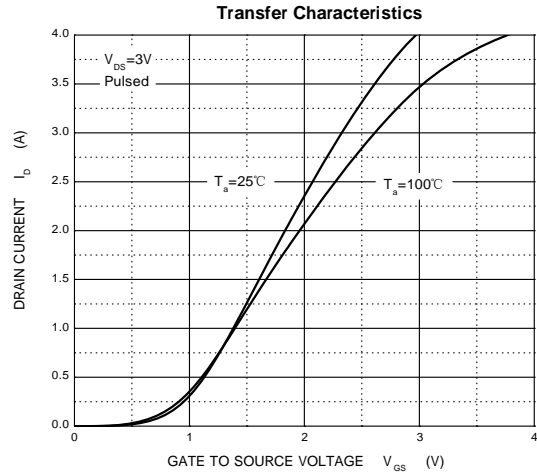
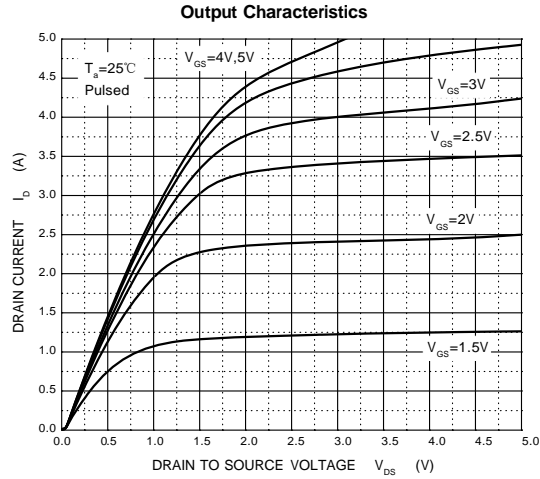
Notes :

1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse width = 300μs, duty cycle ≤ 2%.
3. Switching characteristics are independent of operating junction temperature.
4. Guaranteed by design, not subject to producing.



FTK3439K

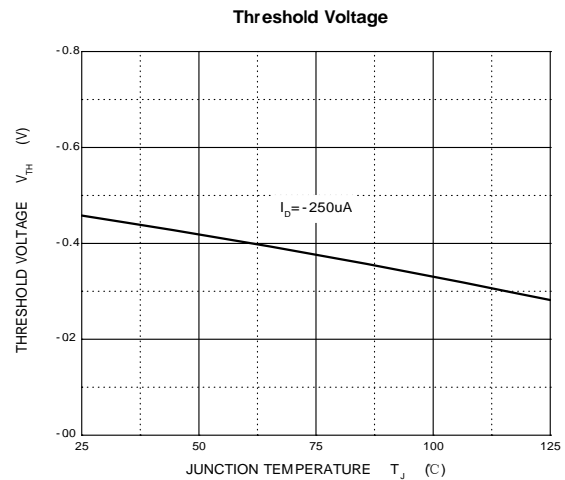
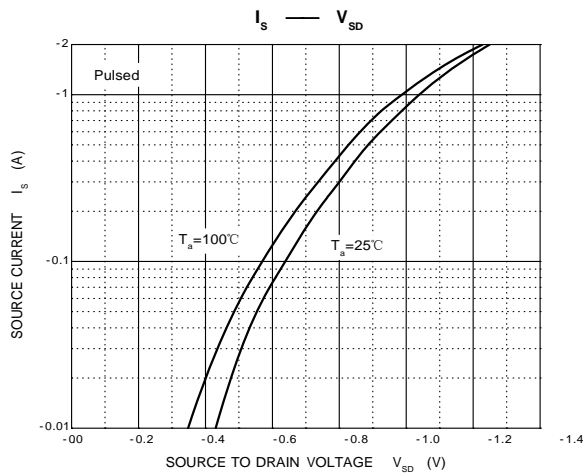
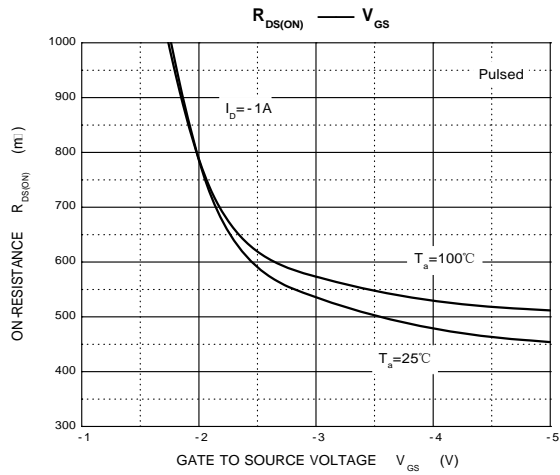
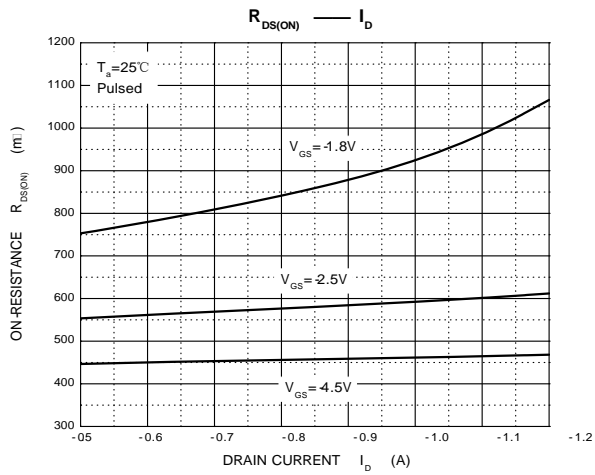
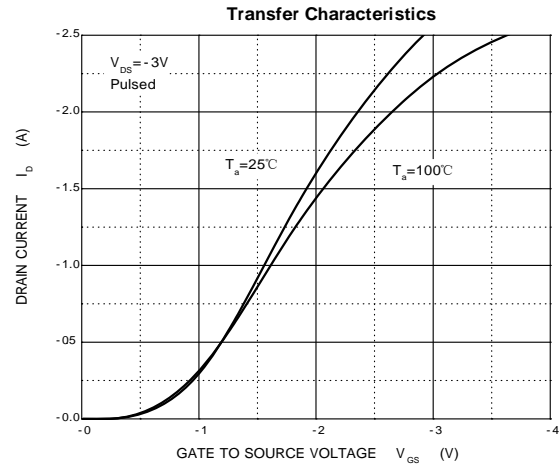
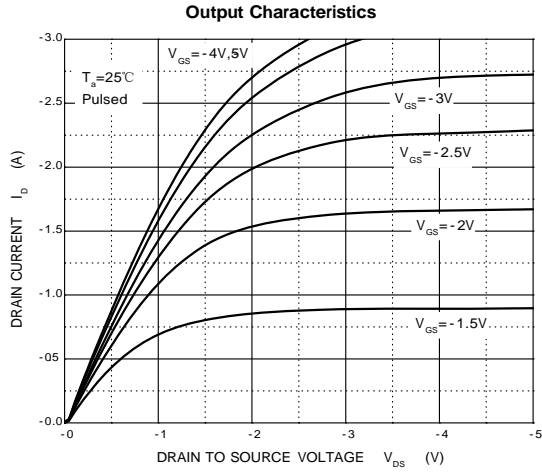
Typical Characteristics



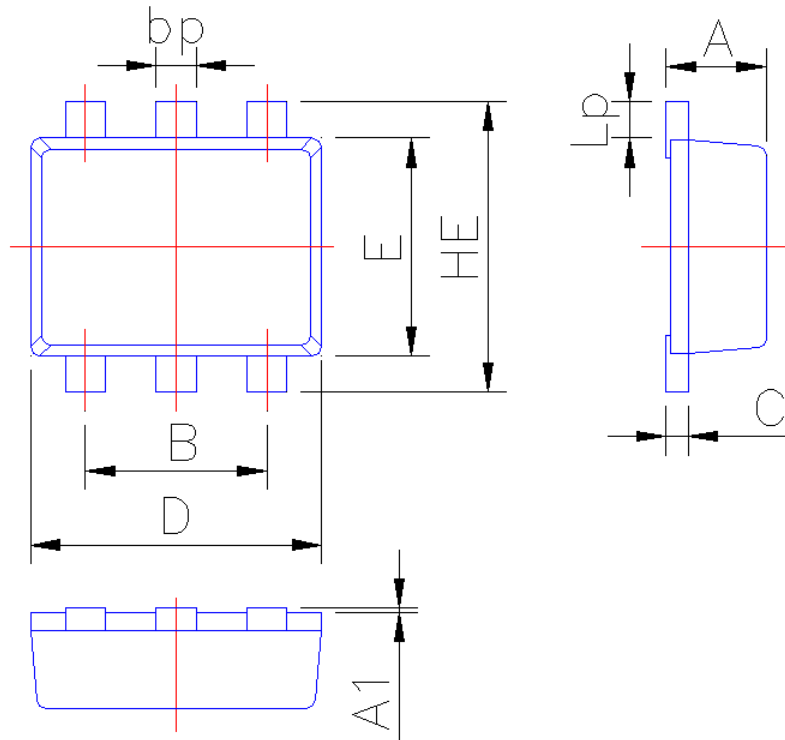


FTK3439K

Typical Characteristics



SOT-563-Package Outline Dimensions



Symbol	Dimension in Millimeters	
	Min	Max
A	0.50	0.60
A1	0	0.05
B	0.95	1.05
bp	0.13	0.30
C	0.09	0.150
D	1.50	1.70
E	1.15	1.35
HE	1.40	1.80
Lp	0.13	0.30