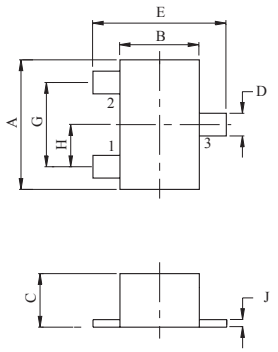
KTK5131E

N CHANNEL MOS FIELD EFFECT TRANSISTOR

ULTRA-HIGH SPEED SWITCHING APPLICATIONS
ANALOG SWITCH APPLICATIONS

FEATURES

- 2.5 Gate Drive.
- Low Threshold Voltage : V_{th}=0.5～1.5V.
- High Speed.
- Small Package.
- Enhancement-Mode.



DIM	MILLIMETERS
A	1.60±0.10
B	0.85±0.10
C	0.70±0.10
D	0.27+0.10/-0.05
E	1.60±0.10
G	1.00±0.10
H	0.50
J	0.13±0.05

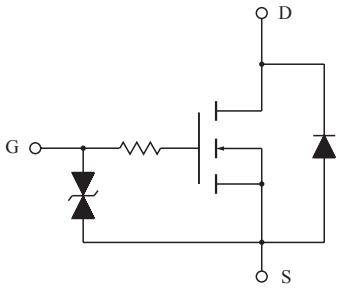
1. SOURCE
2. GATE
3. DRAIN

ESM

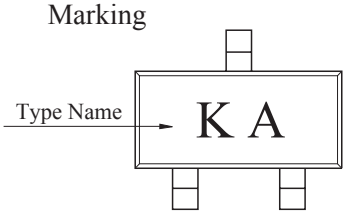
MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GSS}	±20	V
DC Drain Current	I_D	50	mA
Drain Power Dissipation	P_D	100	mW
Channel Temperature	T_{ch}	150	℃
Storage Temperature Range	T_{stg}	-55～150	℃

EQUIVALENT CIRCUIT



Marking

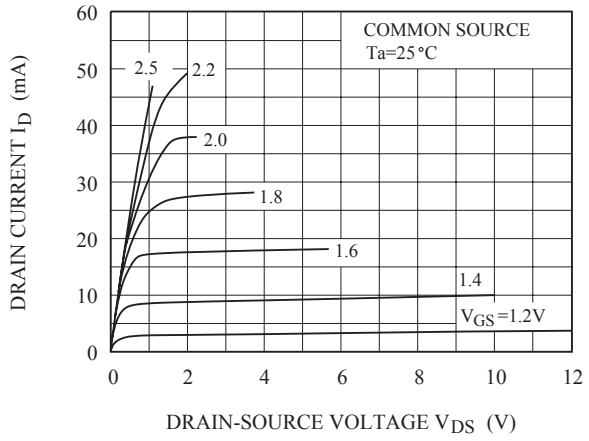


THIS TRANSISTOR IS ELECTROSTATIC SENSITIVE DEVICE.
PLEASE HANDLE WITH CAUTION.

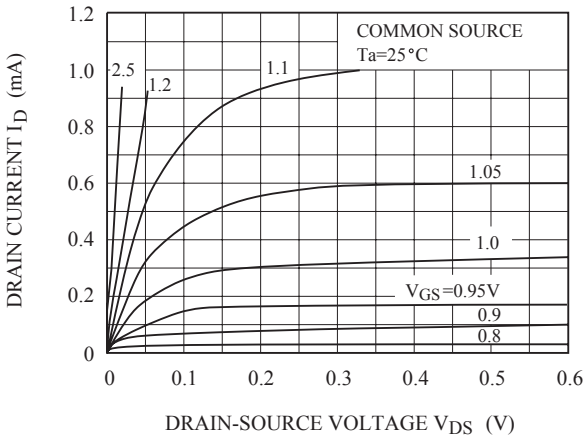
ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I_{GSS}	V_{GS}=±16V, V_{DS}=0V	-	-	±1	μA
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	I_D=100μA, V_{GS}=0V	30	-	-	V
Drain Cut-off Current		I_{DSS}	V_{DS}=30V, V_{GS}=0V	-	-	1	μA
Gate Threshold Voltage		V_{th}	V_{DS}=3V, I_D=0.1mA	0.5	-	1.5	V
Forward Transfer Admittance		$\|Y_{fs}\|$	V_{DS}=3V, I_D=10mA	20	-	-	mS
Drain-Source ON Resistance		$R_{DS(ON)}$	I_D=10mA, V_{GS}=2.5V	-	15	40	Ω
Input Capacitance		C_{iss}	V_{DS}=3V, V_{GS}=0V, f=1MHz	-	5.5	-	pF
Reverse Transfer Capacitance		C_{rss}	V_{DS}=3V, V_{GS}=0V, f=1MHz	-	1.6	-	pF
Output Capacitance		C_{oss}	V_{DS}=3V, V_{GS}=0V, f=1MHz	-	6.5	-	pF
Switching Time	Turn-on Time	t_{on}	V_{DD}=3V, I_D=10mA, V_{GS}=0～2.5V	-	140	-	nS
	Turn-off Time	t_{off}		-	140	-	nS

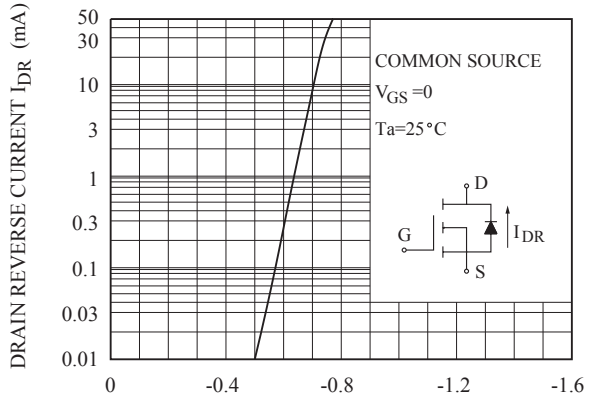
I_D - V_{DS}



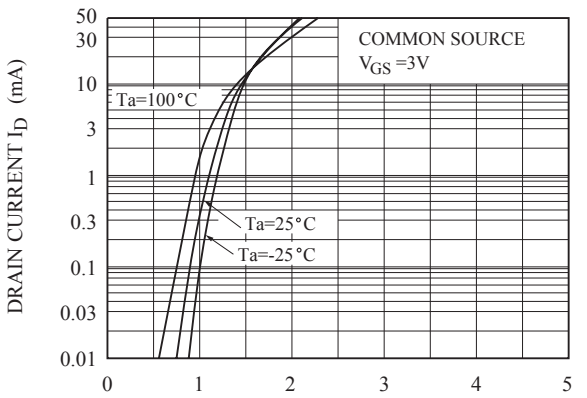
I_D - V_{DS}
(LOW VOLTAGE REGION)



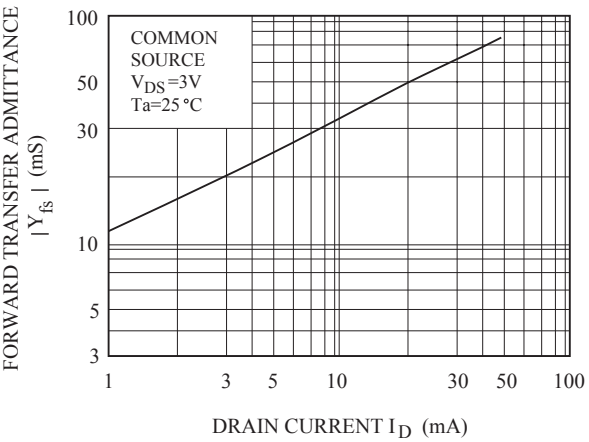
I_{DR} - V_{DS}



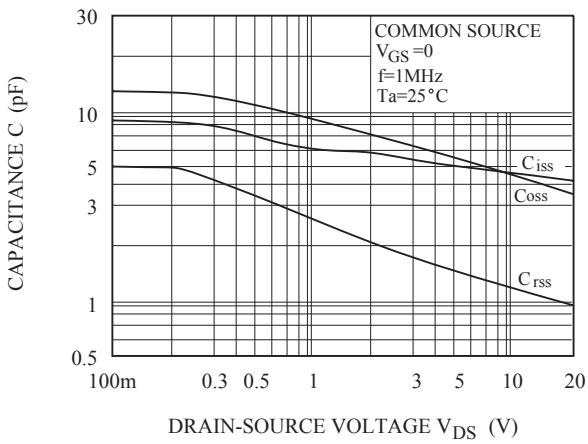
I_D - V_{GS}



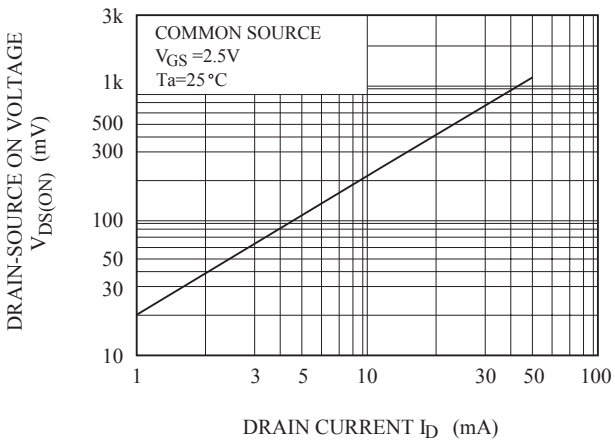
$|Y_{fs}|$ - I_D



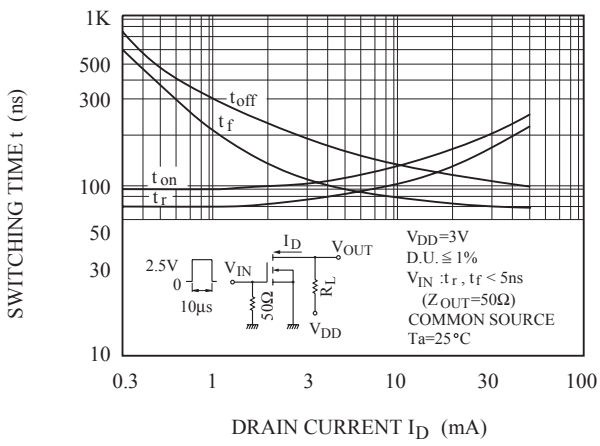
C - V_{DS}



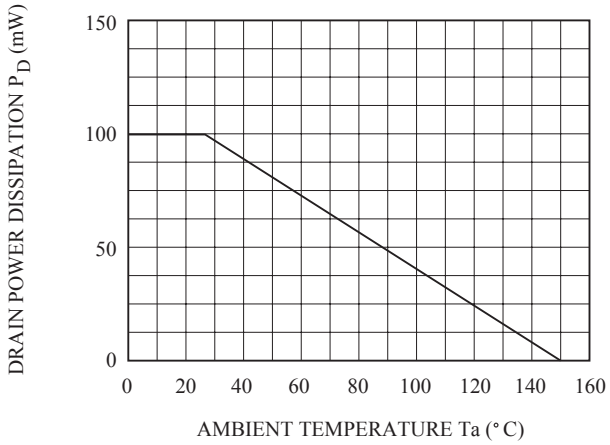
$V_{DS(ON)}$ - I_D



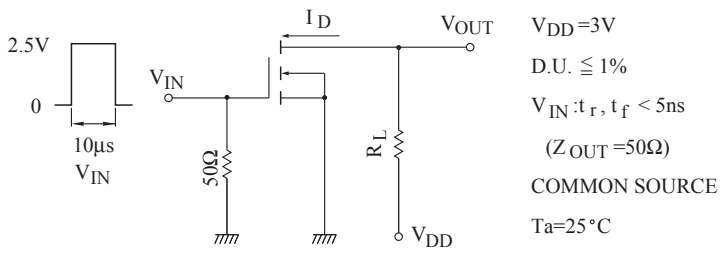
t - I_D



P_D - Ta



SWITCHING TIME TEST CIRCUIT



V_{DD} =3V
D.U. ≦ 1%
V_{IN} :t_r , t_f < 5ns
(Z_{OUT} =50Ω)
COMMON SOURCE
Ta=25°C