

ULTRA-HIGH SPEED SWITCHING APPLICATIONS
ANALOG SWITCH APPLICATIONS

FEATURES

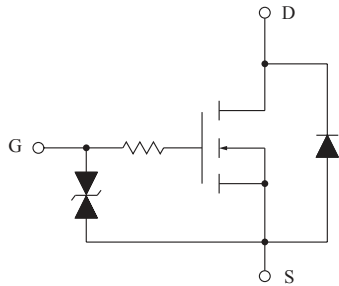
- 2.5 Gate Drive.
- Low Threshold Voltage : $V_{th}=0.5 \sim 1.5V$.
- High Speed.
- Small Package.
- Enhancement-Mode.
- Suffix Δ : USM(1) Package
ex) KTK5132U-RTK/H Δ

MAXIMUM RATING (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GSS}	± 20	V
DC Drain Current	I_D	100	mA
Drain Power Dissipation	P_D^*	200	mW
Channel Temperature	T_{ch}	150	°C
Storage Temperature Range	T_{stg}	-55 ~ 150	°C

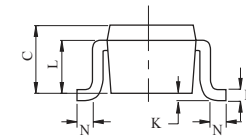
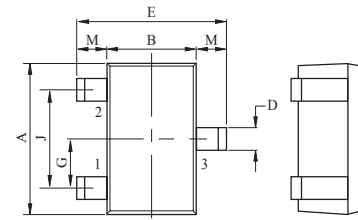
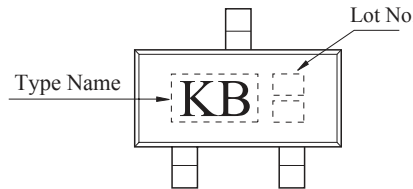
Note) * Package Mounted On 99.5% Alumina $10 \times 8 \times 0.6mm$

EQUIVALENT CIRCUIT



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

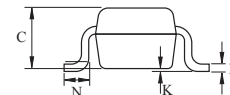
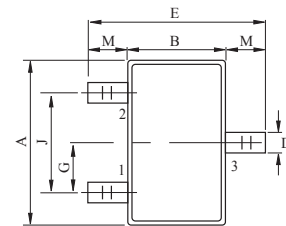
MARKING



1. EMITTER
2. BASE
3. COLLECTOR

DIM	MILLIMETERS
A	2.00±0.20
B	1.25±0.15
C	0.90±0.10
D	0.3+0.10/-0.05
E	2.10 ± 0.20
G	0.65
H	0.15+0.1/-0.06
J	1.30
K	0.00-0.10
L	0.70
M	0.42±0.10
N	0.10 Min.

USM



1. EMITTER
2. BASE
3. COLLECTOR

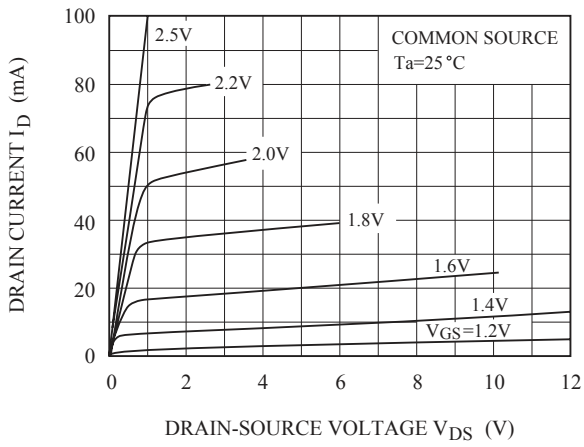
DIM	MILLIMETERS
A	2.1±0.1
B	1.25±0.1
C	0.95±0.1
D	0.3±0.1
E	2.275 ± 0.125
G	Typ 0.65
H	0.115 ± 0.035
J	Typ 1.3
K	0.05±0.05
M	0.5±0.125
N	0.355±0.095

USM(1)

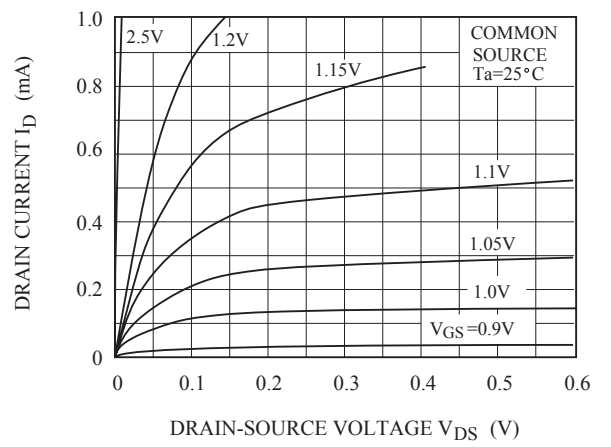
ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 16V, V_{DS} = 0V$	-	-	± 1	μA
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 100 \mu A, V_{GS} = 0V$	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} $	$V_{DS} = 3V, I_D = 10mA$	25	-	-	mS
Drain-Source ON Resistance	$R_{DS(ON)}$	$I_D = 10mA, V_{GS} = 2.5V$	-	4	7	Ω
Input Capacitance	C_{iss}	$V_{DS} = 3V, V_{GS} = 0V, f = 1MHz$	-	19	-	pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = 3V, V_{GS} = 0V, f = 1MHz$	-	7	-	pF
Output Capacitance	C_{oss}	$V_{DS} = 3V, V_{GS} = 0V, f = 1MHz$	-	17	-	pF
Switching Time	Turn-on Time	$V_{DD} = 5V, I_D = 10mA, V_{GS} = 0 \sim 5V$	-	50	-	nS
	Turn-off Time		-	180	-	nS

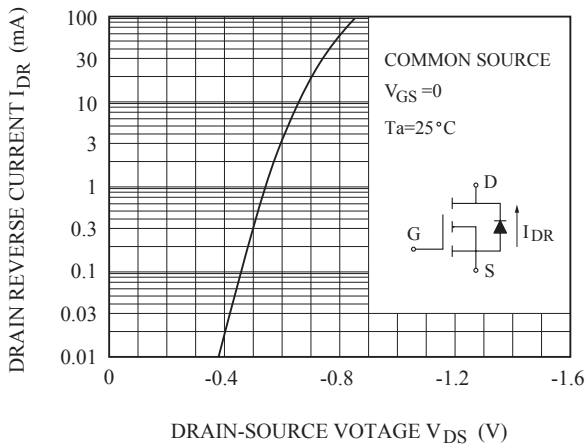
$I_D - V_{DS}$



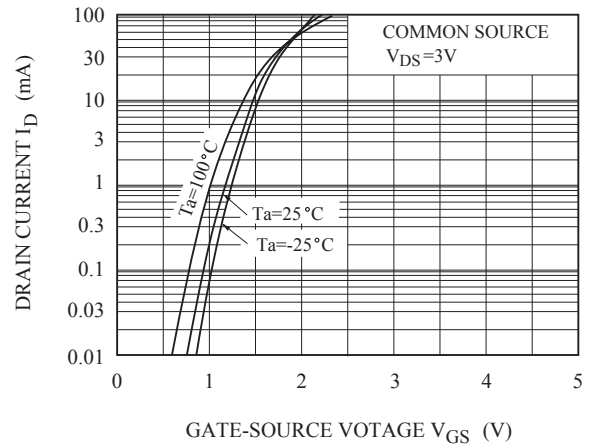
$I_D - V_{DS}$
(LOW VOLTAGE REGION)



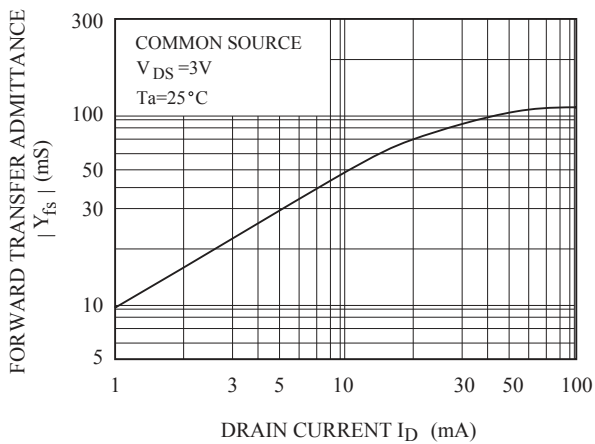
$I_{DR} - V_{DS}$



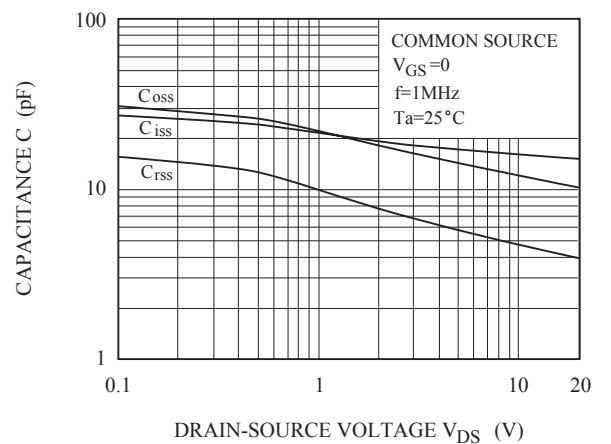
$I_D - V_{GS}$



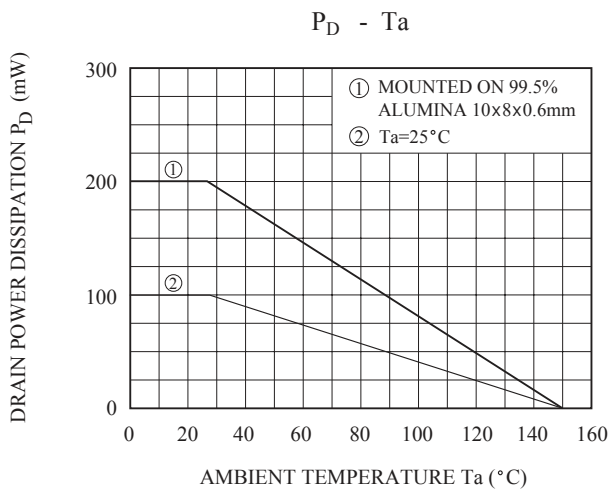
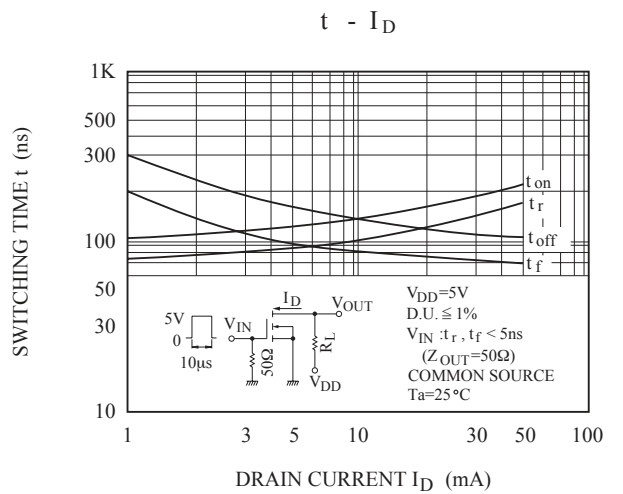
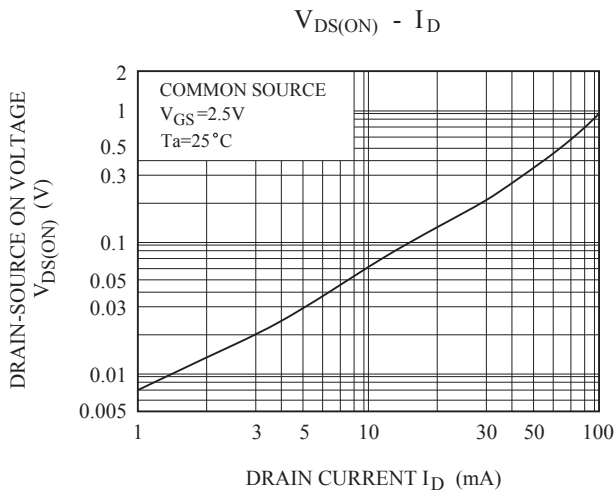
$|Y_{fs}| - I_D$



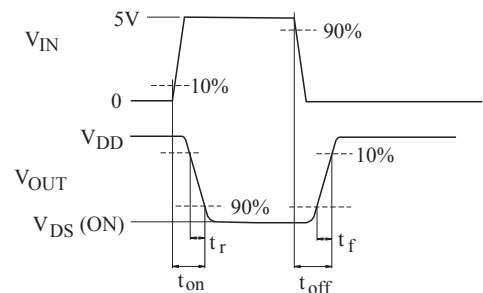
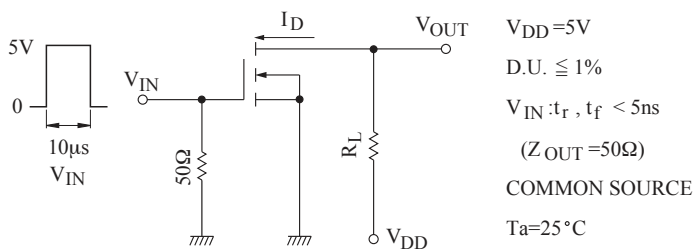
$C - V_{DS}$



KTK5132U



SWITCHING TIME TEST CIRCUIT



PRECAUTION ON USING KEC PRODUCTS

1. The products described in this data are intended to be used in general-purpose electronic equipment (Office equipment, telecommunication equipment, measuring equipment, home appliances)
2. When you intend to use these products with equipment or device which require an extremely high of reliability and special applications (such as automobile, air travel aerospace, transportation equipment, life support, system and safety devices) in which special quality and reliability and the failure or malfunction of products may directly jeopardize or harm the human body or damage to property and any application other than the standard application intended, please be sure to consult with our sales representative in advance.
3. On designing your application, please use product within the ranges guaranteed by KEC for maximum rating, operating supply voltage range, heat radiation characteristics and other characteristics. User shall be responsible for failure or damage when used beyond the guaranteed ranges.
4. The technical information described in this data is limited to showing representative characteristics and applied circuit examples of the products and it does not constitute the warranting of industrial property, the granting of relative rights, or the granting of any license.
5. What are described in the data may be changed without any prior notice to reflect new technical development. Please confirm that you have received the latest product standards or specification before final design, purchase or use.
6. Although KEC is continuously working to improve product reliability and quality, semiconductors can break down and malfunction due to various factors. Therefore, in order to prevent personal injury or fire arising from failure, please take safety measures such as complying with the derating characteristics, implementing redundant and fire prevention designs, and utilizing backups and fail-safe procedures. KEC shall have no responsibility for any damages arising out of the use of our Products beyond the rating specified by KEC.