

ULTRA-HIGH SPEED SWITCHING APPLICATIONS
ANALOG SWITCH APPLICATIONS

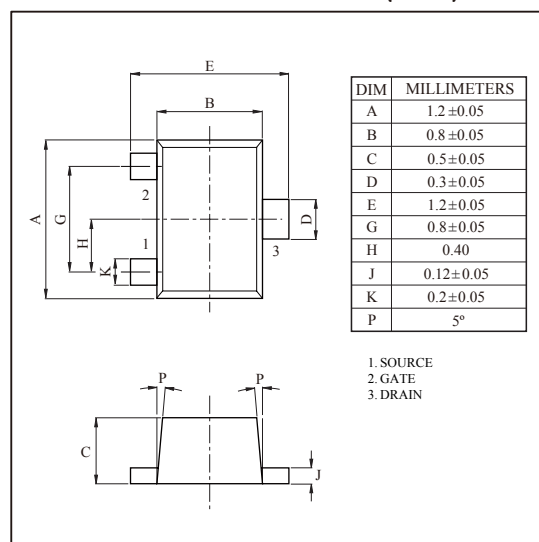
FEATURES

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

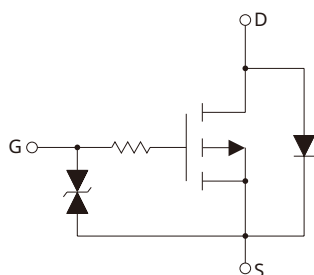
MAXIMUM RATING ($T_A = 25^\circ C$)

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	$^\circ C$
Storage Temperature Range	T_{stg}	-55~150	$^\circ C$

PACKAGE DIMENSION (VSM)



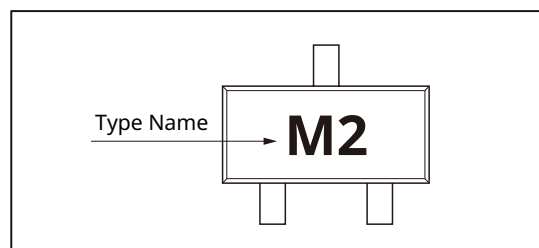
EQUIVALENT CIRCUIT



THIS TRANSISTOR IS ELECTROSTATIC SENSITIVE DEVICE.

PLEASE HANDLE WITH CAUTION.

MARKING CODE



ELECTRICAL CHARACTERISTICS ($T_j = 25^\circ C$)

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		$V_{(BR)DSS}$	$I_{DS} = -100\mu A, V_{GS} = 0V$	-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} $	$V_{DS} = -3V, I_D = -10mA$	15	-	-	mS
Drain-Source ON Resistance		$R_{DS(ON)}$	$I_{DS} = -10mA, V_{GS} = -2.5V$	-	20	40	Ω
Input Capacitance		C_{iss}	$V_{DS} = -3V, V_{GS} = 0V, f = 1MHz$	-	10	-	pF
Reverse Transfer Capacitance		C_{rss}	$V_{DS} = -3V, V_{GS} = 0V, f = 1MHz$	-	3.4	-	pF
Output Capacitance		C_{oss}	$V_{DS} = -3V, V_{GS} = 0V, f = 1MHz$	-	8.3	-	pF
Switching Time	Turn-on Delay time	$t_{d(on)}$	$V_{DD} = -3V, I_D = -10mA,$ $V_{GS} = -2.5V, R_G = 10\Omega$	-	9.5	-	ns
	Turn-on Rise time	t_t		-	8.5	-	
	Turn-off Delay time	$t_{d(off)}$		-	15.4	-	
	Turn-off Fall time	t_f		-	67.5	-	

PRODUCT DATASHEET

P-Ch Small Signal MOSFET - KTJ6131VA

Fig1. $I_D - V_{DS}$

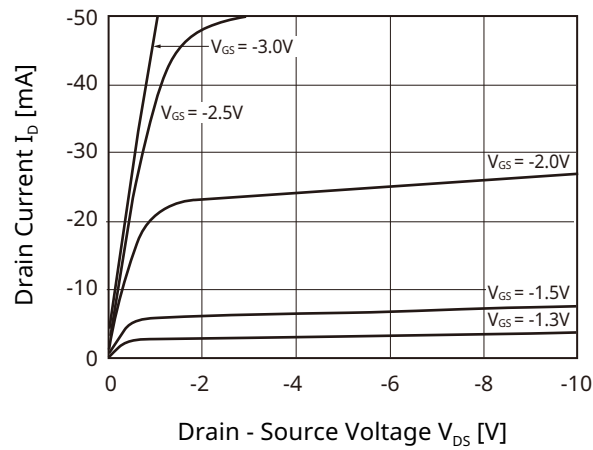


Fig2. $R_{DS(ON)} - I_D$

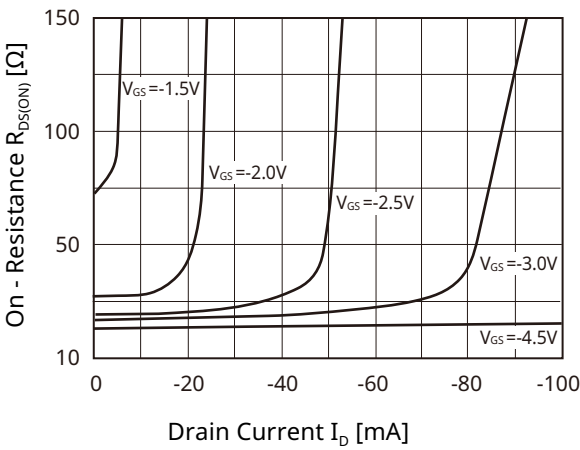


Fig3. $I_D - V_{SD}$

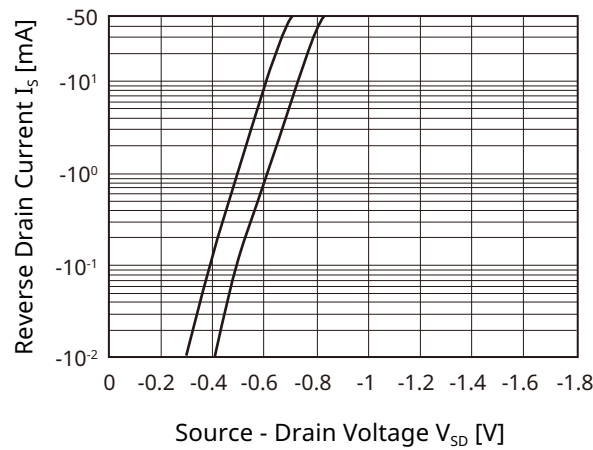


Fig4. $I_D - V_{GS}$

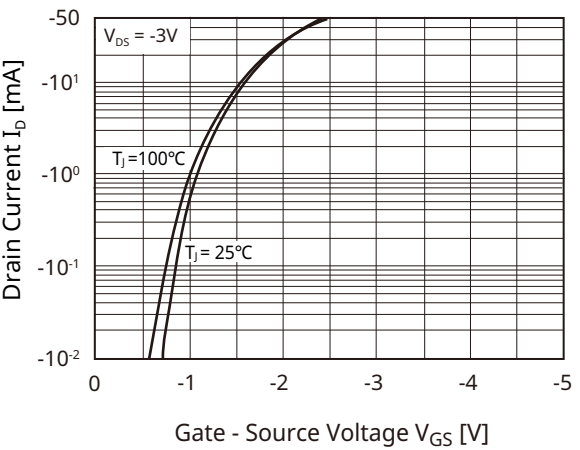


Fig5. $|Y_{fs}| - I_D$

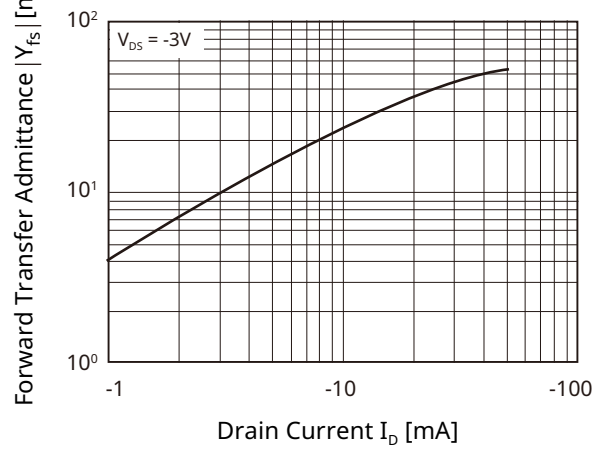
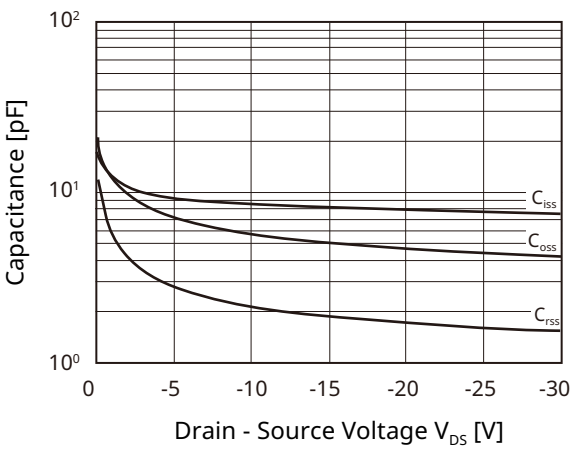


Fig6. Capacitance - V_{DS}



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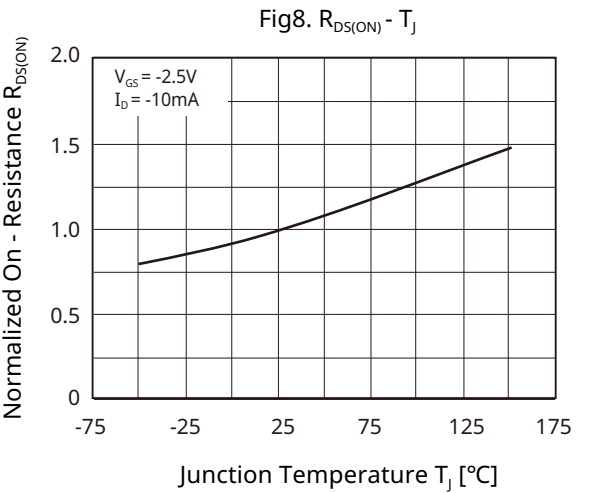
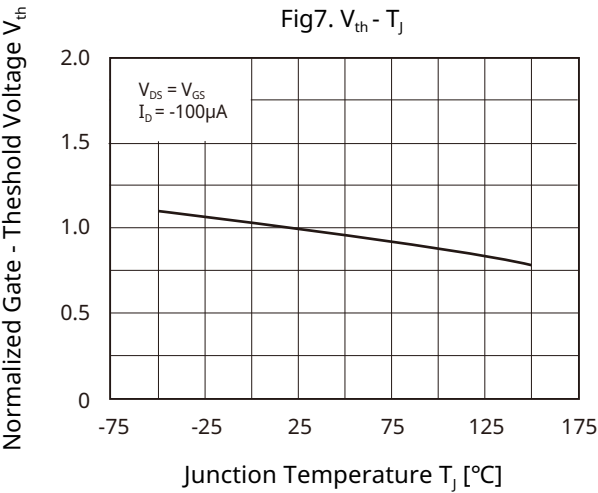
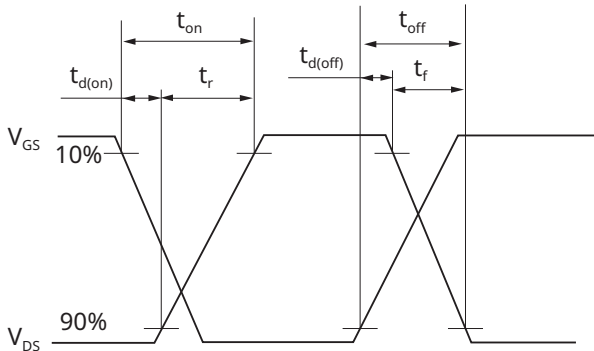
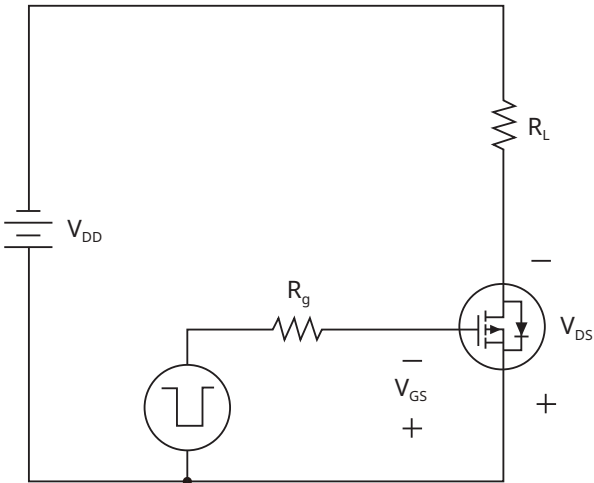


Fig 9. Resistive Load Switching



PRODUCT DATASHEET

P-Ch Small Signal MOSFET - KTJ6131VA

ORDERING INFORMATION

Part Number	Status	Compliance			Packing Type	Packing Qty
		AEC-Q	Pb-Free	Halogen Free		
KTJ6131VA-RTL/H	Active	-	Y	Y	Reel	8,000pcs

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.

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