To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (http://www.renesas.com)

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DATA SHEET

RENESAS

JUNCTION FIELD EFFECT TRANSISTORS

2SK160, 2SK160A

AF & RF AMPLIFIER
N-CHANNEL SILICON JUNCTION FIELD EFFECT TRANSISTOR
MINI MOLD

DESCRIPTION

The 2SK160, 2SK160A are designed for hybrid IC which is designed for use in analog-switch, variable-resitor, FR amplifier and AF amplifier.

FEATURE

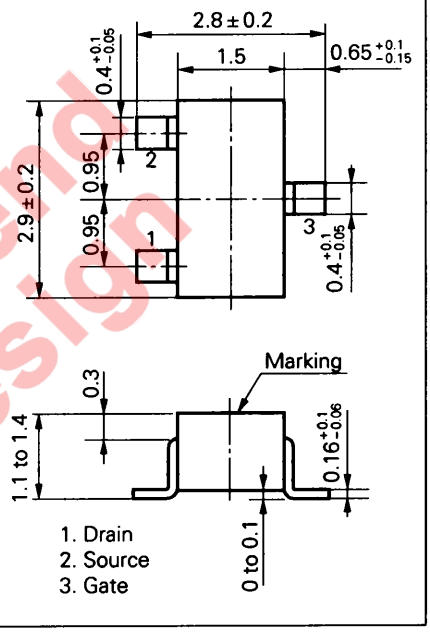
- Micro package.

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C)

		2SK160	2SK160A	
Maximum Voltages and Currents				
Gate to Drain Voltage	V_{GDO}	−30	−50	V
Gate to Source Voltage	V_{GSO}	−30	−50	V
Drain to Source Voltage (V_{GS} = −5.0 V)	V_{DSX}	30		V
Drain Current	I_D	20		mA
Gate Current	I_G	10		mA
Maximum Power Dissipation (T_A = 25 °C)				
Total Power Dissipation	P_T	150		mW
Maximum Temperature				
Storage Temperature	T_{stg}	−55 to +125		°C
Junction Temperature	T_j	125		°C

PACKAGE DIMENSIONS

in millimeters



ELECTRICAL CHARACTERISTICS (T_A = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION	
Gate Cutoff Current	I_{GSS}			−10	nA	2SK160	V_{GS} = −30 V, V_{DS} = 0
				−1	nA	2SK160A	
Zero-Gate Voltage Drain Current	I_{DSS}	0.5	2.5	12	mA	V_{DS} = 5.0 V, V_{GS} = 0	
Gate to Source Cutoff Voltage	$V_{GS(off)}$	−0.25	−1.1	−4.5	V	V_{DS} = 5.0 V, I_D = 10 μA	
Forward Transfer Admittance	$\lvert y_{fs} \rvert_1$	1.5	2.1		mS	V_{DS} = 5.0 V, I_D = 0.5 mA, f = 1.0 kHz	
Forward Transfer Admittance	$\lvert y_{fs} \rvert_2$	1.5	4.1		mS	V_{DS} = 5.0 V, V_{GS} = 0, f = 1.0 kHz	
Input Capacitance	C_{iss}		4.1		pF	V_{DS} = 10 V, V_{GS} = 0, f = 1.0 MHz	
Feedback Capacitance	C_{rss}		0.9		pF	V_{DS} = 10 V, V_{GS} = 0, f = 1.0 MHz	

I_{DSS} Classification

Marking	2SK160	K4	K5	K6	K7
	2SK160A	K24	K25	K26	K27
I_{DSS}(mA)		0.5 to 1.5	1.0 to 3.0	2.0 to 6.0	4.0 to 12

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Date Published July 1995 P
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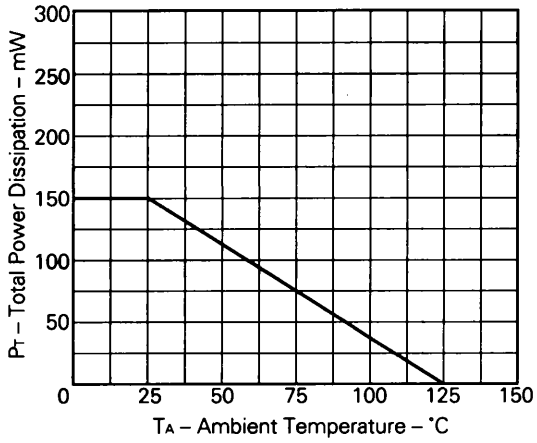
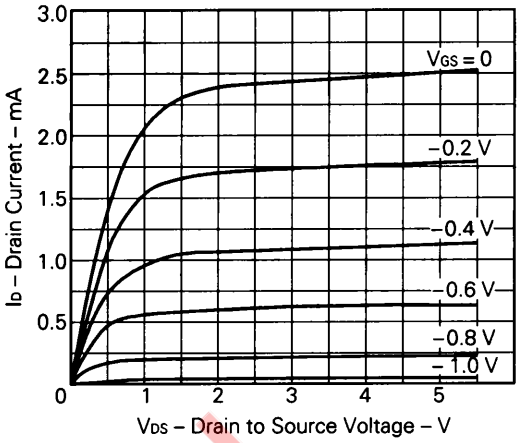
TYPICAL CHARACTERISTICS (T_A = 25 °C)

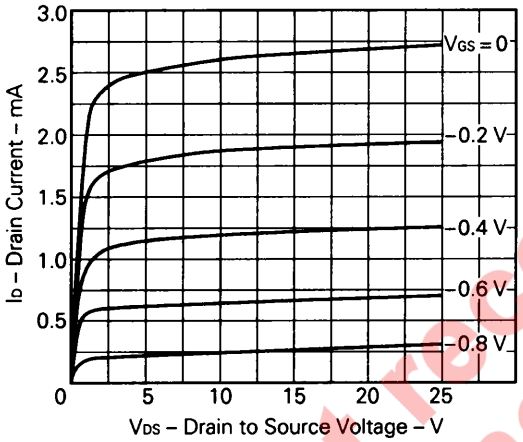
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



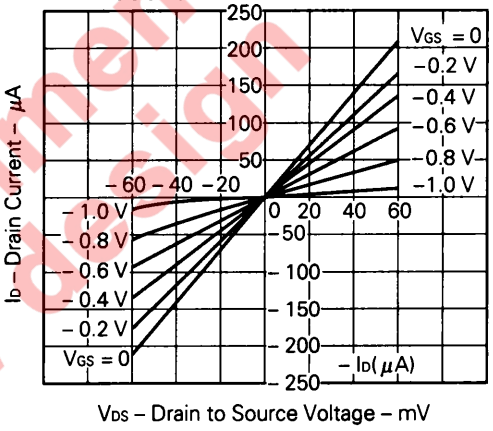
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



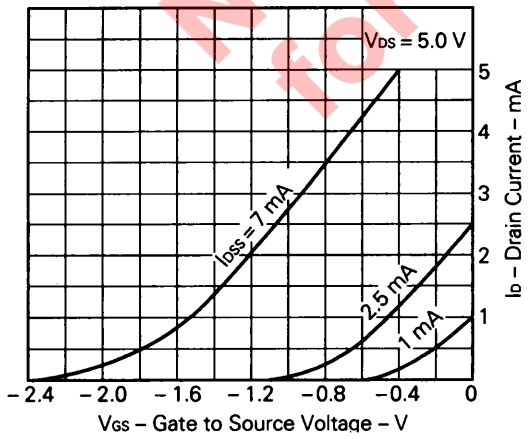
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



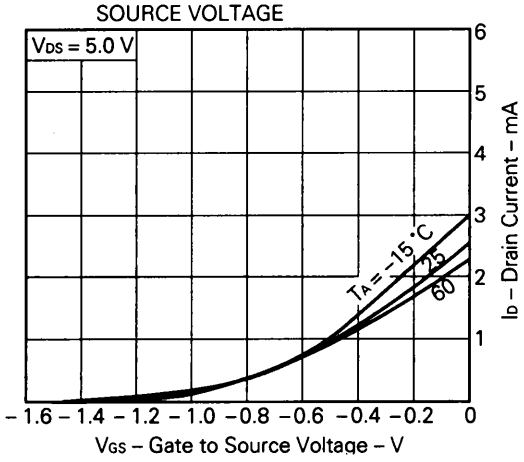
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



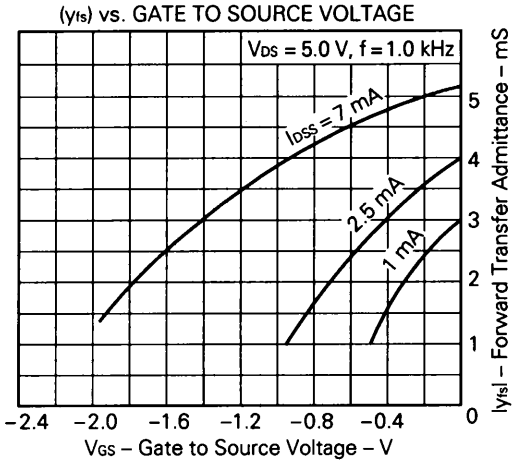
DRAIN CURRENT vs. GATE TO SOURCE VOLTAGE



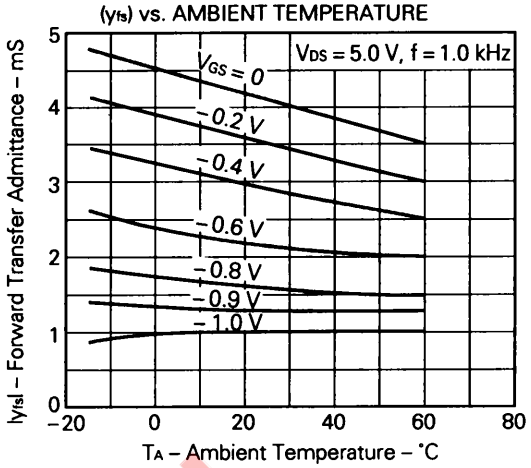
DRAIN CURRENT vs. GATE TO SOURCE VOLTAGE



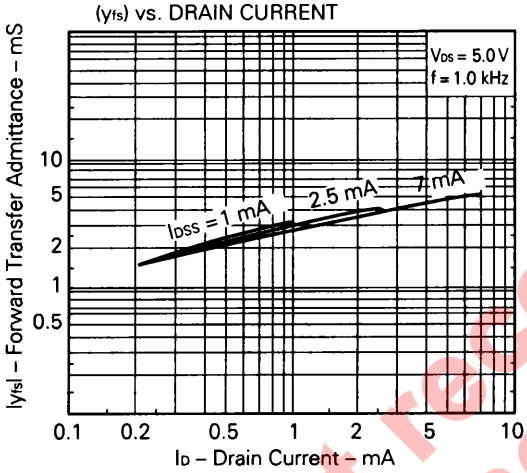
FORWARD TRANSFER ADMITTANCE
(y_{fs}) vs. GATE TO SOURCE VOLTAGE



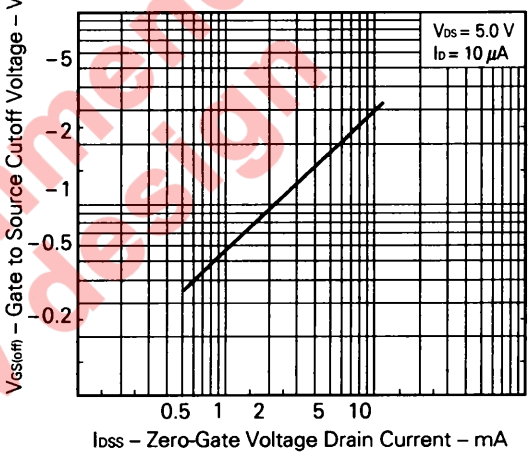
FORWARD TRANSFER ADMITTANCE
(y_{fs}) vs. AMBIENT TEMPERATURE



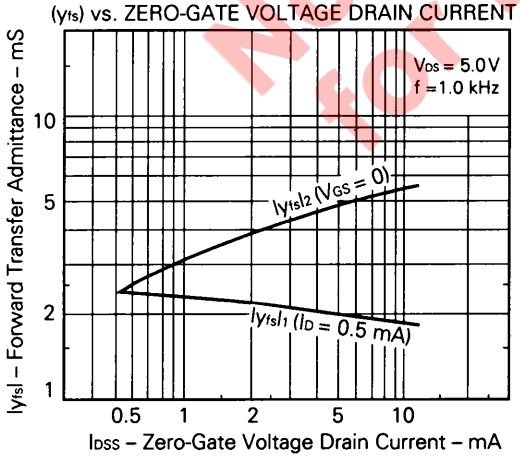
FORWARD TRANSFER ADMITTANCE
(y_{fs}) vs. DRAIN CURRENT



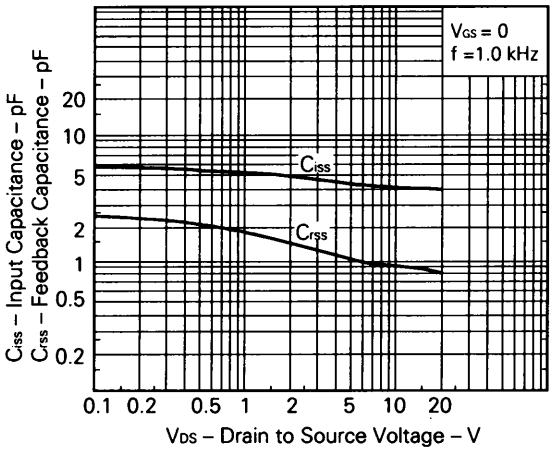
GATE TO SOURCE CUTOFF VOLTAGE vs.
ZERO-GATE VOLTAGE DRAIN CURRENT



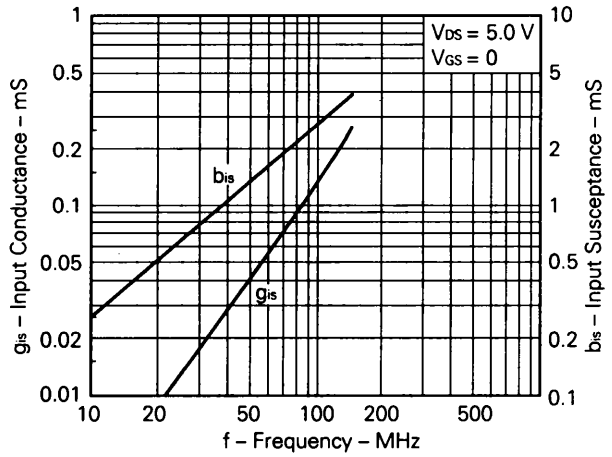
FORWARD TRANSFER ADMITTANCE
(y_{fs}) vs. ZERO-GATE VOLTAGE DRAIN CURRENT



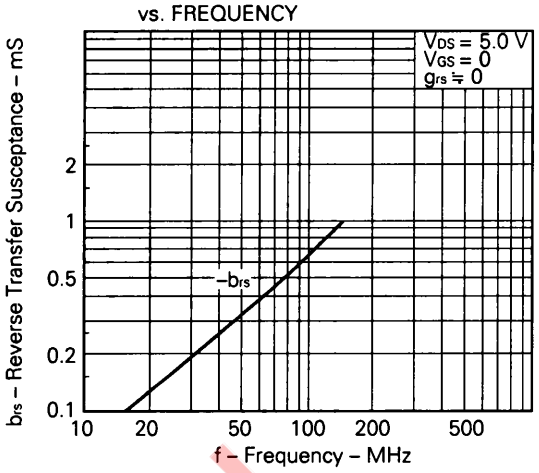
INPUT AND REVERSE TRANSFER CAPACITANCE
vs. DRAIN TO SOURCE VOLTAGE



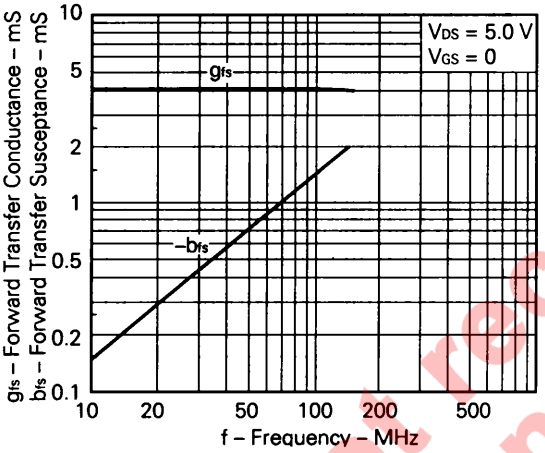
INPUT ADMITTANCE vs. FREQUENCY



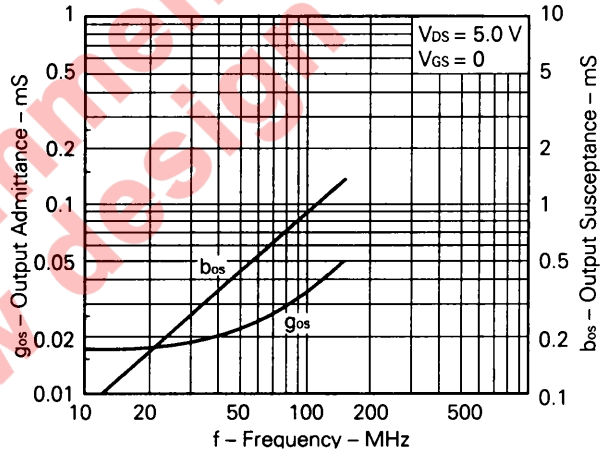
REVERSE TRANSFER ADMITTANCE vs. FREQUENCY



FORWARD TRANSFER ADMITTANCE vs. FREQUENCY



OUTPUT ADMITTANCE vs. FREQUENCY



[MEMO]

[MEMO]