

To our customers,

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## Old Company Name in Catalogs and Other Documents

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On April 1<sup>st</sup>, 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 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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

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Not recommended  
for new design

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2SK160, 2SK160A

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

DESCRIPTION

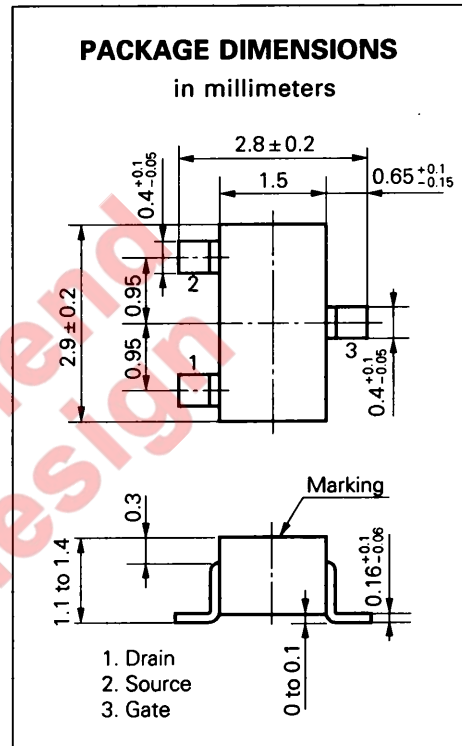
The 2SK160, 2SK160A are designed for hybrid IC which is designed for use in analog-switch, variable-resistor, FR amplifier and AF amplifier.

FEATURE

- Micro package.

ABSOLUTE MAXIMUM RATINGS (TA = 25 °C)

Maximum Voltages and Currents	2SK160	2SK160A	
Gate to Drain Voltage	V <sub>GD0</sub>	-30	-50 V
Gate to Source Voltage	V <sub>GSO</sub>	-30	-50 V
Drain to Source Voltage (V <sub>GS</sub> = -5.0 V)	V <sub>DSX</sub>	30	V
Drain Current	I <sub>D</sub>	20	mA
Gate Current	I <sub>G</sub>	10	mA
Maximum Power Dissipation (TA = 25 °C)			
Total Power Dissipation	P <sub>T</sub>	150	mW
Maximum Temperature			
Storage Temperature	T <sub>stg</sub>	-55 to +125	°C
Junction Temperature	T <sub>j</sub>	125	°C



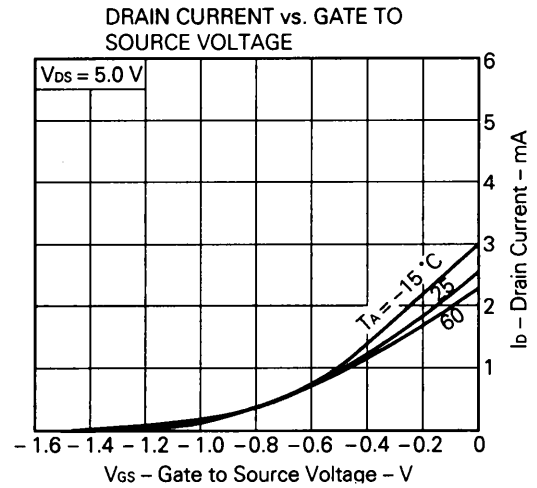
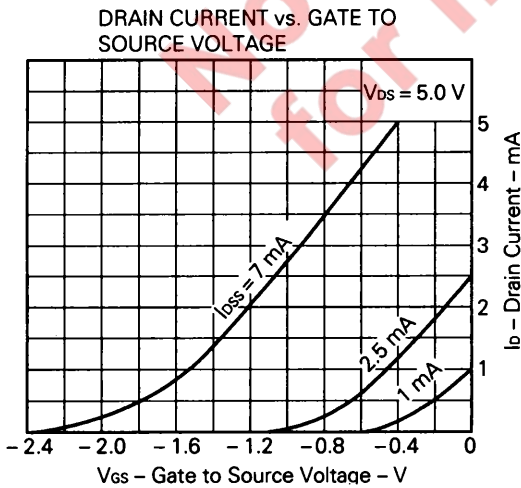
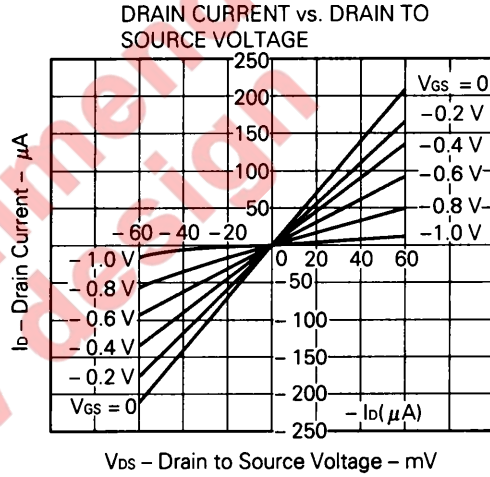
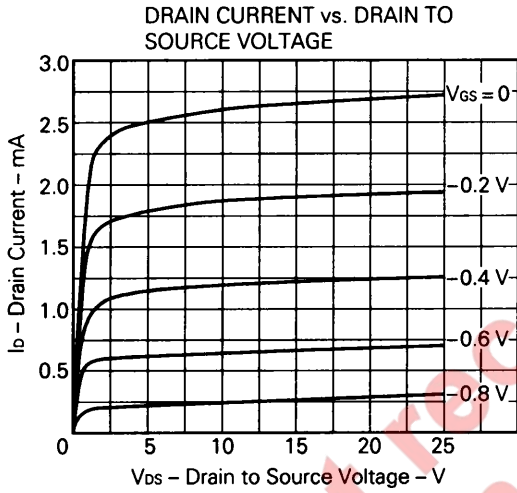
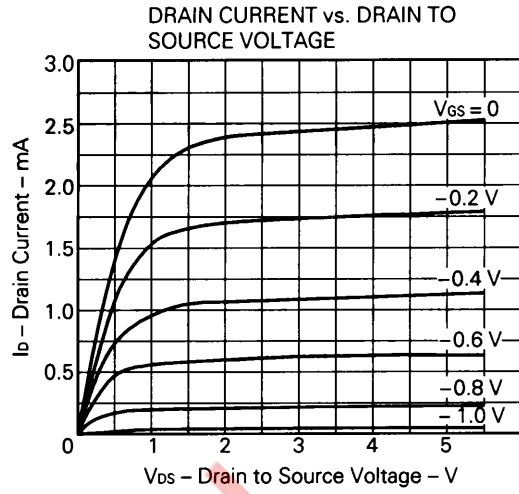
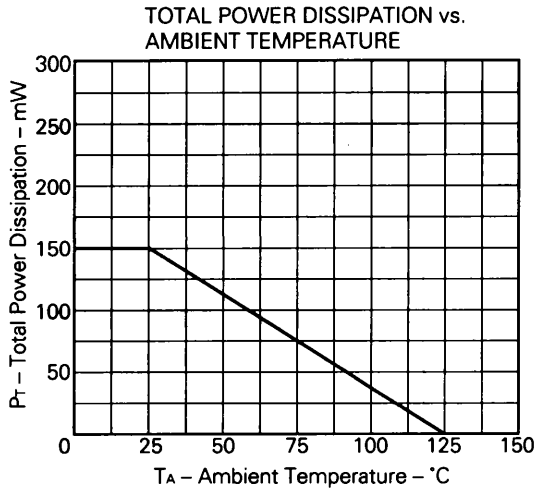
ELECTRICAL CHARACTERISTICS (TA = 25 °C)

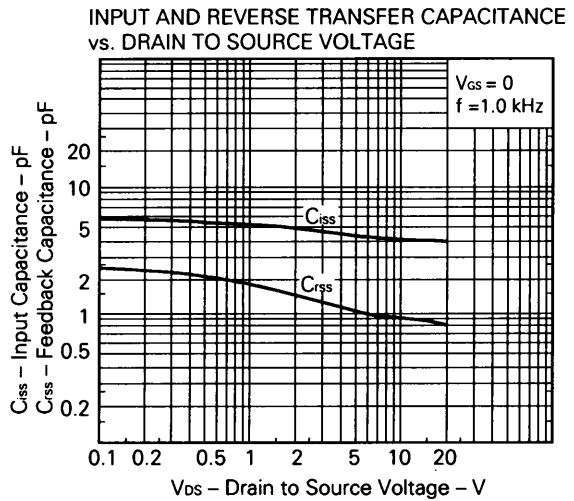
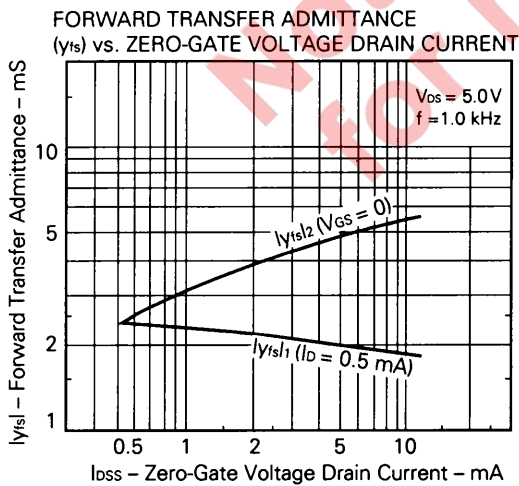
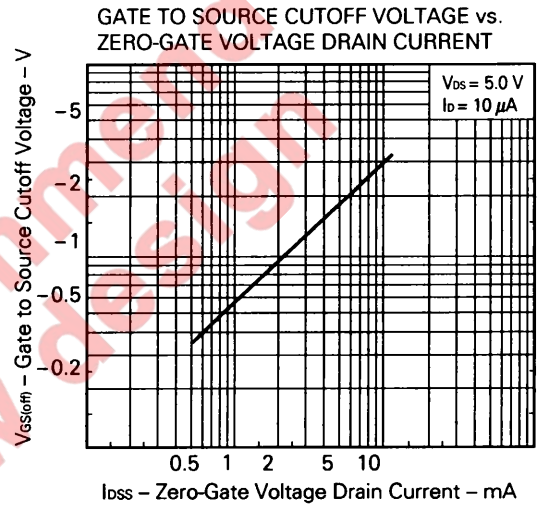
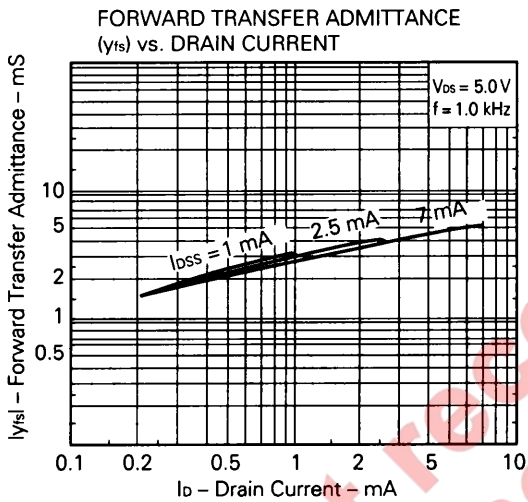
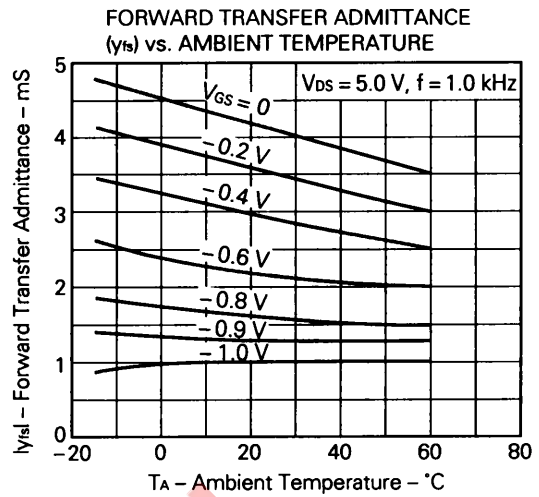
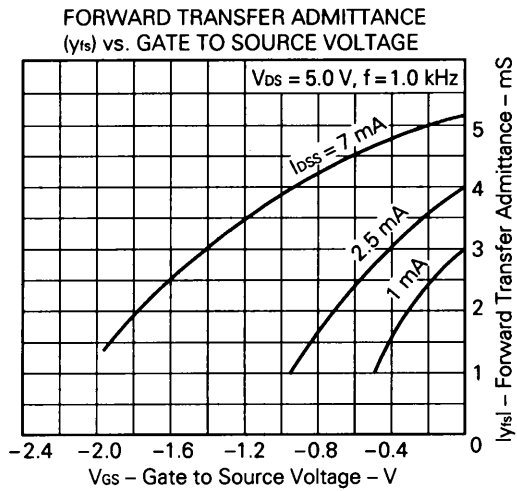
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION	
Gate Cutoff Current	I <sub>GSS</sub>			-10	nA	2SK160	V <sub>GS</sub> = -30 V, V <sub>DS</sub> = 0
				-1	nA	2SK160A	
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	0.5	2.5	12	mA	V <sub>DS</sub> = 5.0 V, V <sub>GS</sub> = 0	
Gate to Source Cutoff Voltage	V <sub>GS(off)</sub>	-0.25	-1.1	-4.5	V	V <sub>DS</sub> = 5.0 V, I <sub>D</sub> = 10 μA	
Forward Transfer Admittance	y <sub>fs1</sub>	1.5	2.1		mS	V <sub>DS</sub> = 5.0 V, I <sub>D</sub> = 0.5 mA, f = 1.0 kHz	
Forward Transfer Admittance	y <sub>fs2</sub>	1.5	4.1		mS	V <sub>DS</sub> = 5.0 V, V <sub>GS</sub> = 0, f = 1.0 kHz	
Input Capacitance	C <sub>iss</sub>		4.1		pF	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 0, f = 1.0 MHz	
Feedback Capacitance	C <sub>rss</sub>		0.9		pF	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 0, f = 1.0 MHz	

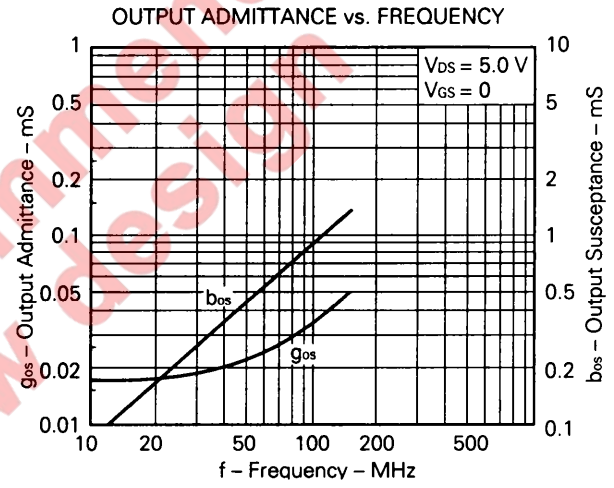
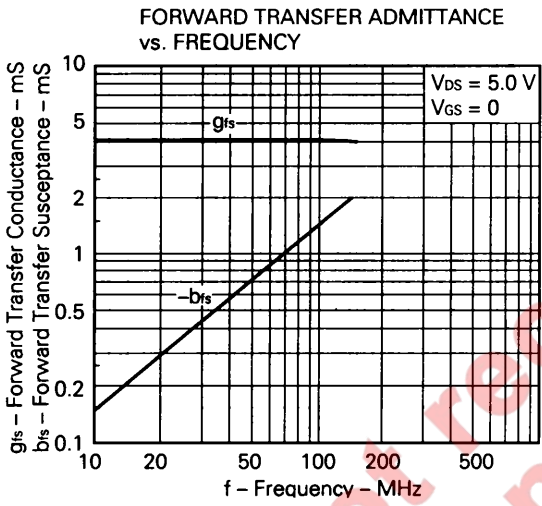
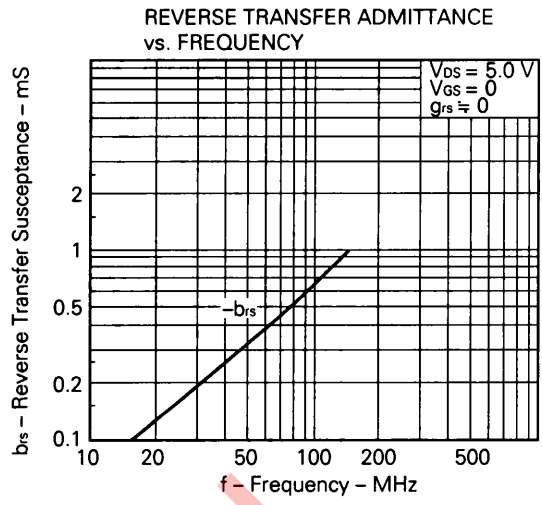
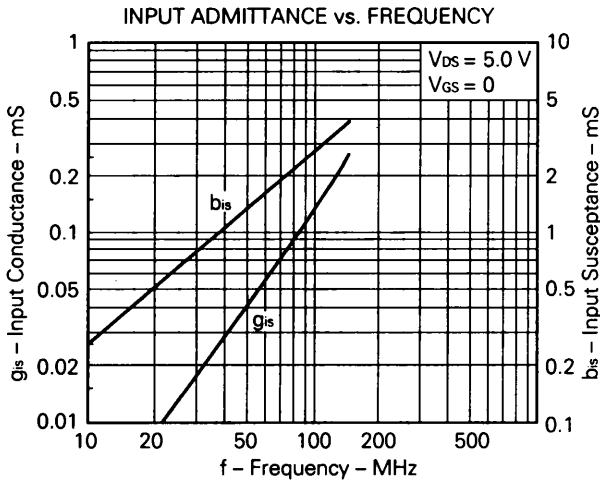
I<sub>DSS</sub> Classification

Marking	2SK160	K4	K5	K6	K7
	2SK160A	K24	K25	K26	K27
I <sub>DSS</sub> (mA)	0.5 to 1.5	1.0 to 3.0	2.0 to 6.0	4.0 to 12	

TYPICAL CHARACTERISTICS (T<sub>A</sub> = 25 °C)







[MEMO]

**Not recommend  
for new design**

## [MEMO]

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Special: Transportation equipment (automobiles, trains, ships, etc.), traffic control systems, anti-disaster systems, anti-crime systems, safety equipment and medical equipment (not specifically designed for life support)

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