To our customers,

Old Company Name in Catalogs and Other Documents

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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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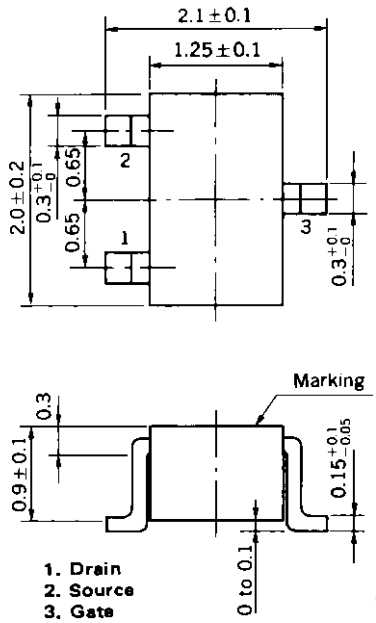
RENESAS

JNCTION FIELD EFFECT TRANSISTORS

2SK853, 2SK853A

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

PACKAGE DIMENSIONS
in millimeters



DESCRIPTION

The 2SK853, 2SK853A are designed for hybrid IC which is designed for use in analog-switch, variable-resistor, RF amplifier and AF amplifier.

FEATURE

- Micro package.

ABSOLUTE MAXIMUM RATINGS (T_a = 25 °C)

		2SK853	2SK853A	
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 Temperatures				
Storage Temperature	T_{stg}	−55 to +150		°C
Junction Temperature	T_j	150		°C

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

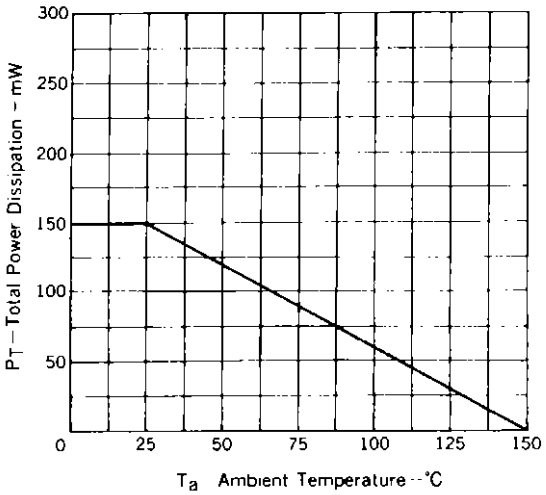
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Gate Cutoff Current	I_{GSS}			−10	nA	V_{GS} = −30 V, V_{DS} = 0
Zero-Gate Voltage Drain Current	I_{DSS}	0.5	2.5	12	mA	V_{DS} = 5.0 V, V_{GS} = 0
Gate to Source Cutoff Voltage	$V_{GS(off)}$	−0.25	−1.1	−4.5	V	V_{DS} = 5.0 V, I_D = 10 μA
Forward Transfer Admittance	$\|y_{fs}\|1$	1.5	2.1		mS	V_{DS} = 5.0 V, I_D = 0.5 mA, f = 1.0 kHz
Forward Transfer Admittance	$\|y_{fs}\|2$	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

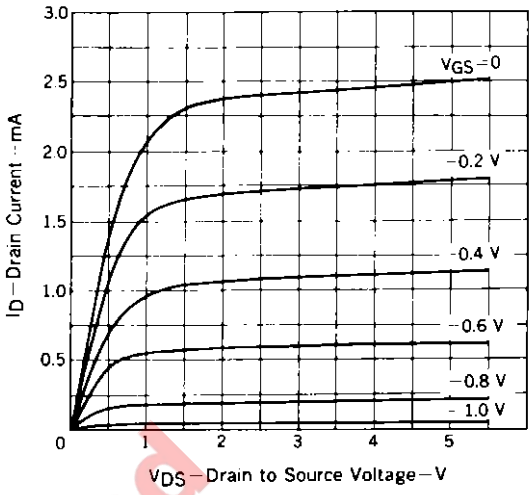
Marking	2SK853	K4	K5	K6	K7
	2SK853A	K24	K25	K26	K27
I_{DSS}(mA)		0.5 to 1.5	1.0 to 3.0	2.0 to 6.0	4.0 to 12

TYPICAL CHARACTERISTICS ($T_a = 25\ ^\circ C$)

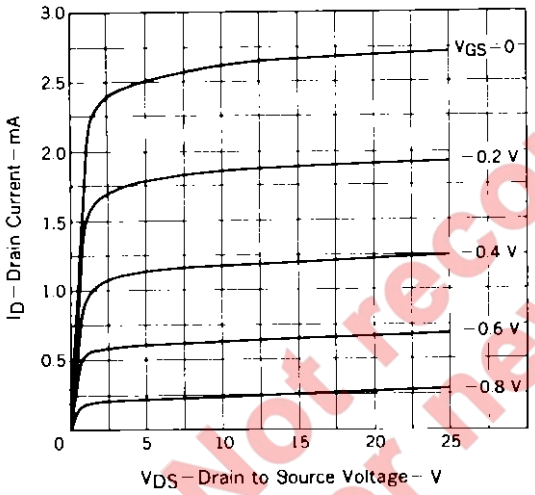
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



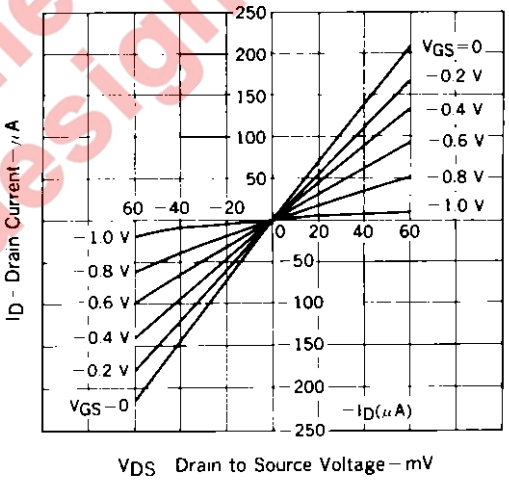
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



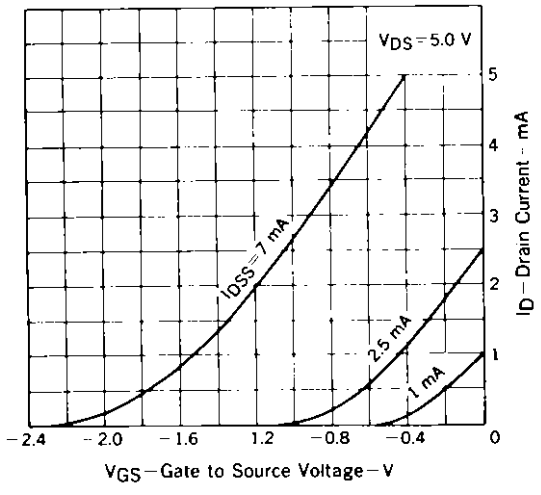
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



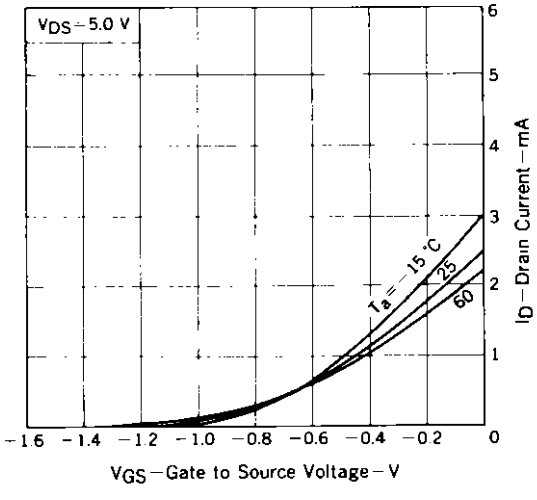
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



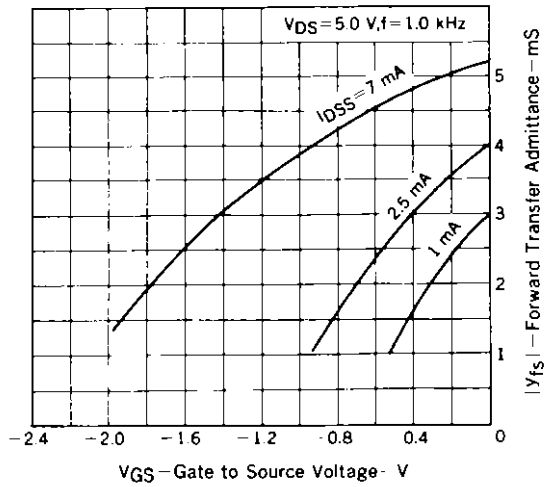
DRAIN CURRENT vs. GATE TO SOURCE VOLTAGE



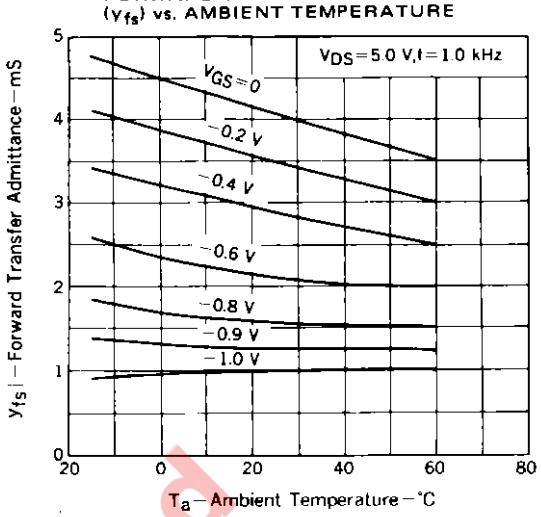
DRAIN CURRENT vs. GATE TO SOURCE VOLTAGE



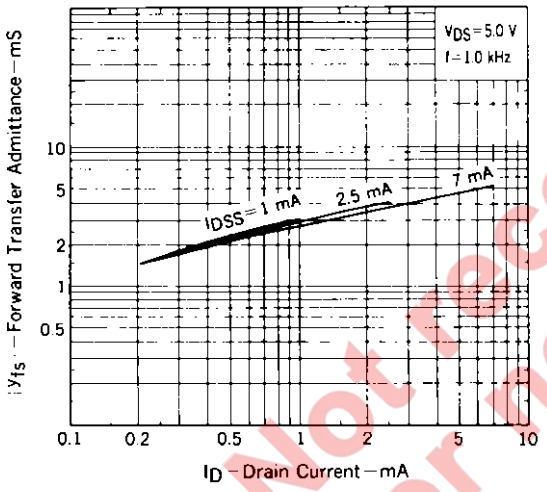
FORWARD TRANSFER ADMITTANCE
(y_{fs}) vs. GATE TO SOURCE VOLTAGE



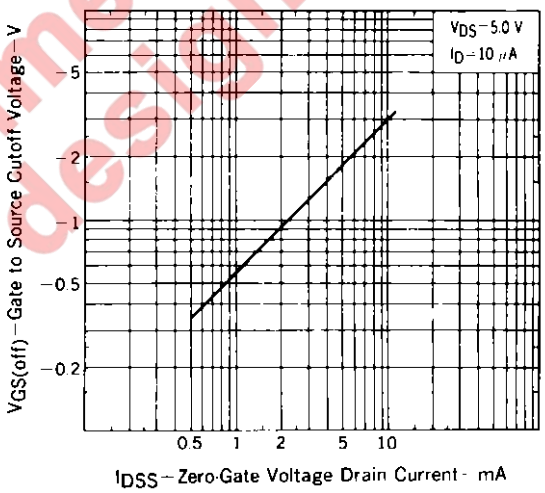
FORWARD TRANSFER ADMITTANCE
(y_{fs}) vs. AMBIENT TEMPERATURE



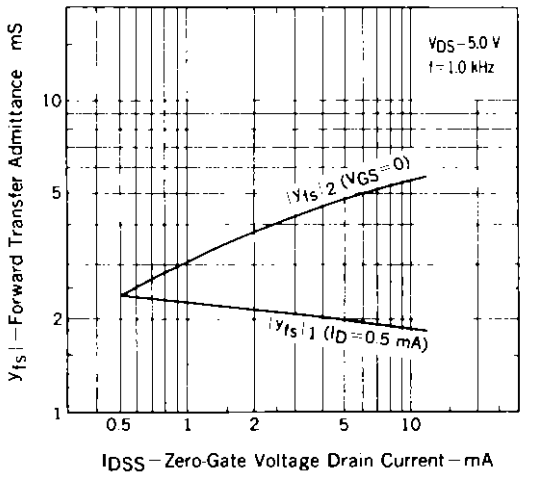
FORWARD TRANSFER ADMITTANCE
(y_{fs}) vs. DRAIN CURRENT



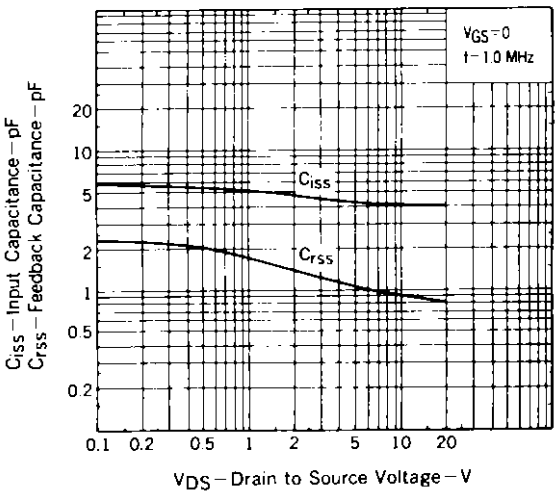
GATE TO SOURCE CUTOFF VOLTAGE vs.
ZERO-GATE VOLTAGE DRAIN CURRENT



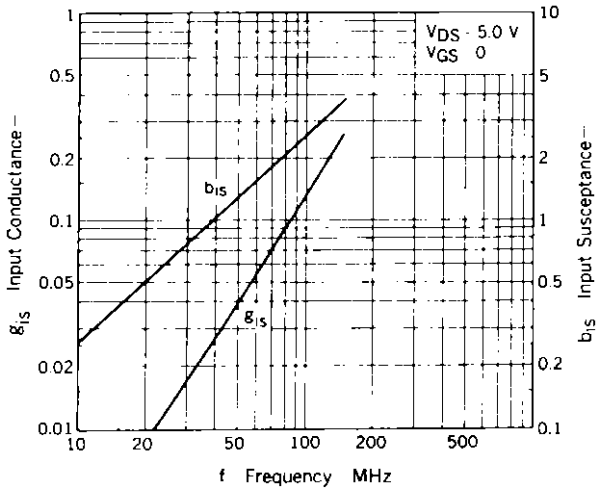
FORWARD TRANSFER ADMITTANCE
(y_{fs}) vs. ZERO-GATE VOLTAGE DRAIN CURRENT



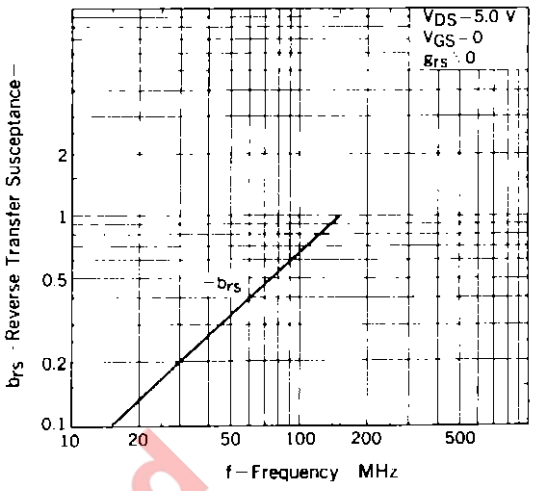
INPUT AND REVERSE TRANSFER CAPACITANCE
vs. DRAIN TO SOURCE VOLTAGE



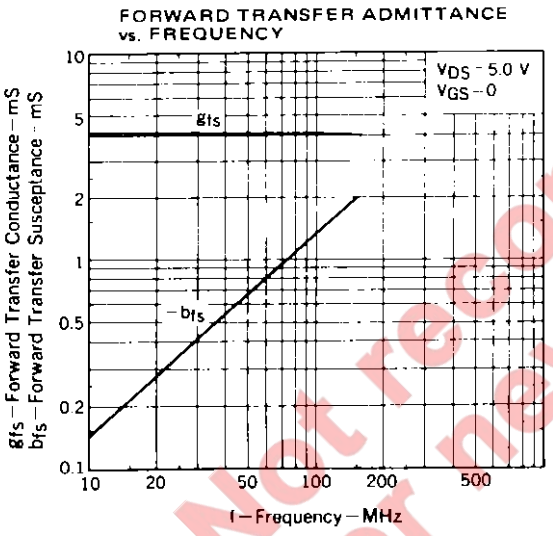
INPUT ADMITTANCE vs. FREQUENCY



REVERSE TRANSFER ADMITTANCE vs. FREQUENCY



FORWARD TRANSFER ADMITTANCE vs. FREQUENCY



OUTPUT ADMITTANCE vs. FREQUENCY