

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>)

Send any inquiries to <http://www.renesas.com/inquiry>.

EOL announced Product

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JUNCTION FIELD EFFECT TRANSISTOR

2SK3230B

N-CHANNEL SILICON JUNCTION FIELD EFFECT TRANSISTOR FOR IMPEDANCE CONVERTER OF ECM

DESCRIPTION

The 2SK3230B is suitable for converter of ECM.

General-purpose product.

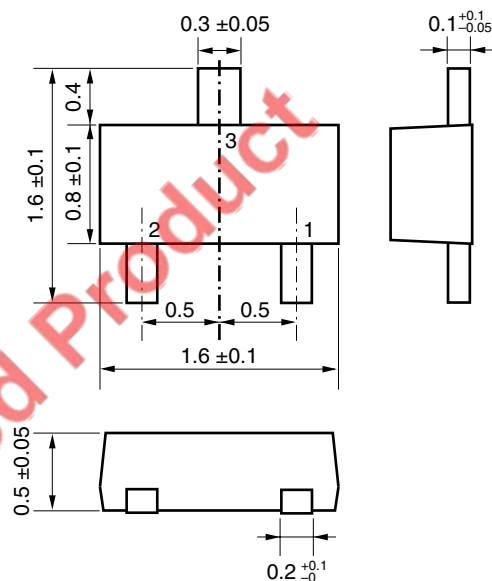
FEATURES

- Low noise:
–108.5 dB TYP. ($V_{DD} = 2.0\text{ V}$, $C = 5\text{ pF}$, $R_L = 2.2\text{ k}\Omega$)
- Especially suitable for audio and telephone
- Small package:
SC-89 (TUSM)

ORDERING INFORMATION

PART NUMBER	PACKAGE
2SK3230B	SC-89 (TUSM)

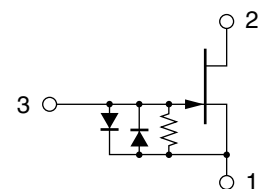
PACKAGE DRAWING (Unit: mm)



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Drain to Source Voltage ($V_{GS} = -1.0\text{ V}$)	V_{DSX}	20	V
Gate to Drain Voltage	V_{GDO}	–20	V
Drain Current	I_D	10	mA
Gate Current	I_G	10	mA
Total Power Dissipation	P_T	100	mW
Junction Temperature	T_J	125	$^\circ\text{C}$
Storage Temperature	T_{stg}	–55 to +125	$^\circ\text{C}$

EQUIVALENT CIRCUIT



1: Source
2: Drain
3: Gate

Caution Please take care of ESD (Electro Static Discharge) when you handle the device in this document.

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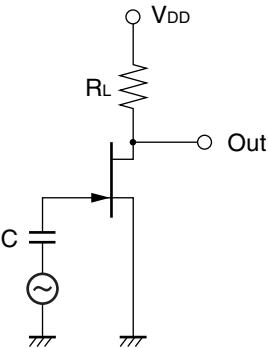
ELECTRICAL CHARACTERISTICS (T_A = 25°C)

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Zero Gate Voltage Drain Cut-off Current	I _{DSS}	V _{DS} = 2.0 V, V _{GS} = 0 V	90	200	430	μA
Gate Cut-off Voltage	V _{GS(off)}	V _{DS} = 2.0 V, I _D = 1.0 μA		-0.37	-1.0	V
Forward Transfer Admittance	y _{fs1}	V _{DS} = 2.0 V, I _D = 30 μA, f = 1.0 kHz	300	480		μS
	y _{fs2}	V _{DS} = 2.0 V, V _{GS} = 0 V, f = 1.0 kHz	750	1300		μS
Input Capacitance	C _{iss}	V _{DS} = 2.0 V, V _{GS} = 0 V, f = 1.0 MHz		4.0		pF
Voltage Gain	G _v	V _{DD} = 2.0 V, C = 5 pF, R _L = 2.2 kΩ, V _{IN} = 10 mV, f = 1 kHz		-1.0		dB
Noise Voltage	NV	V _{DD} = 2.0 V, C = 5 pF, R _L = 2.2 kΩ, A-curve		-108.5		dB

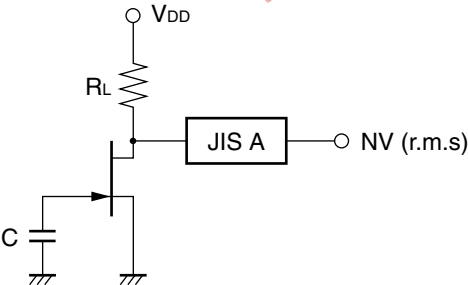
I_{DSS} CLASSIFICATION

MARKING	CE	CF	CH	CJ
I _{DSS} (μA)	90 to 180	150 to 240	210 to 350	320 to 430

VOLTAGE GAIN TEST CIRCUIT

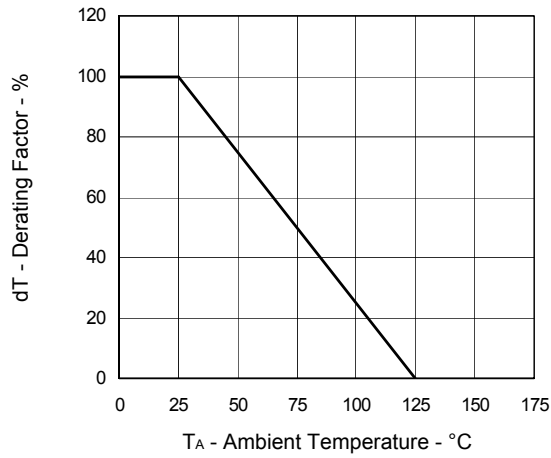


NOISE VOLTAGE TEST CIRCUIT

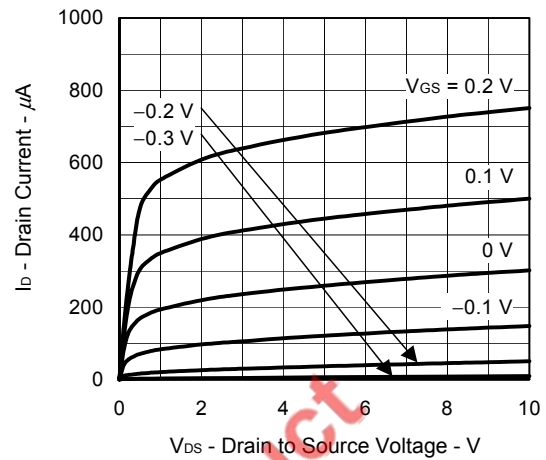


TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

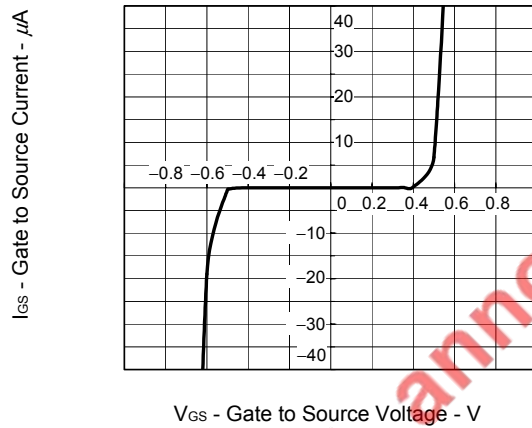
DERATING FACTOR OF POWER DISSIPATION



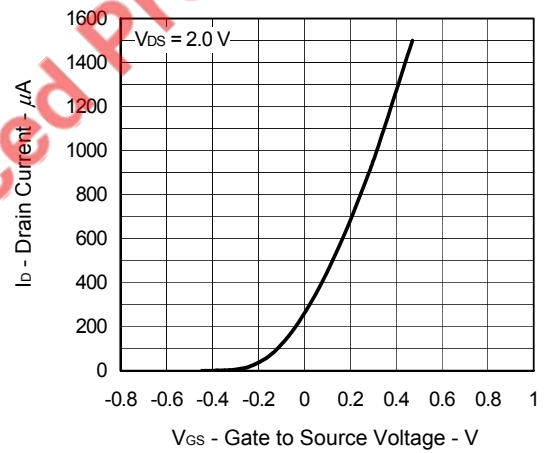
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



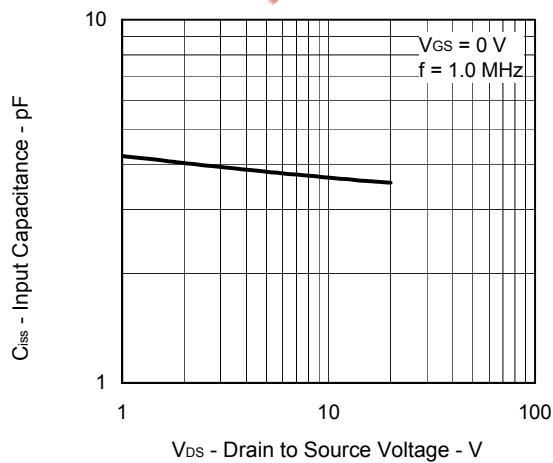
GATE TO SOURCE CURRENT vs. GATE TO SOURCE VOLTAGE



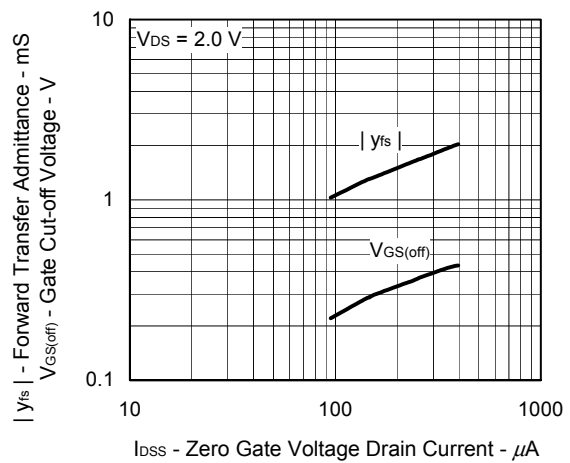
DRAIN CURRENT vs. GATE TO SOURCE VOLTAGE

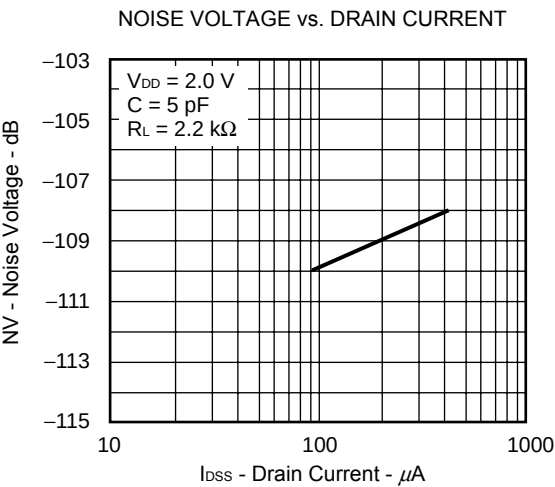
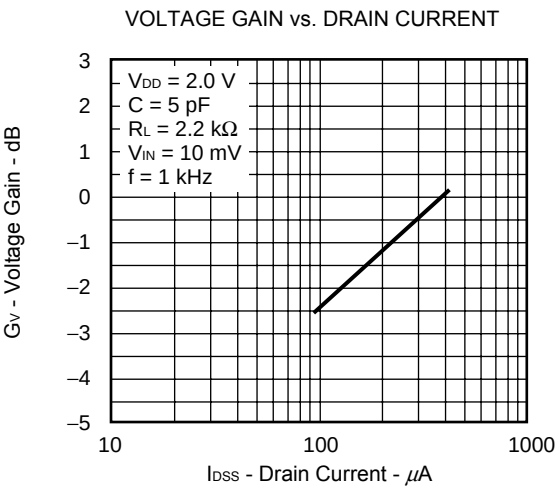


INPUT CAPACITANCE vs. DRAIN TO SOURCE VOLTAGE



FORWARD TRANSFER ADMITTANCE AND GATE CUT-OFF VOLTAGE vs. ZERO GATE VOLTAGE DRAIN CURRENT





EOL announced Product

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