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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JUNCTION FIELD EFFECT TRANSISTOR

Phase-out/Discontinued

2SK660

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

DESCRIPTION

The 2SK660 is suitable for converter of ECM.

FEATURES

- Compact package
- High forward transfer admittance
  $|y_{fs}|$ = 1200 μS TYP. (V_{DS} = 5 V, I_D = 0 μA)
- Low capacitance
  C_{iss} = 4.5 pF (V_{DS} = 5 V, V_{GS} = 0 V, f = 1 MHz)
- Includes diode and high resistance at G - S

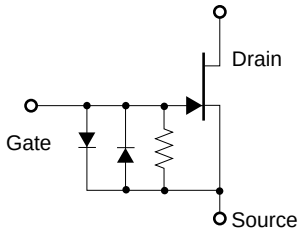
ORDERING INFORMATION

PART NUMBER	PACKAGE
2SK660	SST

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

Drain to Source Voltage [Note]	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	°C
Storage Temperature	T_{stg}	–55 to +125	°C

EQUIVALENT CIRCUIT



Note V_{GS} = –1.0 V

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

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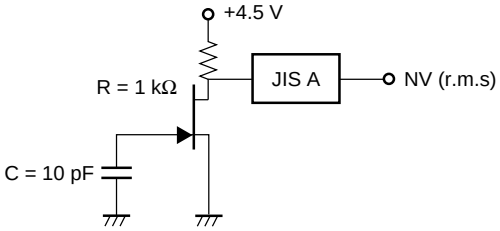
ELECTRICAL CHARACTERISTICS (T_A = 25°C)

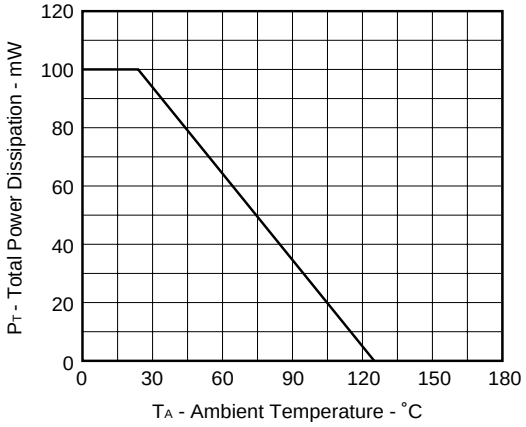
CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Zero Gate Voltage Drain Cut-off Current	I_{DSS}	V_{DS} = 5.0 V, V_{GS} = 0 V	60		500	μA
Gate Cut-off Voltage	$V_{GS(off)}$	V_{DS} = 5.0 V, I_D = 1.0 μA			–1.0	V
Forward Transfer Admittance	$\lvert y_{fs1} \rvert$	V_{DS} = 5.0 V, I_D = 30 μA, f = 1.0 kHz	150			μS
Forward Transfer Admittance	$\lvert y_{fs2} \rvert$	V_{DS} = 5.0 V, V_{GS} = 0 V, f = 1.0 kHz	150	1200		μS
Input Capacitance	C_{iss}	V_{DS} = 5.0 V		4.5	6.0	pF
Output Capacitance	C_{oss}	V_{GS} = 0 V		1.5	3.0	pF
Reverse Transfer Capacitance	C_{rss}	f = 1.0 MHz		1.2	3.0	pF
Noise Voltage	NV	See Test Circuit		1.0	3.0	μV

NOISE VOLTAGE TEST CIRCUIT

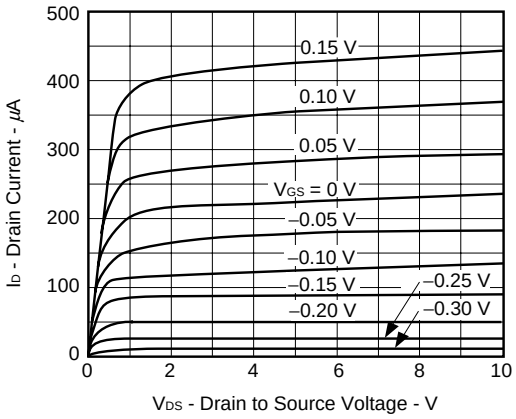


TYPICAL CHARACTERISTICS (T_A = 25°C)

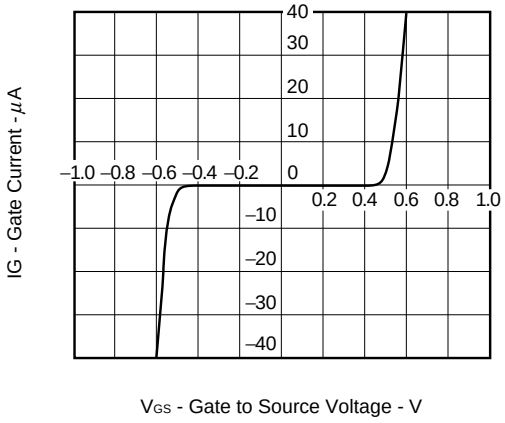
TOTAL POWER DISSIPATION vs.
AMBIENT TEMPERATURE



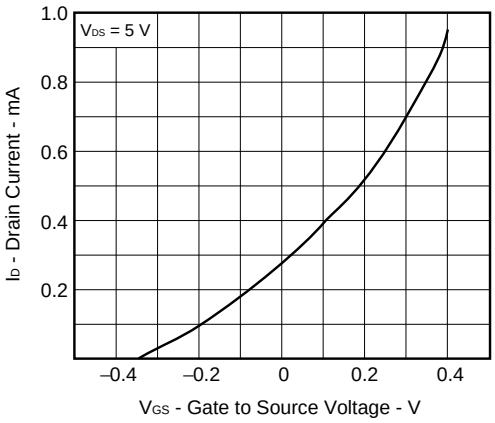
DRAIN CURRENT vs.
DRAIN TO SOURCE VOLTAGE



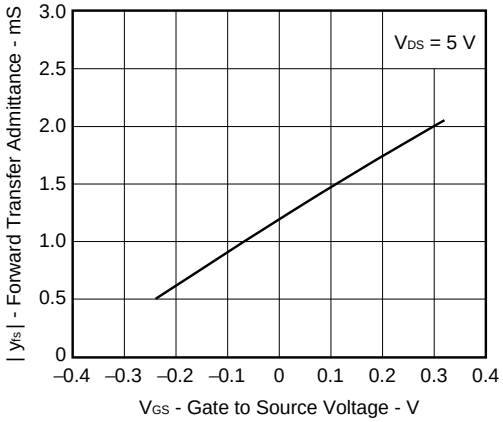
GATE TO SOURCE CURRENT vs.
GATE TO SOURCE VOLTAGE



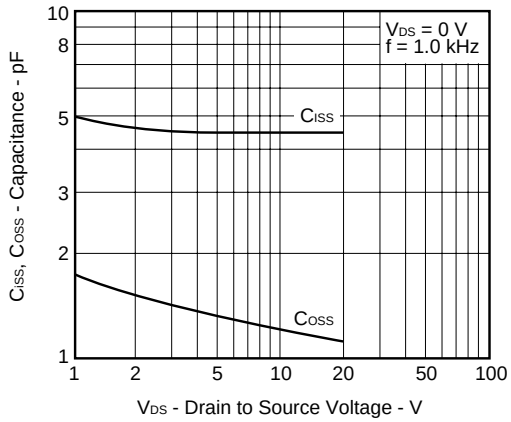
DRAIN CURRENT vs.
GATE TO SOURCE VOLTAGE



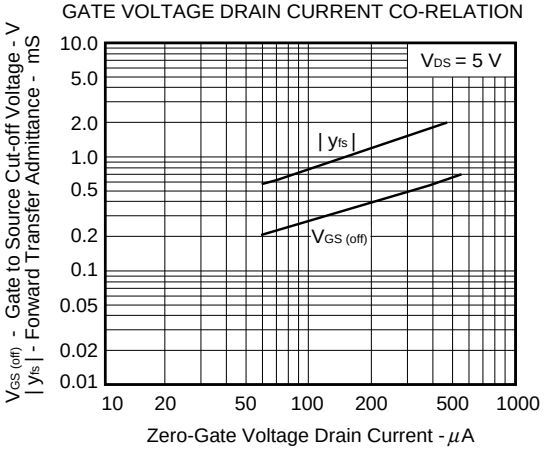
FORWARD TRANSFER ADMITTANCE vs.
GATE TO SOURCE VOLTAGE



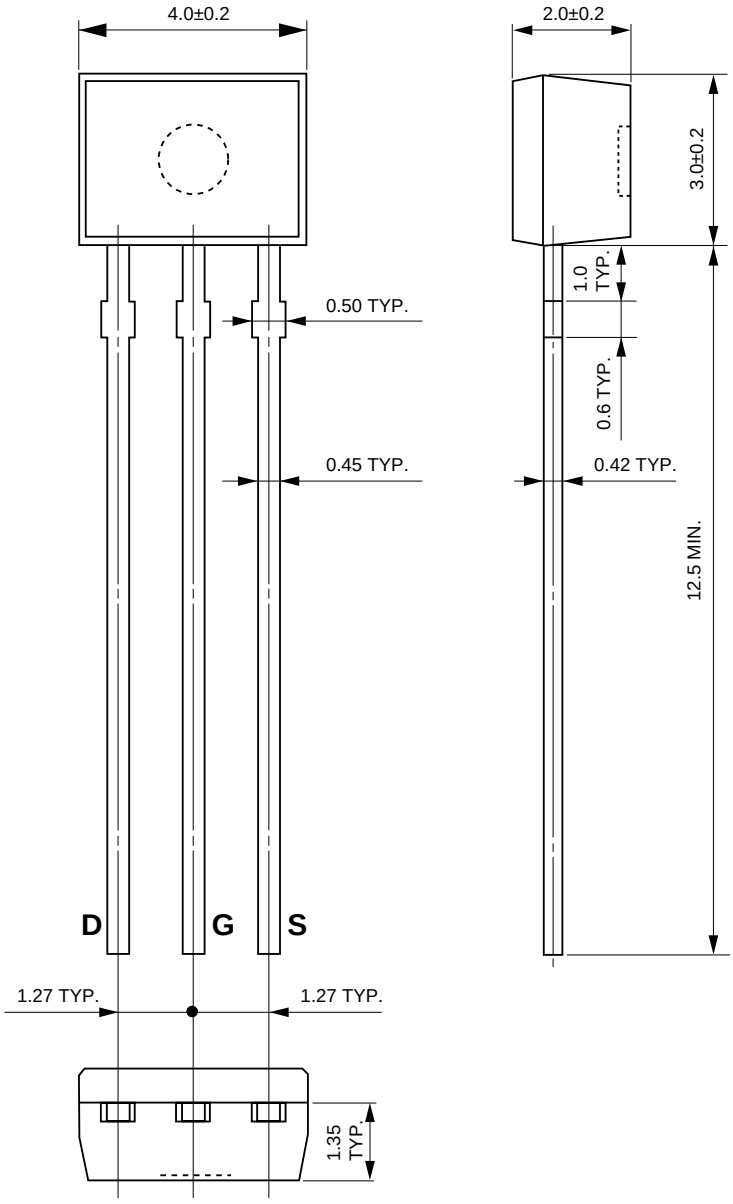
INPUT AND FEEDBACK CAPACITANCE vs.
DRAIN TO SOURCE VOLTAGE



FORWARD TRANSFER ADMITTANCE AND
GATE TO SOURCE CUT-OFF VOLTAGE vs. ZERO-
GATE VOLTAGE DRAIN CURRENT CO-RELATION



PACKAGE DRAWING (Unit: mm)



[MEMO]

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