

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>)

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

EOL announced Product

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JUNCTION FIELD EFFECT TRANSISTOR
2SK3718

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

DESCRIPTION

The 2SK3718 is suitable for converter of ECM.

FEATURES

- Low noise
- ★ NV = -117 dB TYP. ($V_{DS} = 4.5\text{ V}$, $C = 10\text{ pF}$, $R_L = 1.0\text{ k}\Omega$)
- Especially suitable for telephone, cellular phone & audio
- Small package SC-89 (TUSM)

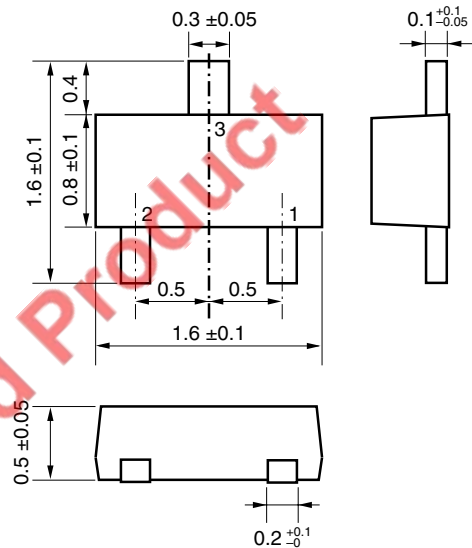
ORDERING INFORMATION

PART NUMBER	PACKAGE
2SK3718	SC-89 (TUSM)

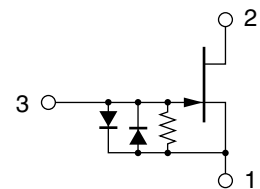
ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

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	$^\circ\text{C}$

PACKAGE DRAWING (Unit: mm)



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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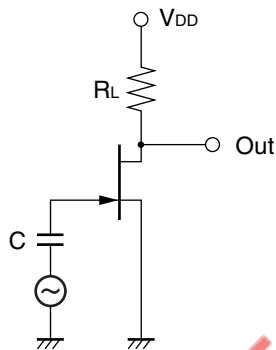
★ ELECTRICAL CHARACTERISTICS (T_A = 25°C)

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Zero Gate Voltage Drain Cut-off Current	I _{DSS}	V _{DS} = 5.0 V, V _{GS} = 0 V	90	250	430	μA
Gate Cut-off Voltage	V _{GS(off)}	V _{DS} = 5.0 V, I _D = 1.0 μA		-0.37	-1.0	V
Forward Transfer Admittance	y _{fs1}	V _{DS} = 5.0 V, I _D = 30 μA, f = 1.0 kHz	300	480		μS
	y _{fs2}	V _{DS} = 5.0 V, V _{GS} = 0 V, f = 1.0 kHz	750	1600		μS
Input Capacitance	C _{iss}	V _{DS} = 5.0 V, V _{GS} = 0 V, f = 1.0 MHz		3.9		pF
Voltage Gain	G _v	V _{DD} = 4.5 V, C = 10 pF, R _L = 1 kΩ, V _{IN} = 10 mV, f = 1 kHz		-1.3		dB
Noise Voltage	NV1	V _{DD} = 2.0 V, C = 5 pF, R _L = 2.2 kΩ, A-curve		-109.5		dB
	NV2	V _{DD} = 4.5 V, C = 10 pF, R _L = 1 kΩ, A-curve		-117	-112	dB

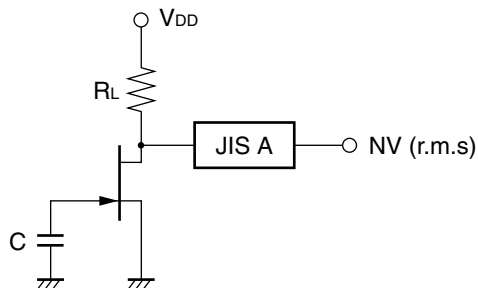
I_{DSS} CLASSIFICATION

MARKING	AE	AF	AH	AJ
I _{DSS} (μA)	90 to 180	150 to 240	210 to 350	320 to 430

★ VOLTAGE GAIN TEST CIRCUIT

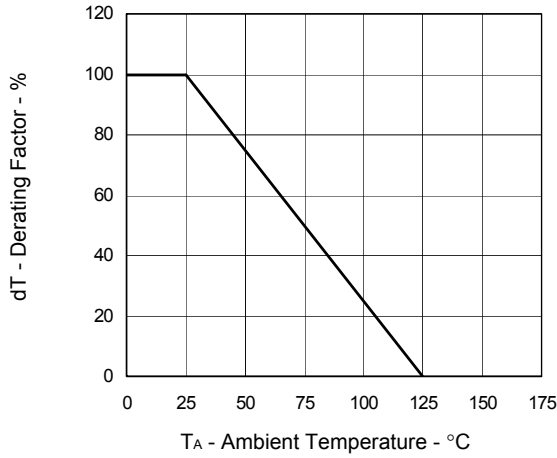


NOISE VOLTAGE TEST CIRCUIT

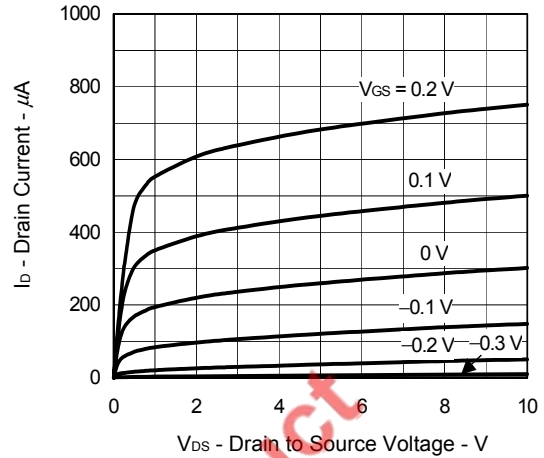


TYPICAL CHARACTERISTICS (T_A = 25°C)

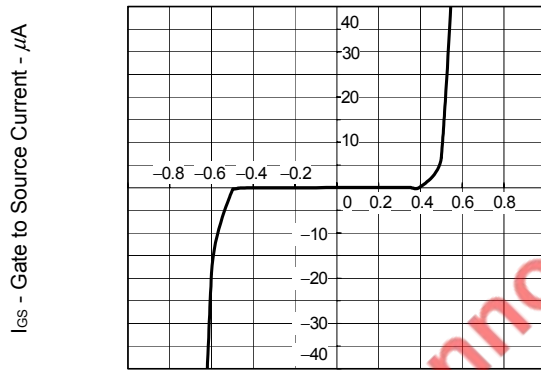
DERATING FACTOR OF POWER DISSIPATION



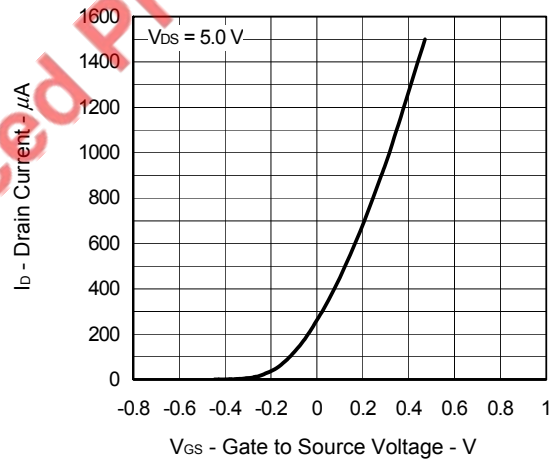
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



GATE TO SOURCE CURRENT vs. GATE TO SOURCE VOLTAGE

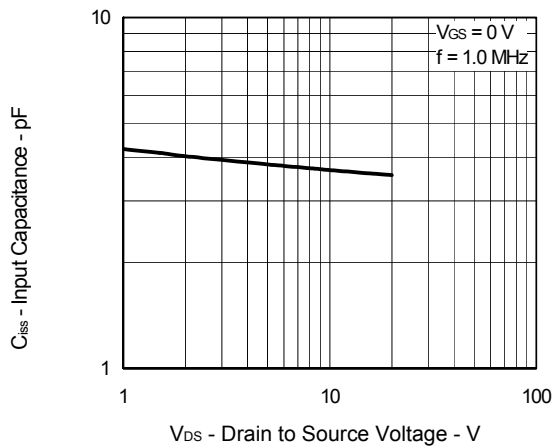


DRAIN CURRENT vs. GATE TO SOURCE VOLTAGE

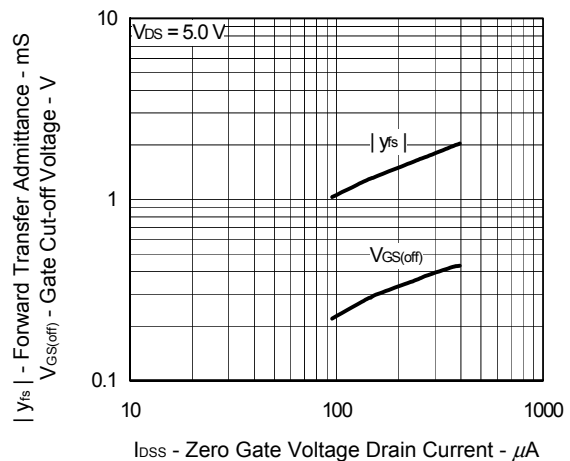


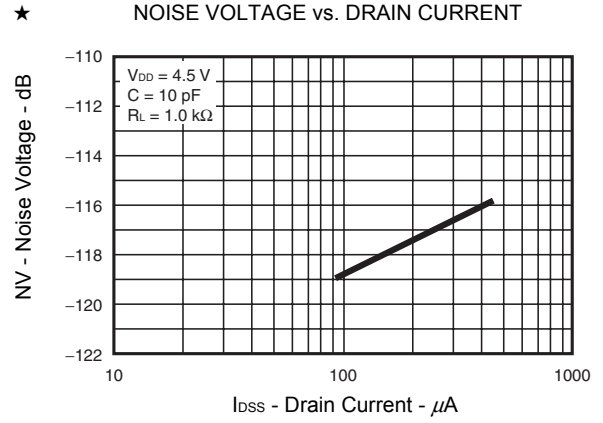
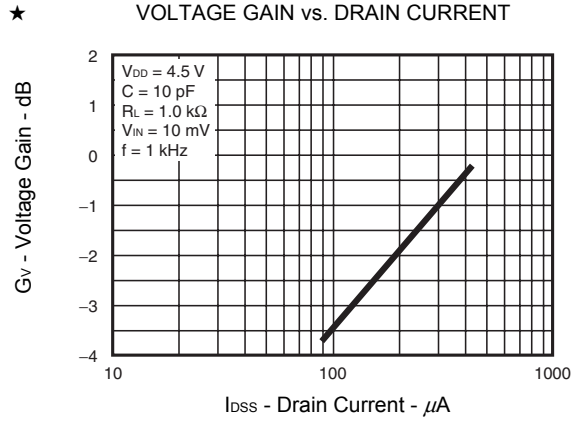
V_{GS} - Gate to Source Voltage - V

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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