DATA SHEET

NEC

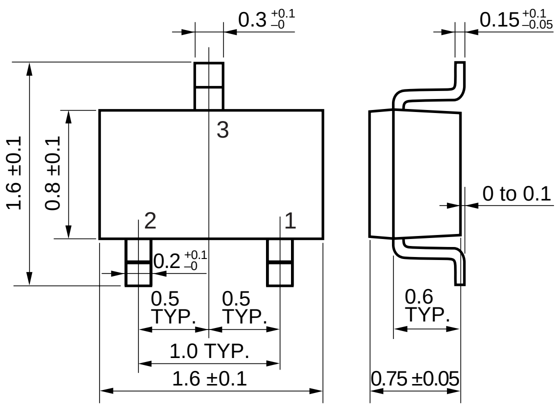
JUNCTION FIELD EFFECT TRANSISTOR
2SK2552C

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

DESCRIPTION

The 2SK2552C contains a diode and high resistivity between its gates and sources, for achieving short stability time during power-on. In addition, because of its compact package and low noise, the 2SK2552C is especially suitable for compact ECMs for audio or mobile devices such as cell-phones.

PACKAGE DRAWING (Unit: mm)



FEATURES

- Low noise:
  −108.5 dB TYP. (V_{DD} = 2.0 V, C = 5 pF, R_L = 2.2 kΩ)
- Containing a diode and high resistivity, short stability time is achieved during power-on.
- Small package: SC-75 (USM)

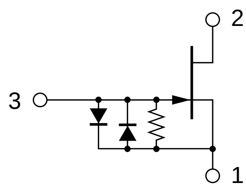
ORDERING INFORMATION

PART NUMBER	PACKAGE
2SK2552C	SC-75 (USM)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

Drain to Source Voltage (V_{GS} = −1.0 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	°C
Storage Temperature	T_{stg}	−55 to +125	°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.

The information in this document is subject to change without notice. Before using this document, please confirm that this is the latest version.
Not all products and/or types are available in every country. Please check with an NEC Electronics sales representative for availability and additional information.

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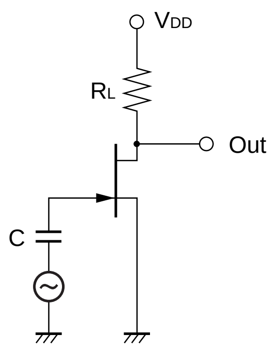
ELECTRICAL CHARACTERISTICS (T_A = 25°C)

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	$\lvert y_{fs1} \rvert$	V_{DS} = 2.0 V, I_D = 30 μA, f = 1.0 kHz	300	480		μS
	$\lvert y_{fs2} \rvert$	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

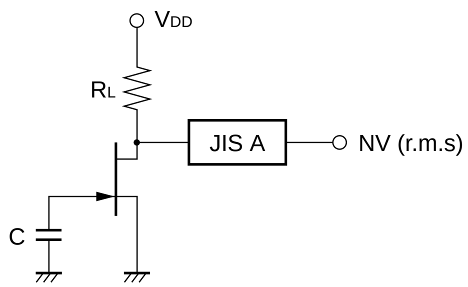
I_{DSS} CLASSIFICATION

MARKING	EE	EF	EH	EJ
I_{DSS} (μA)	90 to 180	150 to 240	210 to 350	320 to 430

VOLTAGE GAIN TEST CIRCUIT

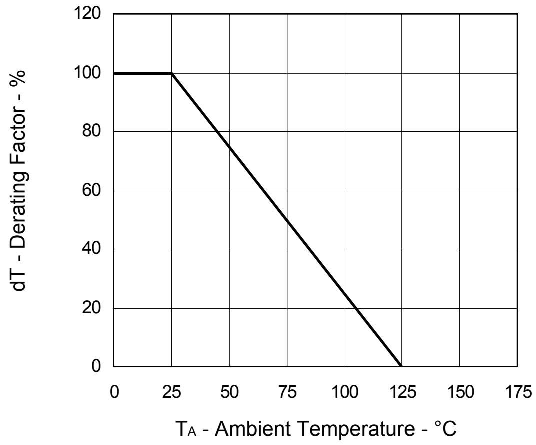


NOISE VOLTAGE TEST CIRCUIT

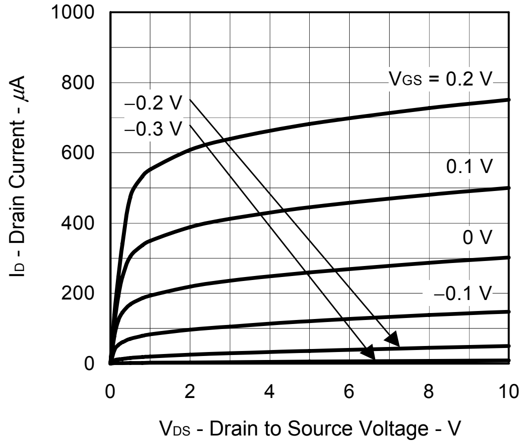


TYPICAL CHARACTERISTICS (T_A = 25°C)

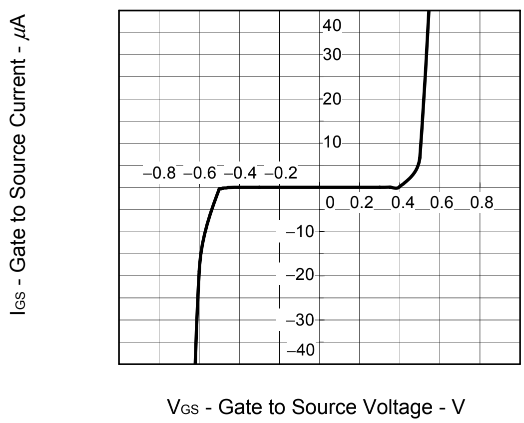
DERATING FACTOR OF POWER DISSIPATION



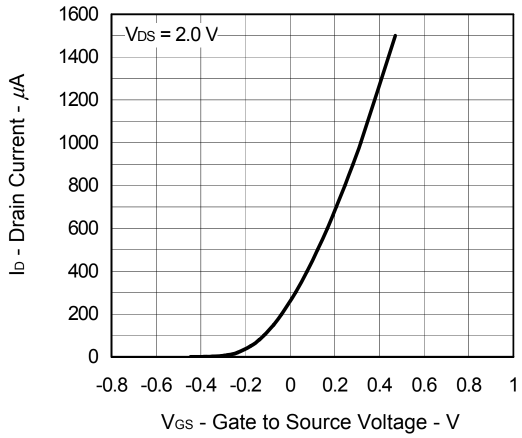
DRAIN CURRENT vs.
DRAIN TO SOURCE VOLTAGE



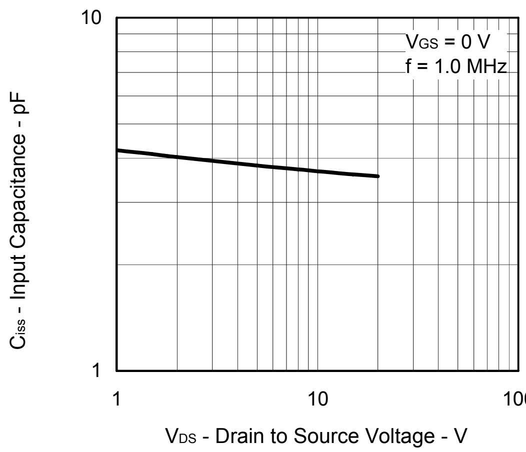
GATE TO SOURCE CURRENT vs.
GATE TO SOURCE VOLTAGE



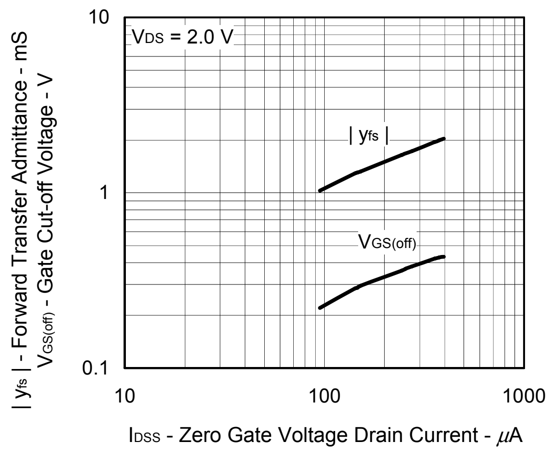
DRAIN CURRENT vs.
GATE TO SOURCE VOLTAGE



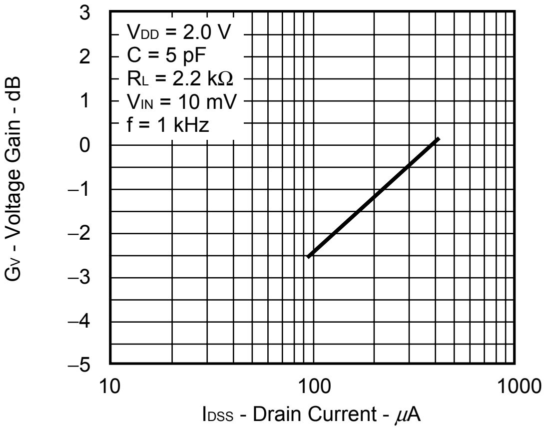
INPUT CAPACITANCE vs.
DRAIN TO SOURCE VOLTAGE



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



VOLTAGE GAIN vs. DRAIN CURRENT



NOISE VOLTAGE vs. DRAIN CURRENT