
2SK291

Silicon N-Channel Junction FET

HITACHI

Application

Low frequency low noise amplifier

Outline

TO-92 (2)



1. Drain
2. Source
3. Gate

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Gate to drain voltage	V_{GDO}	-15	V
Gate to source voltage	V_{GSO}	-15	V
Drain current	I_D	50	mA
Gate current	I_G	5	mA
Channel power dissipation	Pch	300	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

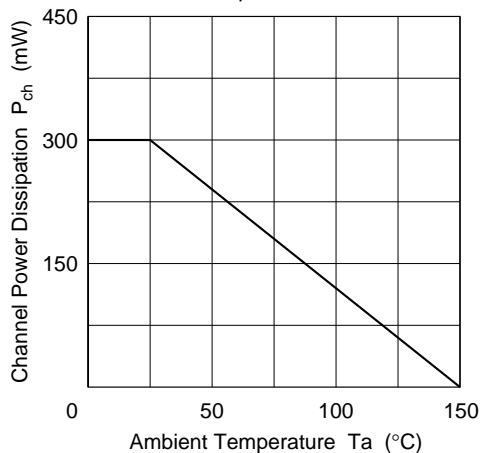
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Gate to drain breakdown voltage	$V_{(BR)GDO}$	-15	—	—	V	$I_G = -100 \mu A$
Gate to source breakdown voltage	$V_{(BR)GSO}$	-15	—	—	V	$I_G = -100 \mu A$
Gate cutoff current	I_{GSS}	—	—	10	nA	$V_{GS} = -7 V, V_{DS} = 0$
Drain current	I_{DSS}^{*1}	5	—	50	mA	$V_{DS} = 5 V, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	—	—	-3.0	V	$V_{DS} = 5 V, I_D = 100 \mu A$
Forward transfer admittance	$ y_{fs} $	25	45	—	mS	$V_{DS} = 5 V, V_{GS} = 0, f = 1 \text{ kHz}$
Input capacitance	Ciss	—	8.5	—	pF	$V_{DS} = 5 V, V_{GS} = 0, f = 1 \text{ MHz}$
Noise voltage referred to input	e_n	—	1.2	—	nV/ $\sqrt{\text{Hz}}$	$V_{DS} = 5 V, I_D = 5 \text{ mA}, R_g = 0, f = 100 \text{ kHz}$

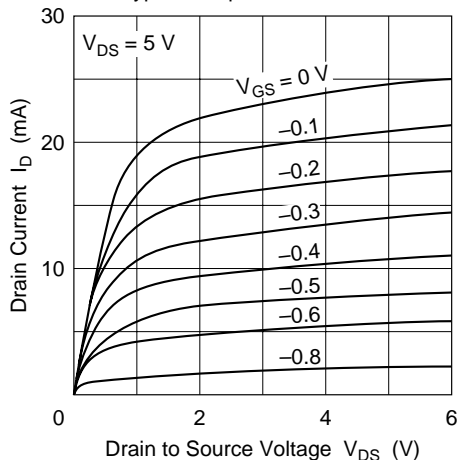
Note: 1. The 2SK291 is grouped by I_{DSS} as follows.

Grade	P	Q	R	S	T
I_{DSS}	5 to 16	14 to 24	20 to 32	28 to 42	36 to 50

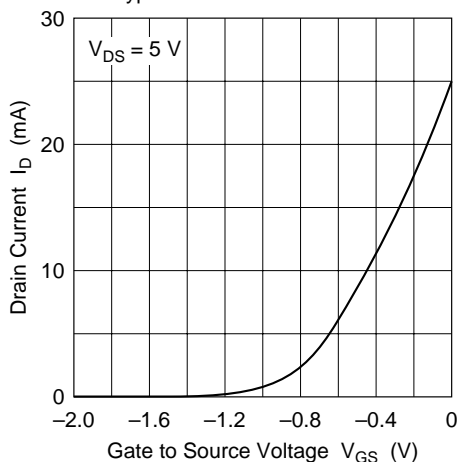
Maximum Channel Power Dissipation Curve



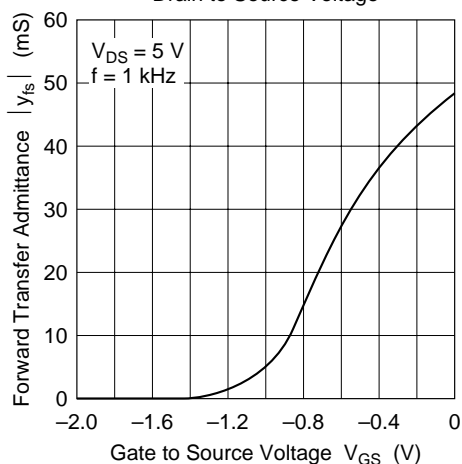
Typical Output Characteristics



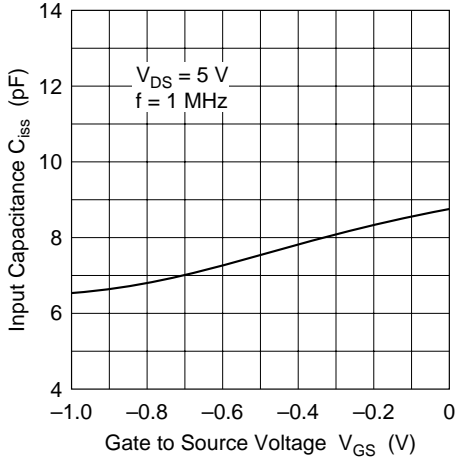
Typical Transfer Characteristics



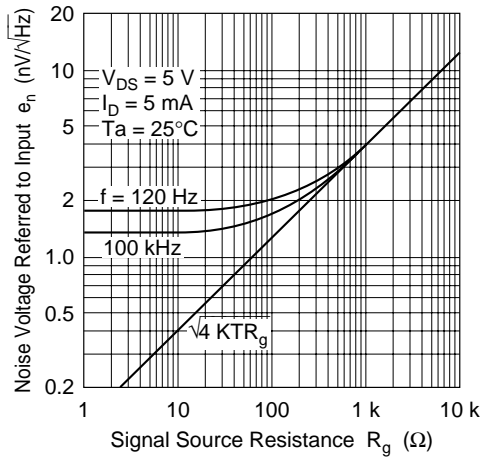
Forward Transfer Admittance vs. Drain to Source Voltage



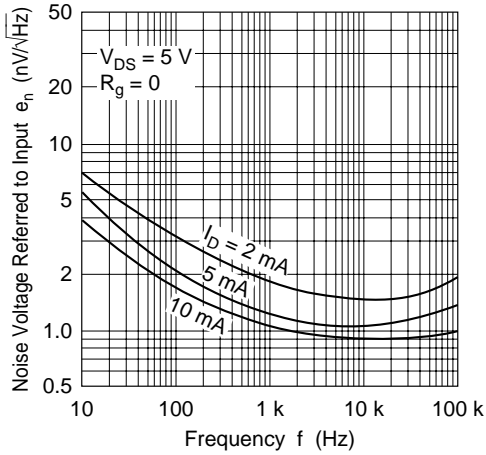
Input Capacitance vs. Gate to Source Voltage



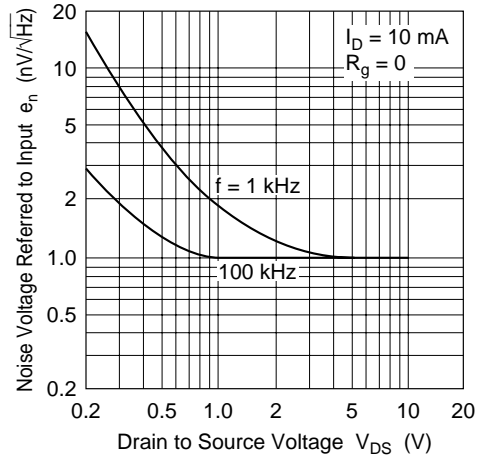
Noise Voltage Referred to Input vs. Signal Source Resistance



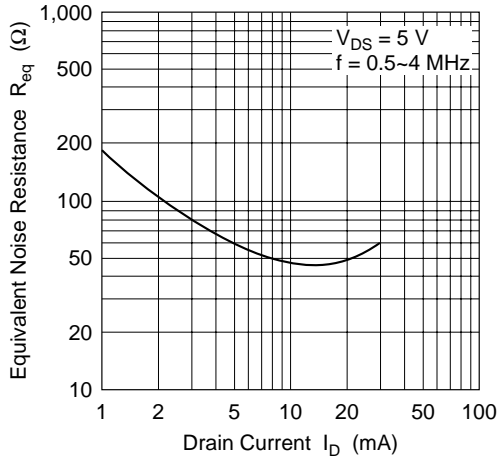
Noise Voltage Referred to Input vs. Frequency



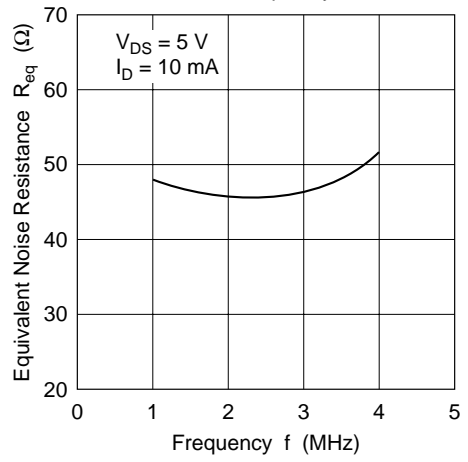
Noise Voltage Referred to Input vs. Drain to Source Voltage

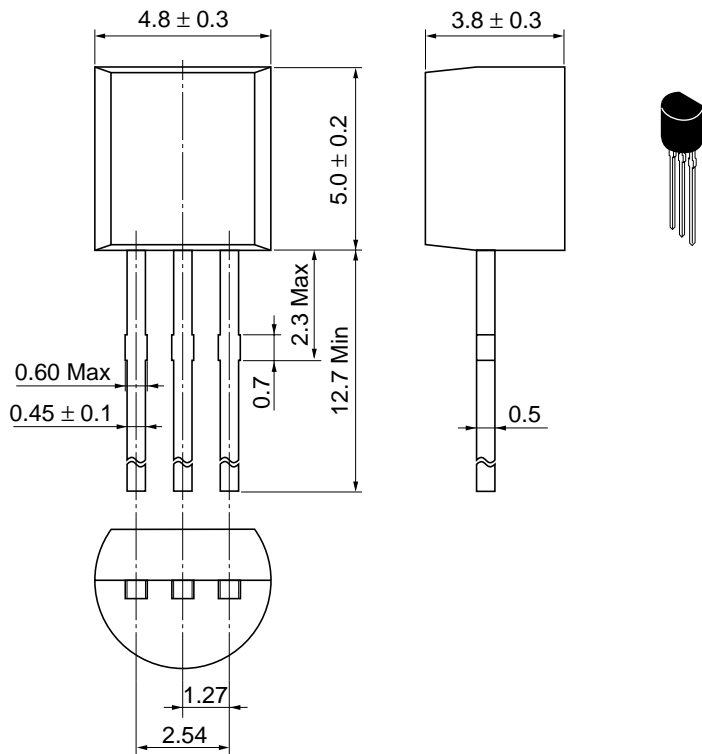


Equivalent Noise Resistance vs. Drain Current



Equivalent Noise Resistance vs. Frequency





Hitachi Code	TO-92 (2)
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.25 g

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