
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 |

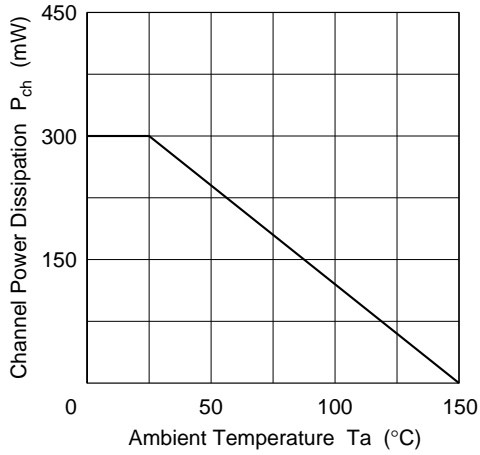
Electrical Characteristics (Ta = 25°C)

| 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/ $\sqrt{\text{Hz}}$ | $V_{DS} = 5 V, I_D = 5 \text{ mA}, R_g = 0, f = 100 \text{ kHz}$ |

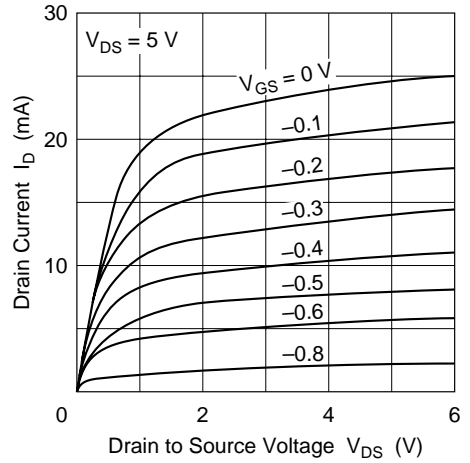
Note: 1. The 2SK291 is grouped by I_{DSS} as follows.

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

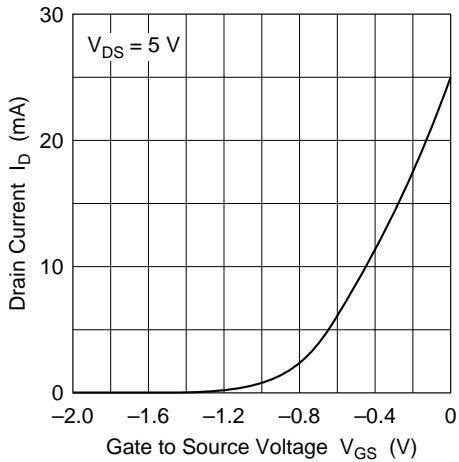
Maximum Channel Power Dissipation Curve



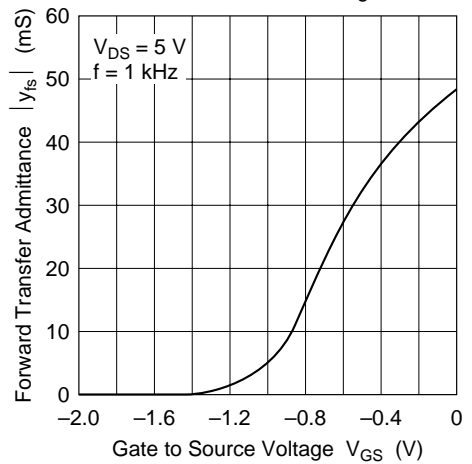
Typical Output Characteristics

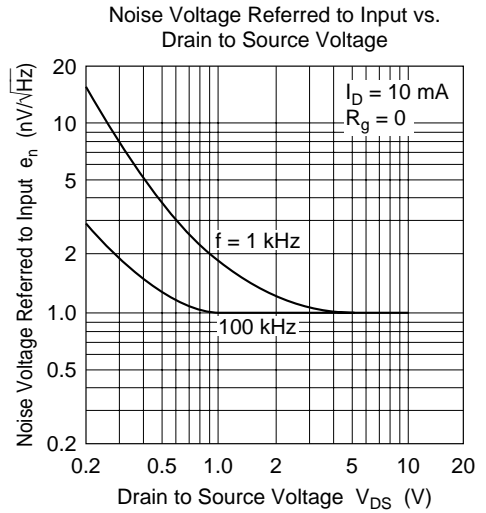
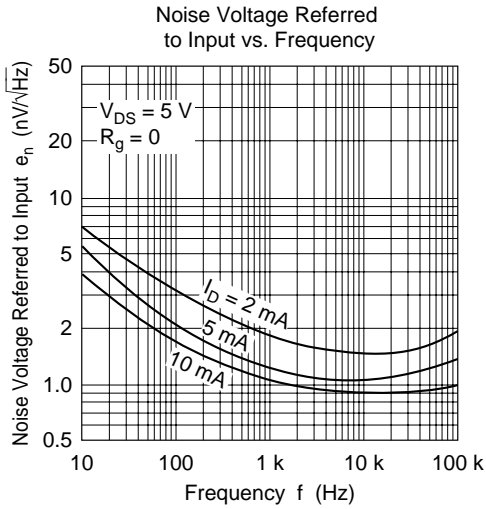
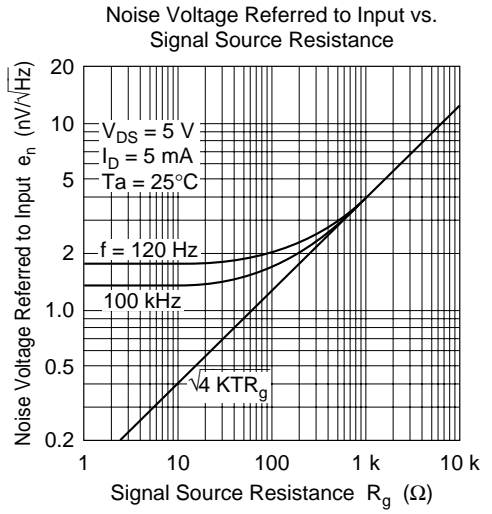
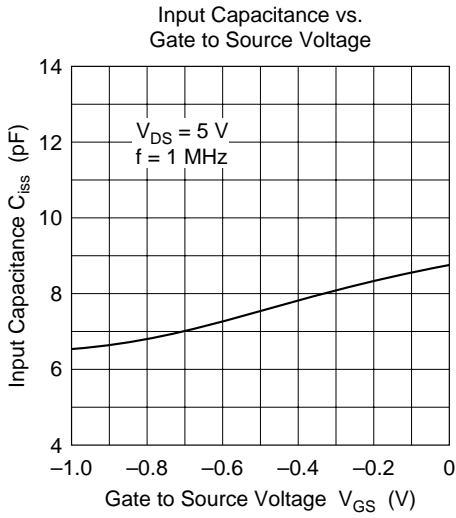


Typical Transfer Characteristics

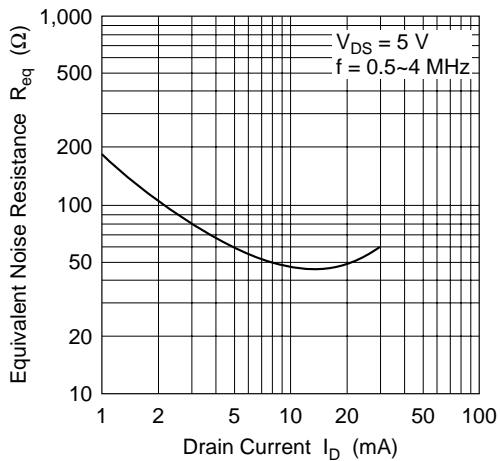


Forward Transfer Admittance vs. Drain to Source Voltage

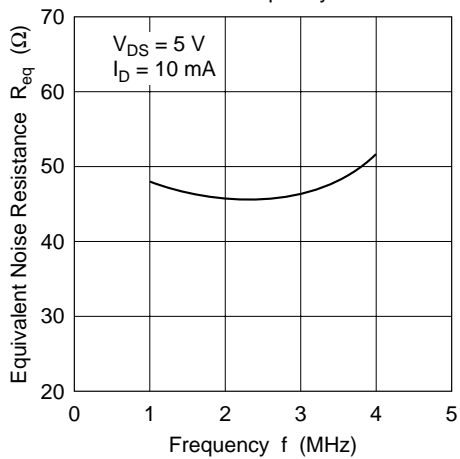


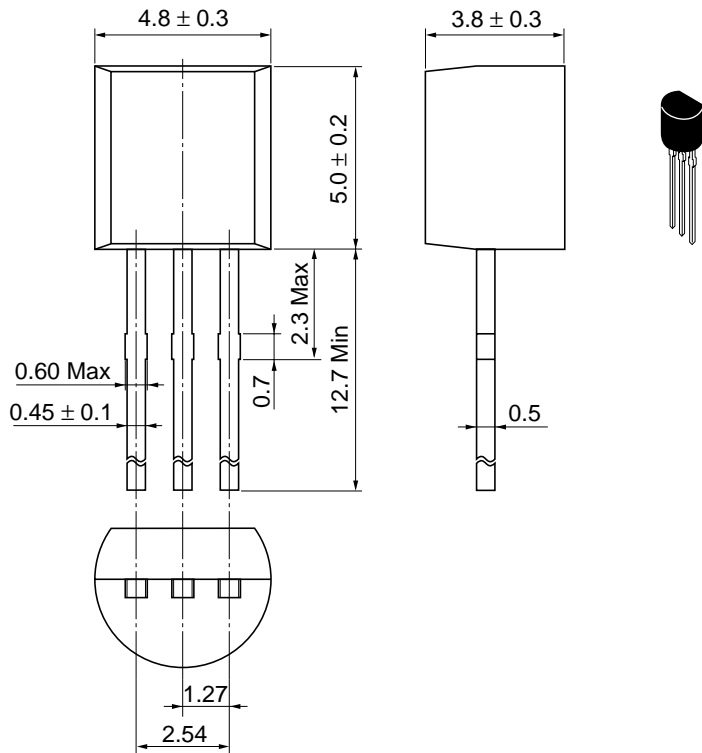


Equivalent Noise Resistance vs. Drain Current



Equivalent Noise Resistance vs. Frequency





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

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