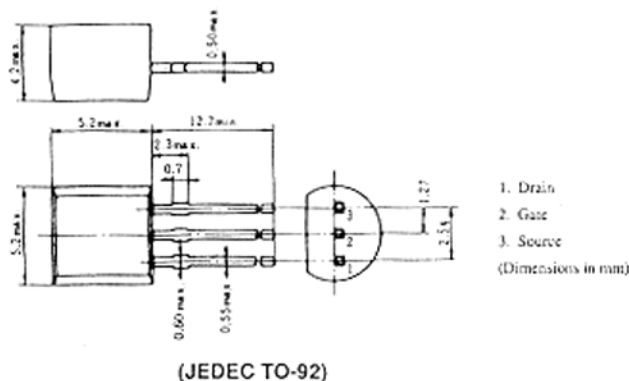


2SK187

SILICON N-CHANNEL JUNCTION FET
LOW FREQUENCY LOW NOISE AMPLIFIER

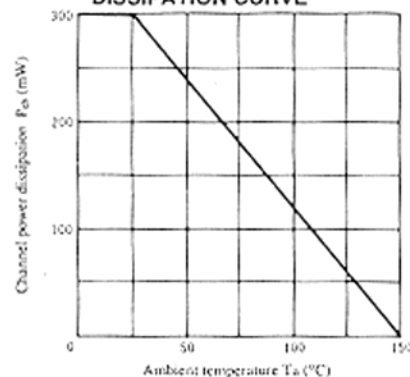


■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

| Item | Symbol | 2SK187 | Unit |
|---------------------------|------------|-------------|------|
| Gate to source voltage | V_{GS} | -40 | V |
| Drain to source voltage | V_{DS} * | 40 | V |
| Drain current | I_D | 30 | mA |
| Gate current | I_G | 10 | mA |
| Channel power dissipation | P_{ch} | 300 | mW |
| Channel temperature | T_{ch} | 150 | °C |
| Storage temperature | T_{stg} | -55 to +150 | °C |

* Value at $V_{GS} = -2V$

MAXIMUM CHANNEL POWER DISSIPATION CURVE



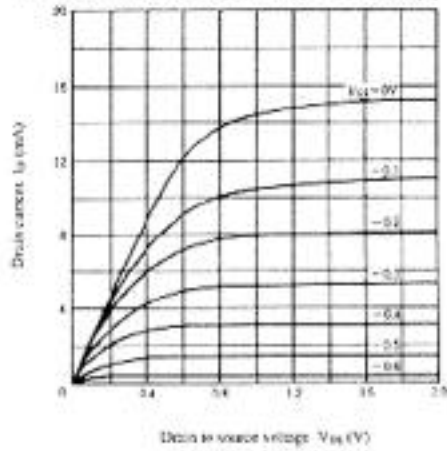
■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

| Item | Symbol | Test Condition | min. | typ. | max. | Unit |
|------------------------------------|---------------|--|-------|------|------|-----------------|
| Gate to source breakdown voltage | $V_{(BR)GS}$ | $I_G = -100\mu A, V_{DS} = 0$ | -40 | — | — | V |
| Drain to source breakdown voltage | $V_{(BR)DS}$ | $I_D = 100\mu A, V_{GS} = -2V$ | 40 | — | — | V |
| Gate cutoff current | I_{GSS} | $V_{GS} = -30V, V_{DS} = 0$ | — | — | -10 | nA |
| Drain current | I_{DSS} * | $V_{DS} = 10V, V_{GS} = 0$ | 2.5 | — | 20 | mA |
| Gate to source cutoff voltage | $V_{GS(off)}$ | $V_{DS} = 10V, I_D = 10\mu A$ | -0.13 | — | -1.5 | V |
| Forward transfer admittance | $ y_{fs} $ | $V_{DS} = 10V, I_D = 3mA, f = 1kHz$ | 18 | 21 | — | mS |
| Drain to source saturation voltage | $V_{DS(sat)}$ | $V_{GS} = 0V, I_D = 1mA$ | — | 0.07 | — | V |
| Input capacitance | C_{iss} | $V_{DS} = 10V, V_{GS} = 0, f = 1MHz$ | — | 41 | — | pF |
| Reverse transfer capacitance | C_{rss} | $V_{DS} = 10V, V_{GS} = 0, f = 1MHz$ | — | 8.0 | — | pF |
| Noise voltage referred to input | e_n | $V_{DS} = 10V, I_D = 3mA, R_L = 0, f = 1kHz$ | — | 1.0 | — | nV/ \sqrt{Hz} |
| Output noise voltage | V_N | See Test Circuit | — | — | 8.5 | mV |

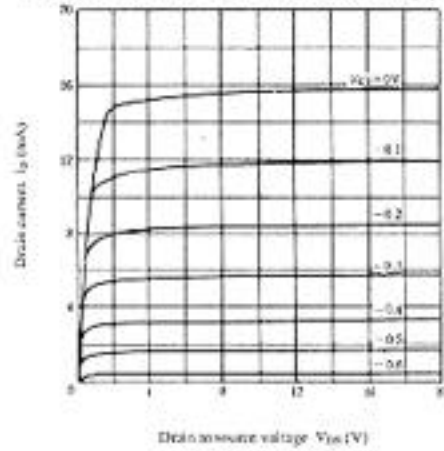
* The 2SK187 is grouped by I_{DSS} as follows.

| C | D | E | F |
|----------|--------|---------|----------|
| 2.5 to 5 | 4 to 8 | 6 to 12 | 10 to 20 |

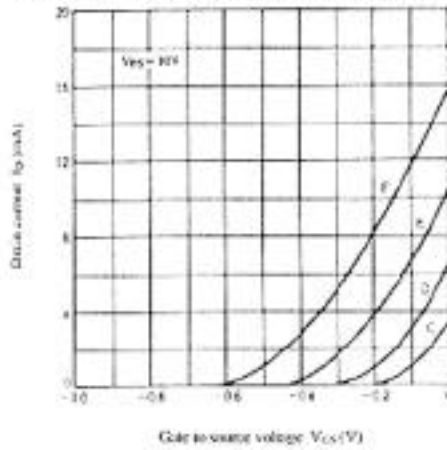
TYPICAL OUTPUT CHARACTERISTICS(1)



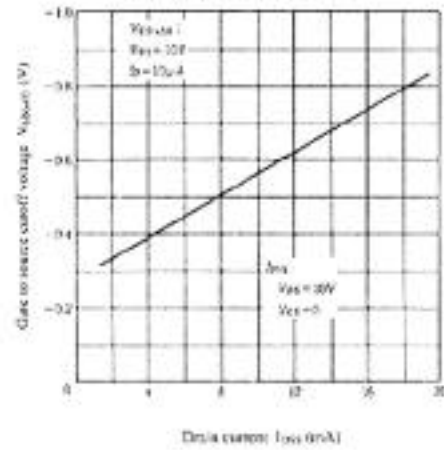
TYPICAL OUTPUT CHARACTERISTICS(2)



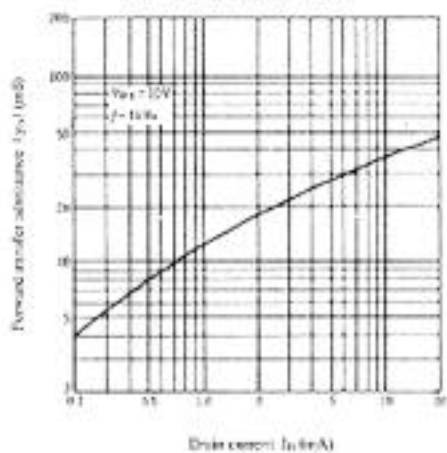
TYPICAL TRANSFER CHARACTERISTICS



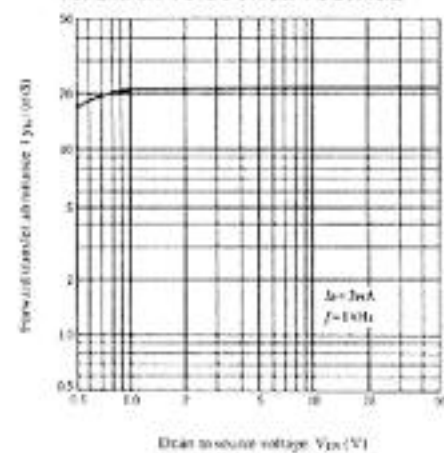
GATE TO SOURCE CUT-OFF VOLTAGE VS. DRAIN CURRENT



FORWARD TRANSFER ADMITTANCE VS. DRAIN CURRENT

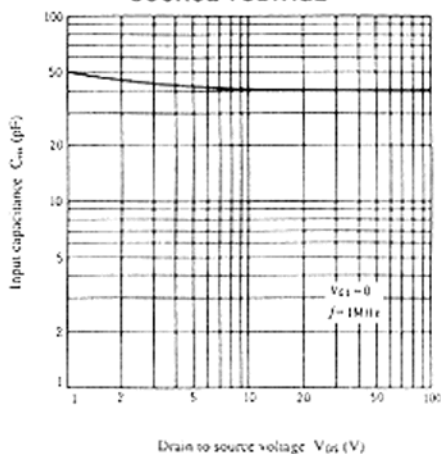


FORWARD TRANSFER ADMITTANCE VS. DRAIN TO SOURCE VOLTAGE

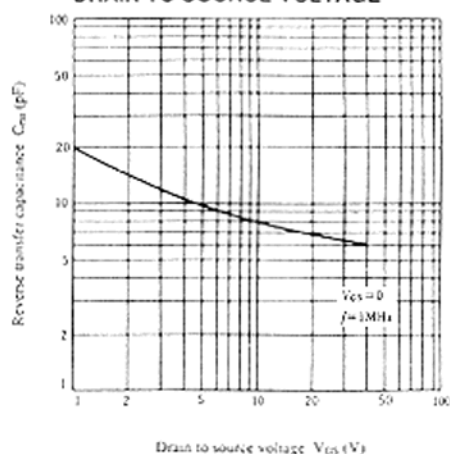


2SK187

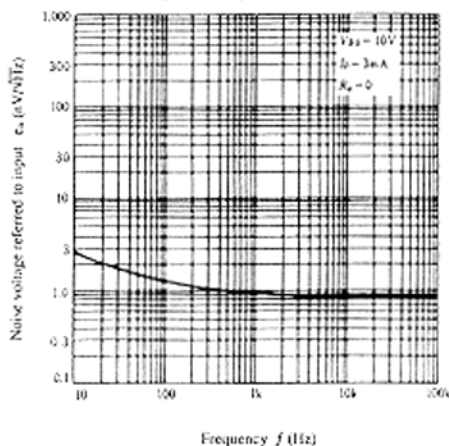
INPUT CAPACITANCE VS. DRAIN TO SOURCE VOLTAGE



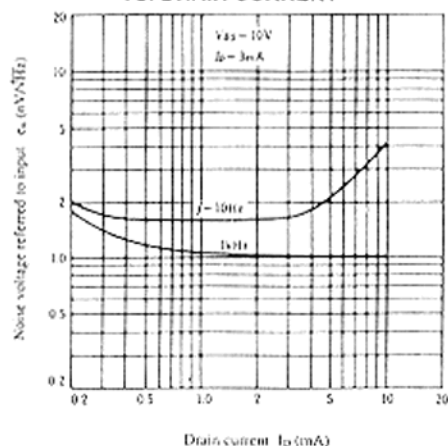
REVERSE TRANSFER CAPACITANCE VS. DRAIN TO SOURCE VOLTAGE



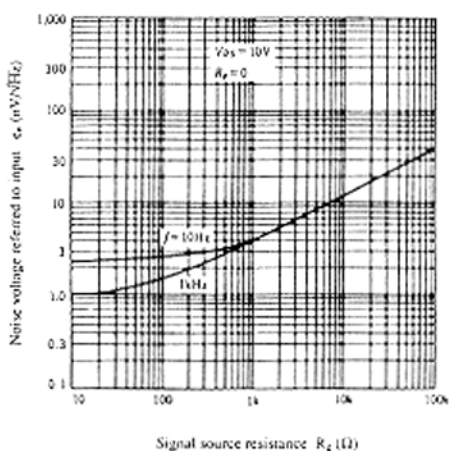
NOISE VOLTAGE REFERRED TO INPUT VS. FREQUENCY



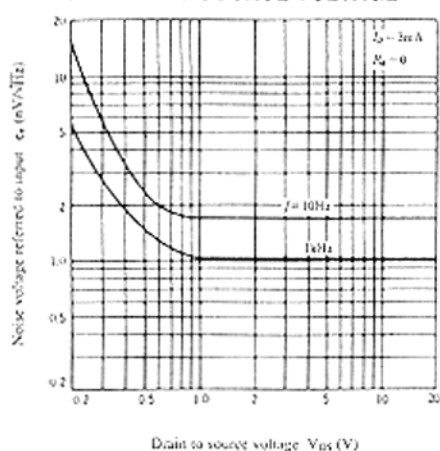
NOISE VOLTAGE REFERRED TO INPUT VS. DRAIN CURRENT



NOISE VOLTAGE REFERRED TO INPUT VS. SIGNAL SOURCE RESISTANCE



NOISE VOLTAGE REFERRED TO INPUT VS. DRAIN TO SOURCE VOLTAGE



V_N TEST CIRCUIT

V_{DS} = 10V, I_b = 5mA, R_b = 2.2Ω, G_v = 100dB Flat

