

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL JUNCTION TYPE

2SK880

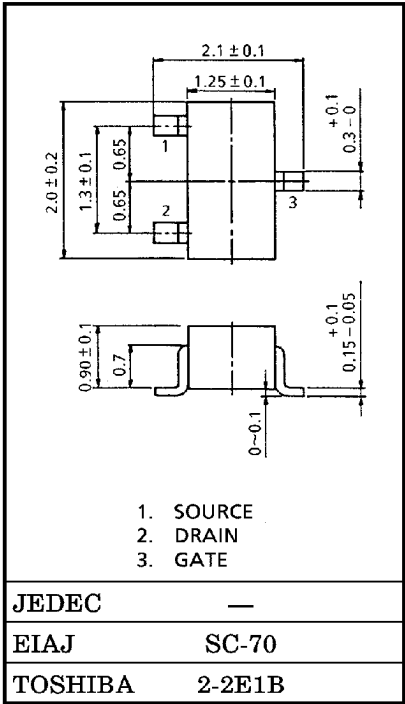
AUDIO FREQUENCY LOW NOISE AMPLIFIER APPLICATIONS

Unit in mm

- High  $|Y_{fs}|$  :  $|Y_{fs}|=15\text{mS (Typ.)}$  at  $V_{DS}=10\text{V}$ ,  $V_{GS}=0$
- High Breakdown Voltage :  $V_{GDS}=-50\text{V}$
- Low Noise :  $NF=1.0\text{dB (Typ.)}$   
at  $V_{DS}=10\text{V}$ ,  $I_D=0.5\text{mA}$ ,  $f=1\text{kHz}$ ,  $R_G=1\text{k}\Omega$
- High Input Impedance :  $I_{GSS}=-1\text{nA (Max.)}$  at  $V_{GS}=-30\text{V}$
- Small Package

MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTIC            | SYMBOL    | RATING  | UNIT |
|---------------------------|-----------|---------|------|
| Gate-Drain Voltage        | $V_{GDS}$ | -50     | V    |
| Gate Current              | $I_G$     | 10      | mA   |
| Drain Power Dissipation   | $P_D$     | 100     | mW   |
| Junction Temperature      | $T_j$     | 125     | °C   |
| Storage Temperature Range | $T_{stg}$ | -55~125 | °C   |

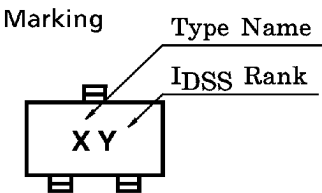


ELECTRICAL CHARACTERISTICS (Ta = 25°C)

Weight : 0.006g

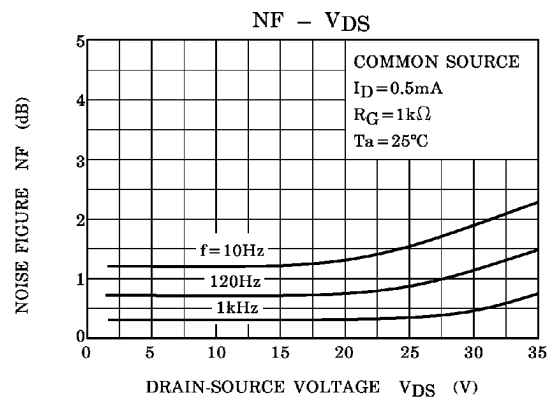
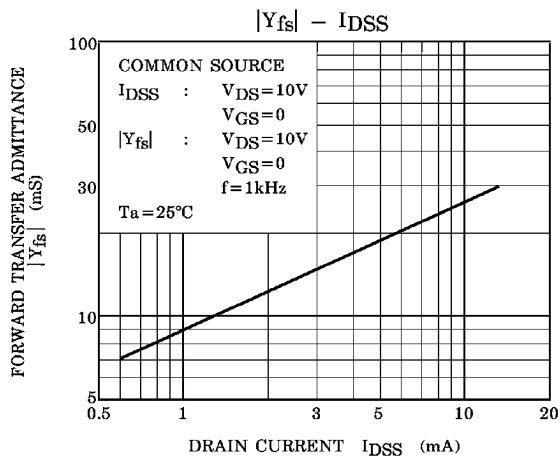
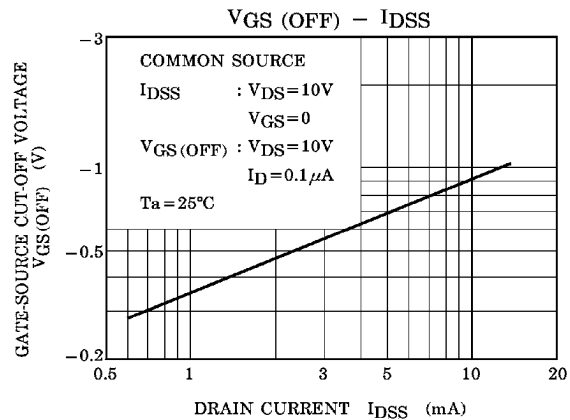
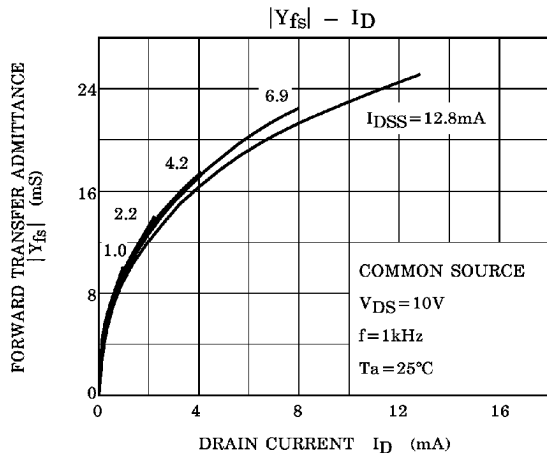
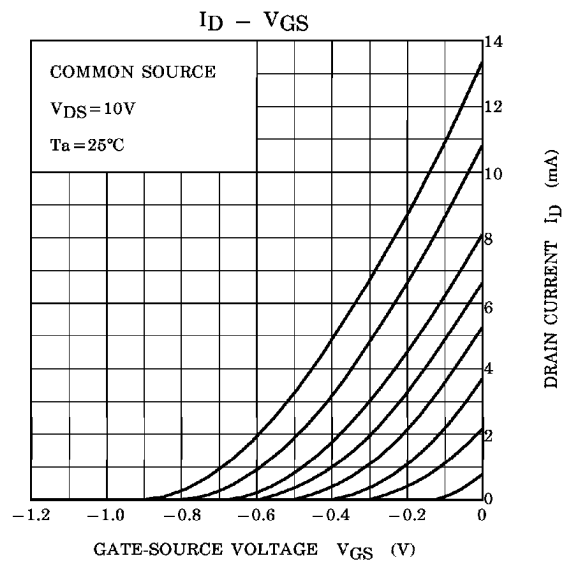
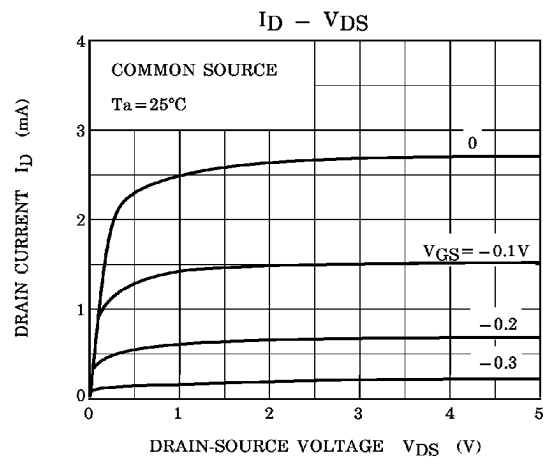
| CHARACTERISTIC               | SYMBOL                 | TEST CONDITION                                                                     | MIN. | TYP. | MAX. | UNIT |
|------------------------------|------------------------|------------------------------------------------------------------------------------|------|------|------|------|
| Gate Cut-off Current         | $I_{GSS}$              | $V_{GS}=-30\text{V}$ , $V_{DS}=0$                                                  | —    | —    | -1.0 | nA   |
| Gate-Drain Breakdown Voltage | $V_{(BR)GDS}$          | $V_{DS}=0$ , $I_G=-100\mu\text{A}$                                                 | -50  | —    | —    | V    |
| Drain Current                | $I_{DSS}(\text{Note})$ | $V_{DS}=10\text{V}$ , $V_{GS}=0$                                                   | 1.2  | —    | 14.0 | mA   |
| Gate-Source Cut-off Voltage  | $V_{GS}(\text{OFF})$   | $V_{DS}=10\text{V}$ , $I_D=0.1\mu\text{A}$                                         | -0.2 | —    | -1.5 | V    |
| Forward Transfer Admittance  | $ Y_{fs} $             | $V_{DS}=10\text{V}$ , $V_{GS}=0$ , $f=1\text{kHz}$                                 | 4.0  | 15   | —    | mS   |
| Input Capacitance            | $C_{iss}$              | $V_{DS}=10\text{V}$ , $V_{GS}=0$ , $f=1\text{MHz}$                                 | —    | 13   | —    | pF   |
| Reverse Transfer Capacitance | $C_{rss}$              | $V_{DG}=10\text{V}$ , $I_D=0$ , $f=1\text{MHz}$                                    | —    | 3    | —    | pF   |
| Noise Figure                 | NF (1)                 | $V_{DS}=10\text{V}$ , $R_G=1\text{k}\Omega$ , $I_D=0.5\text{mA}$ , $f=10\text{Hz}$ | —    | 5    | —    | dB   |
|                              | NF (2)                 | $V_{DS}=10\text{V}$ , $R_G=1\text{k}\Omega$ , $I_D=0.5\text{mA}$ , $f=1\text{kHz}$ | —    | 1    | —    | dB   |

Note :  $I_{DSS}$  Classification Y : 1.2~3.0mA, GR : 2.6~6.5mA, BL : 6.0~14mA



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