

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL JUNCTION TYPE

2SK369

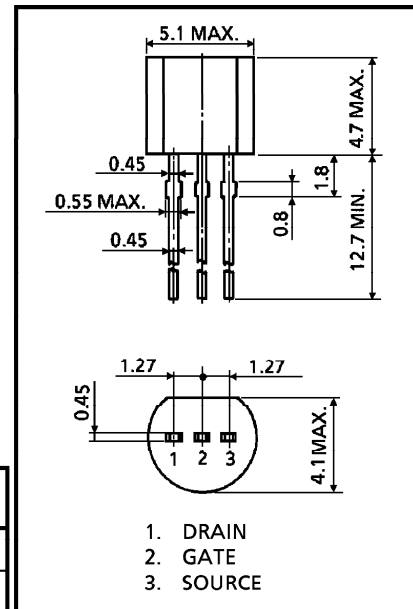
FOR LOW NOISE AUDIO AMPLIFIER APPLICATIONS

Unit in mm

- Suitable for Use as First Stage for Equalizer and MC Head Amplifiers.
- High $|Y_{fs}|$: $|Y_{fs}| = 40\text{mS (Typ.)}$
($V_{DS} = 10\text{V}$, $V_{GS} = 0$, $I_{DSS} = 5\text{mA}$)
- High Breakdown Voltage : $V_{GDS} = -40\text{V (Min.)}$
- Super Low Noise : $NF = 1.0\text{dB (Typ.)}$
($V_{DS} = 10\text{V}$, $I_D = 5\text{mA}$, $f = 1\text{kHz}$,
 $R_G = 100\Omega$)
- High Input Impedance : $I_{GSS} = -1\text{nA (Max.)}$ ($V_{GS} = -30\text{V}$)

MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---------------------------|-----------|---------|------------------|
| Gate-Drain Voltage | V_{GDS} | -40 | V |
| Gate Current | I_G | 10 | mA |
| Drain Power Dissipation | P_D | 400 | mW |
| Junction Temperature | T_j | 125 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | -55~125 | $^\circ\text{C}$ |



| | |
|---------|--------|
| JEDEC | TO-92 |
| EIAJ | SC-43 |
| TOSHIBA | 2-5F1D |

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

Weight : 0.21g (Typ.)

| 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 | $V_{(BR)GDS}$ | $V_{DS} = 0$, $I_G = -100\mu\text{A}$ | -40 | — | — | V |
| Drain Current | I_{DSS} (Note 1) | $V_{DS} = 10\text{V}$, $V_{GS} = 0$ | 5.0 | — | 30 | mA |
| Gate-Source Cut-off Voltage | $V_{GS(OFF)}$ | $V_{DS} = 10\text{V}$, $I_D = 0.1\mu\text{A}$ | -0.3 | — | -1.2 | V |
| Forward Transfer Admittance | $ Y_{fs} $ | $V_{DS} = 10\text{V}$, $V_{GS} = 0$, $f = 1\text{kHz}$, ($I_{DSS} = 5\text{mA}$) | 25 | 40 | — | mS |
| Input Capacitance | C_{iss} | $V_{DS} = 10\text{V}$, $V_{GS} = 0$, $f = 1\text{MHz}$ | — | 75 | — | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{GD} = -10\text{V}$, $I_D = 0$, $f = 1\text{MHz}$ | — | 15 | — | pF |
| Noise Figure (Note 2) | NF (1) | $V_{DS} = 10\text{V}$, $R_G = 100\Omega$, $I_D = 5\text{mA}$, $f = 100\text{Hz}$ | — | 5 | 10 | dB |
| | NF (2) | $V_{DS} = 10\text{V}$, $R_G = 100\Omega$, $I_D = 5\text{mA}$, $f = 1\text{kHz}$ | — | 1 | 2 | |

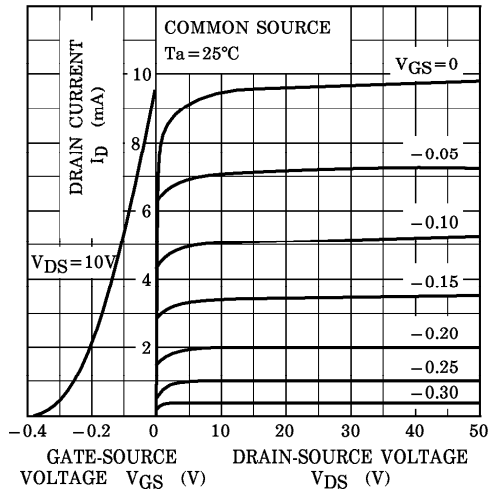
Note 1 : I_{DSS} Classification GR : 5.0~10.0mA, BL : 8.0~16.0mA, V : 14.0~30.0mA

Note 2 : Use this in the low voltage region ($V_{DS} < 15\text{V}$) for low noise applications.

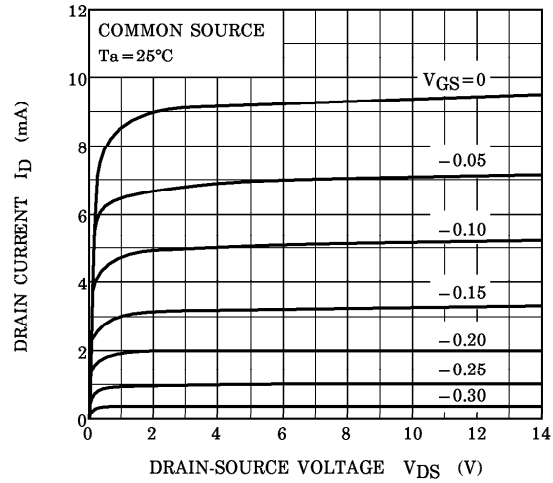
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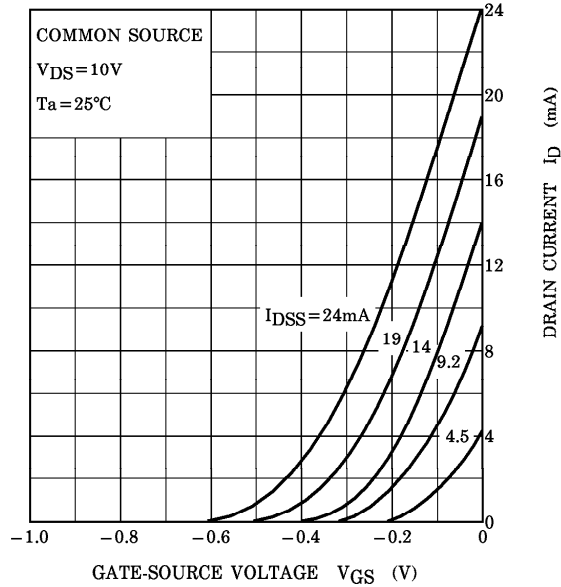
STATIC CHARACTERISTICS



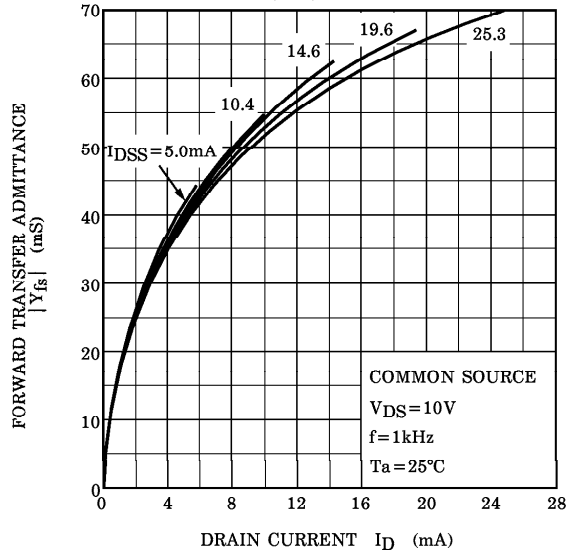
ID - VDS (LOW VOLTAGE REGION)



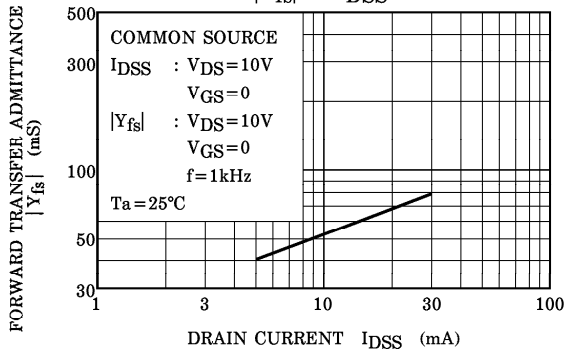
ID - VGS



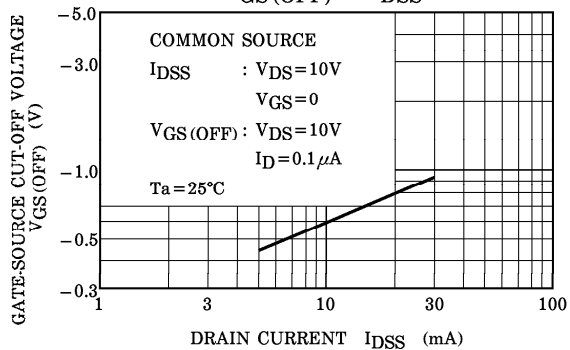
|Yfs| - ID



|Yfs| - IDSS



VGS(OFF) - IDSS



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