TOSHIBA Field Effect Transistor Silicon N Channel Junction Type

2SK370

For Low Noise Audio Amplifier Applications

Unit: mm

- Suitable for use as first stage for equalizer and MC head amplifiers.
- High $|Y_{fs}|$: $|Y_{fs}| = 22 \text{ ms (typ.) (VDS} = 10 \text{ V, VGS} = 0, IDSS} = 3 \text{ mA)}$
- High breakdown voltage: V_{GDS} = −40 V
- High input impedance: $I_{GSS} = -1 \text{ nA (max) (V}_{GS} = -30 \text{ V)}$
- Complementary to 2SJ108
- Small package

Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Gate-drain voltage	V_{GDS}	-40	٧
Gate current	IG	10	mA
Drain power dissipation	P_{D}	200	mW
Junction temperature	Tj	125	°C
Storage temperature range	T _{stg}	-55~125	°C

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the

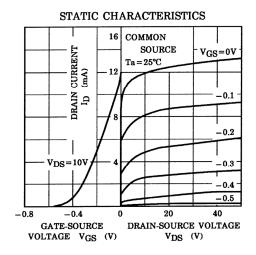
Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

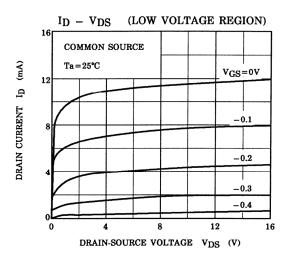
Weight: 0.13 g (typ.)

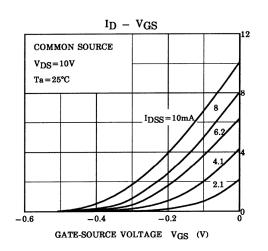
Electrical Characteristics (Ta = 25°C)

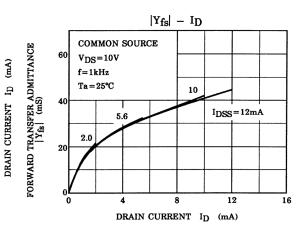
Characteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Gate cut-off current	I _{GSS}	$V_{GS} = -30 \text{ V}, V_{DS} = 0$	_	_	-1.0	nA
Gate-drain breakdown voltage	V _{(BR) GDS}	$V_{DS} = 0$, $I_G = -100 \mu A$	-40	_	_	V
Drain current	I _{DSS} (Note)	V _{DS} = 10 V, V _{GS} = 0	2.6	_	20	mA
Gate-source cut-off voltage	V _{GS (OFF)}	$V_{DS} = 10 \text{ V}, I_D = 0.1 \mu A$	-0.2	_	-1.5	V
Forward transfer admittance	Y _{fs}	$V_{DS} = 10 \text{ V}, V_{GS} = 0, f = 1 \text{ kHz}, \\ I_{DSS} = 3 \text{ mA}$	8	22	_	mS
Input capacitance	C _{iss}	$V_{DS} = 10 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$	_	30	_	pF
Reverse transfer capacitance	C _{rss}	$V_{DG} = 10 \text{ V}, I_D = 0, f = 1 \text{ MHz}$	_	6	_	pF
Noise figure	NF (1)	$\begin{split} V_{DS} = 10 \text{ V}, \text{ I}_D = 1.0 \text{ mA}, \text{ R}_G = 1 \text{ k}\Omega, \\ f = 10 \text{ Hz} \end{split}$	_	1.0	10	- dB
	NF (2)	$\begin{split} V_{DS} = 10 \text{ V, I}_D = 1.0 \text{ mA, R}_G = 1 \text{ k}\Omega, \\ f = 1 \text{ kHz} \end{split}$		0.5	2	

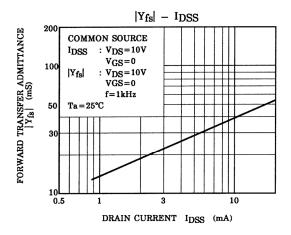
Note: I_{DSS} classification GR: 2.6~6.5 mA, BL: 6.0~12 mA, V: 10~20 mA

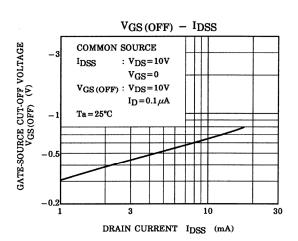




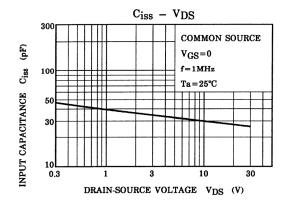


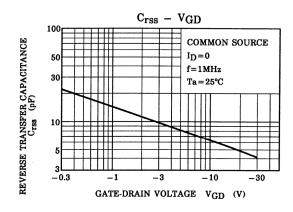


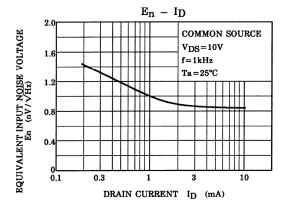


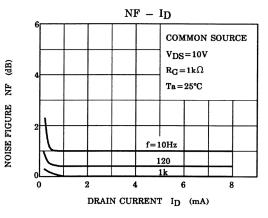


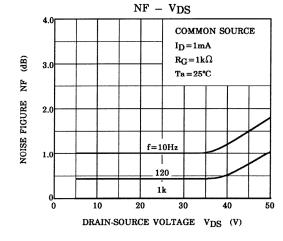
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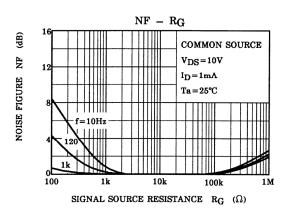




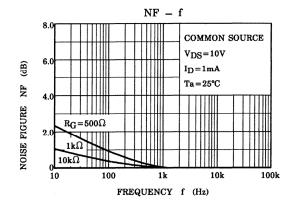


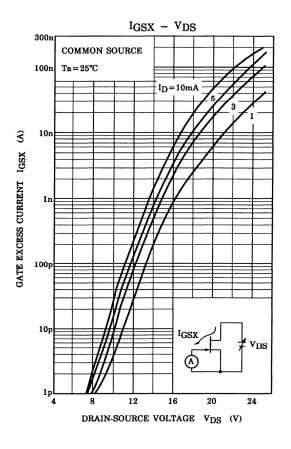


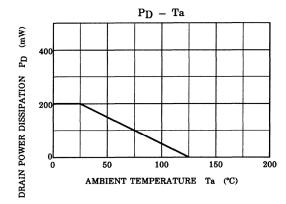




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20070701-EN GENERAL

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