

TOSHIBA Field Effect Transistor Silicon N Channel Junction Type

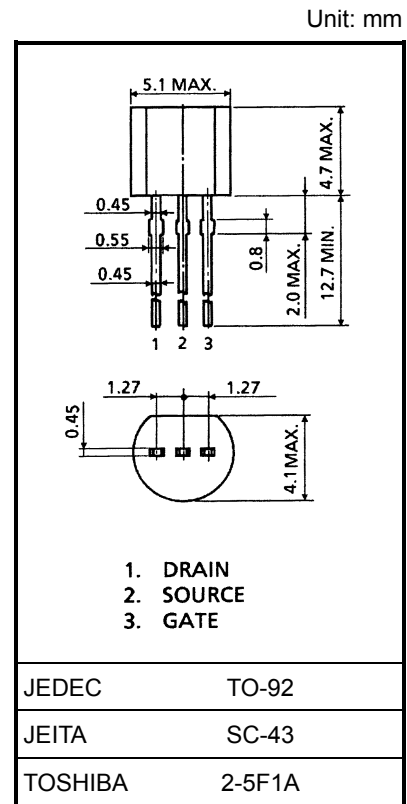
# 2SK709

High Frequency Amplifier Applications  
 AM High Frequency Amplifier Applications  
 Audio Frequency Amplifier Applications

- High  $|Y_{fs}|$ :  $|Y_{fs}| = 25 \text{ mS (typ.)}$
- Low  $C_{iss}$ :  $C_{iss} = 7.5 \text{ pF (typ.)}$
- Low noise

### Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Gate-drain voltage	$V_{GDS}$	-20	V
Gate current	$I_G$	10	mA
Drain power dissipation	$P_D$	300	mW
Junction temperature	$T_j$	125	°C
Storage temperature range	$T_{stg}$	-55~125	°C

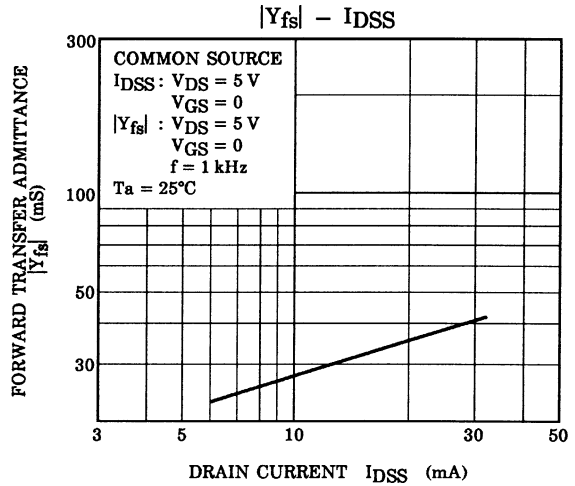
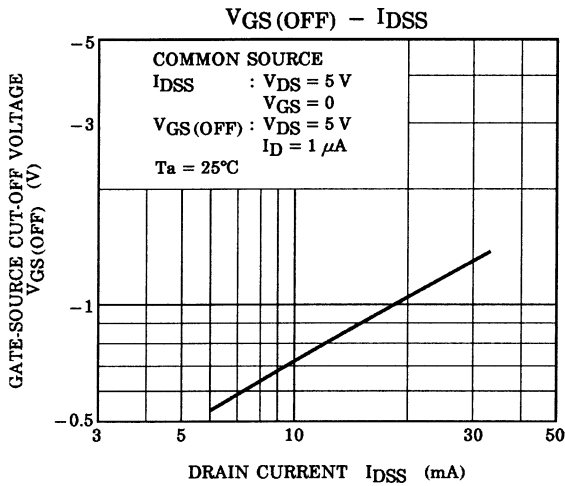
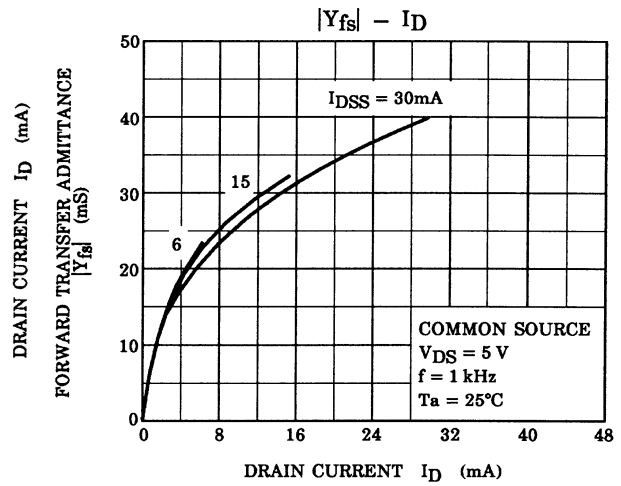
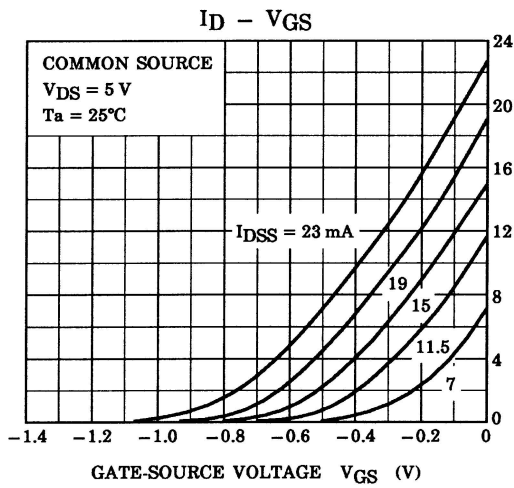
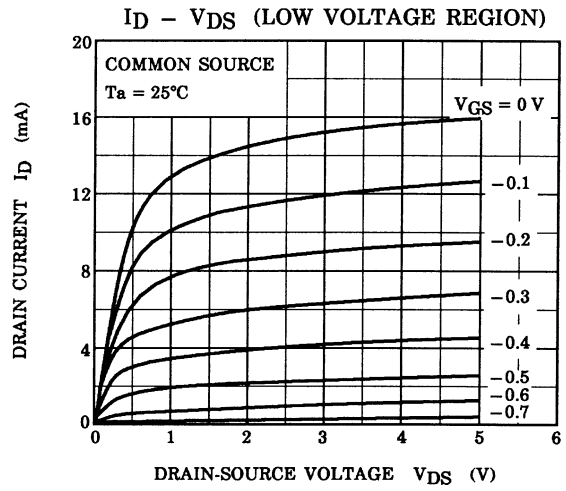
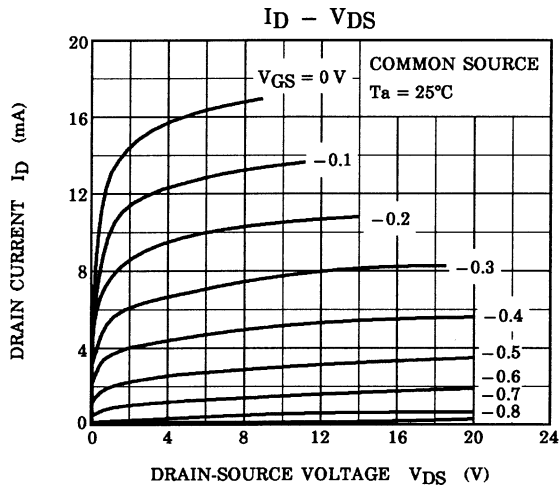


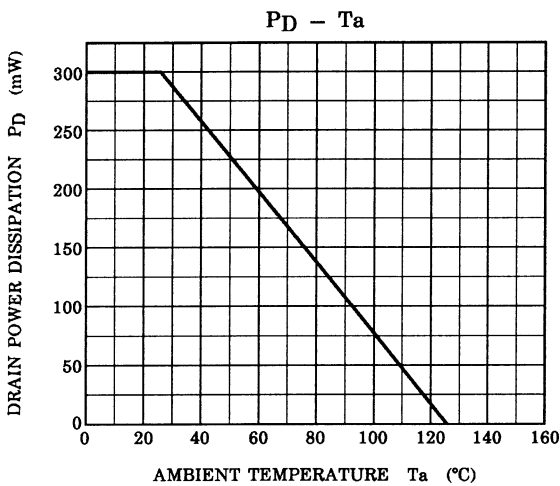
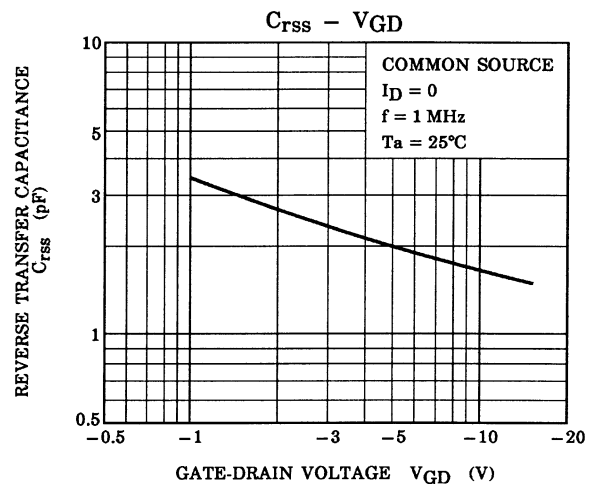
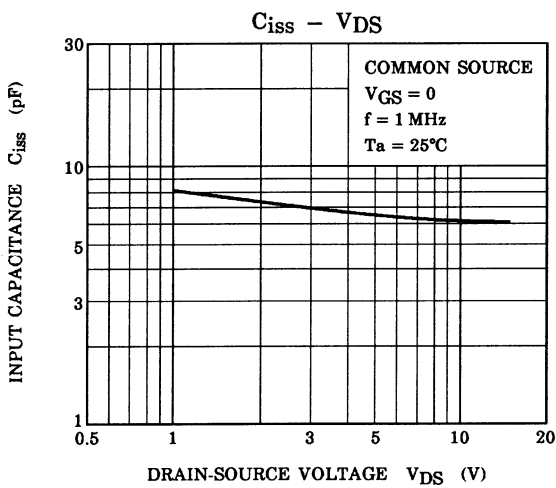
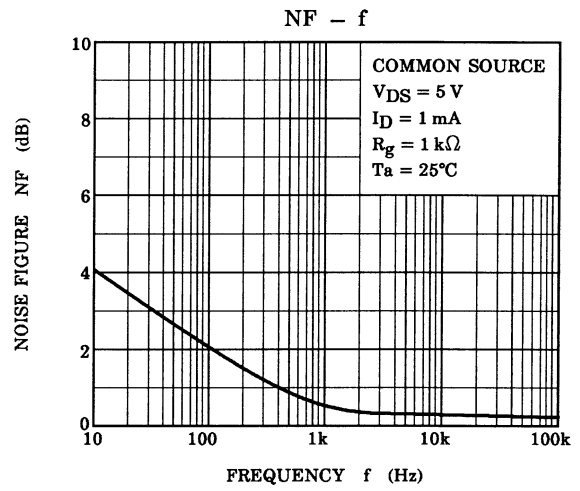
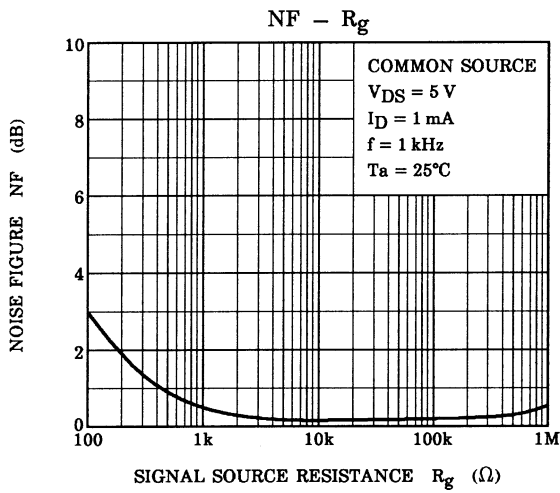
Weight: 0.21 g (typ.)

### Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current	$I_{GSS}$	$V_{GS} = -15 \text{ V}, V_{DS} = 0$	—	—	-1.0	nA
Gate-drain breakdown voltage	$V_{(BR)GDS}$	$V_{DS} = 0, I_G = -100 \mu\text{A}$	-20	—	—	V
Drain current	$I_{DSS}$ (Note)	$V_{DS} = 5 \text{ V}, V_{GS} = 0$	6	—	32	mA
Gate-source cut-off voltage	$V_{GS(OFF)}$	$V_{DS} = 5 \text{ V}, I_D = 1 \mu\text{A}$	—	—	-2.5	V
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = 5 \text{ V}, V_{GS} = 0, f = 1 \text{ kHz}$	15	25	—	mS
Input capacitance	$C_{iss}$	$V_{DS} = 5 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$	—	7.5	10	pF
Reverse transfer capacitance	$C_{rss}$	$V_{DG} = 5 \text{ V}, I_D = 0, f = 1 \text{ MHz}$	—	2	3	pF
Noise figure	NF	$V_{DS} = 5 \text{ V}, I_D = 1 \text{ mA}$ $R_g = 1 \text{ k}\Omega, f = 1 \text{ kHz}$	—	0.5	3	dB

Note:  $I_{DSS}$  classification GR: 6~12 mA, BL: 10~20 mA, V: 16~32 mA





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