

TOSHIBA Field Effect Transistor Silicon N Channel Junction Type

2SK192A

FM Tuner Applications

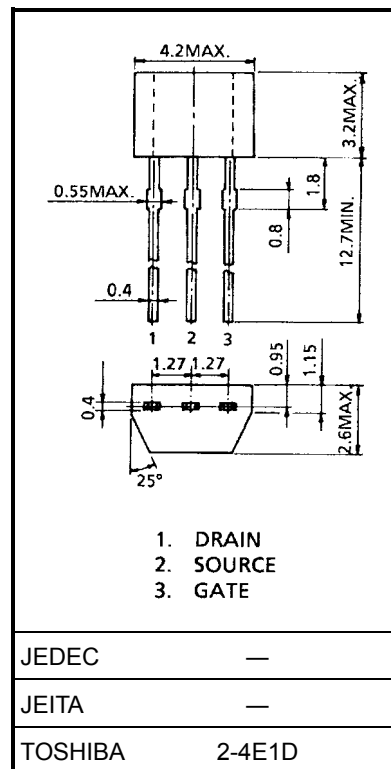
VHF Band Amplifier Applications

Unit: mm

- High power gain: $G_{PS} = 24\text{dB}$ (typ.) ($f = 100\text{ MHz}$)
- Low noise figure: $NF = 1.8\text{dB}$ (typ.) ($f = 100\text{ MHz}$)
- High forward transfer admittance: $|Y_{fs}| = 7\text{ mS}$ (typ.) ($f = 1\text{ kHz}$)

Maximum Ratings ($T_a = 25^\circ\text{C}$)

Characteristics	Symbol	Rating	Unit
Gate-drain voltage	V_{GDO}	-18	V
Gate current	I_G	10	mA
Drain power dissipation	P_D	200	mW
Junction temperature	T_j	125	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55~125	$^\circ\text{C}$

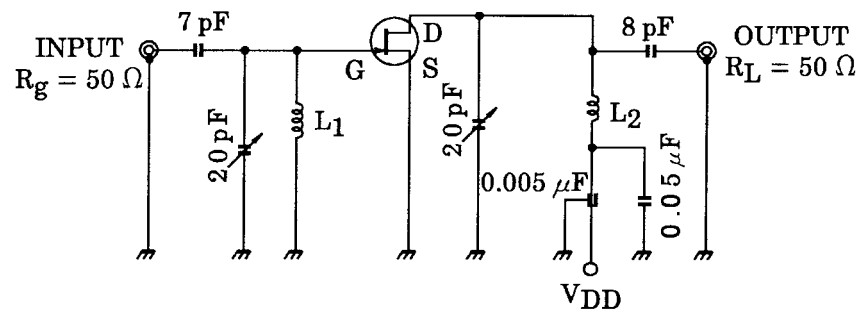


Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Weight: 0.13 g (typ.)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current	I_{GSS}	$V_{GS} = -1.0\text{ V}$, $V_{DS} = 0$	—	—	-10	nA
Gate-drain breakdown voltage	$V_{(BR) GDO}$	$I_G = -100\text{ }\mu\text{A}$	-18	—	—	V
Drain current	I_{DSS} (Note)	$V_{GS} = 0$, $V_{DS} = 10\text{ V}$	3	—	24	mA
Gate-source cut-off voltage	$V_{GS (OFF)}$	$V_{DS} = 10\text{ V}$, $I_D = 1\text{ }\mu\text{A}$	-1.2	-3	—	V
Forward transfer admittance	$ Y_{fs} $	$V_{GS} = 0$, $V_{DS} = 10\text{ V}$, $f = 1\text{ kHz}$	—	7	—	mS
Input capacitance	C_{iss}	$V_{DS} = 10\text{ V}$, $V_{GS} = 0$, $f = 1\text{ MHz}$	—	3.5	—	pF
Reverse transfer capacitance	C_{rss}	$V_{GD} = -10\text{ V}$, $f = 1\text{ MHz}$	—	—	0.65	pF
Power gain	G_{PS}	$V_{DD} = 10\text{ V}$, $f = 100\text{ MHz}$ (Figure 1)	—	24	—	dB
Noise figure	NF	$V_{DD} = 10\text{ V}$, $f = 100\text{ MHz}$ (Figure 1)	—	1.8	3.5	dB

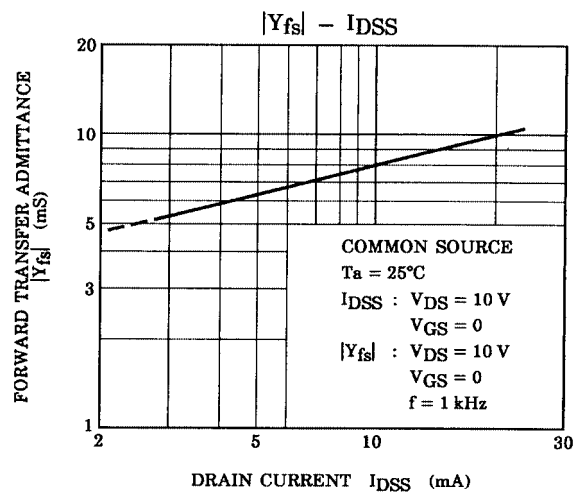
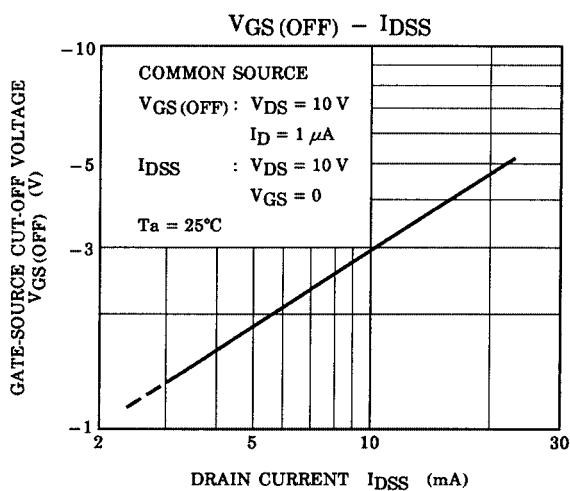
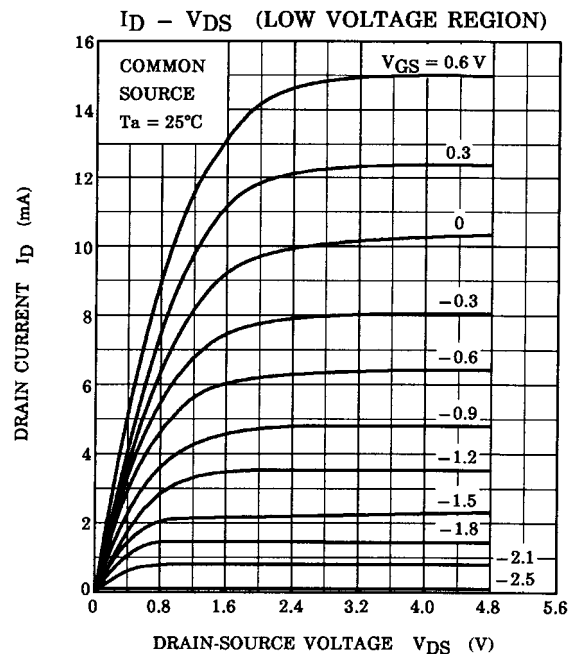
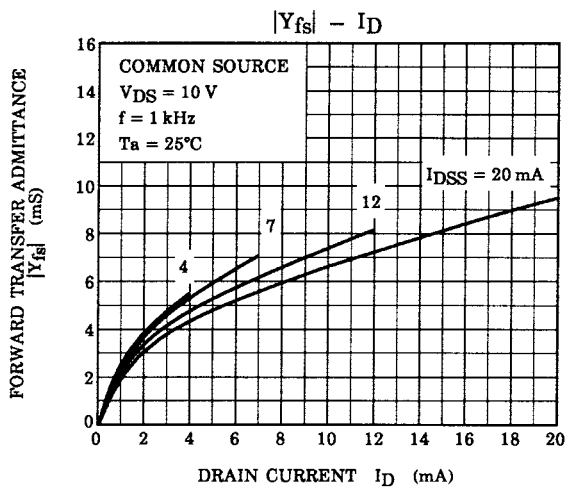
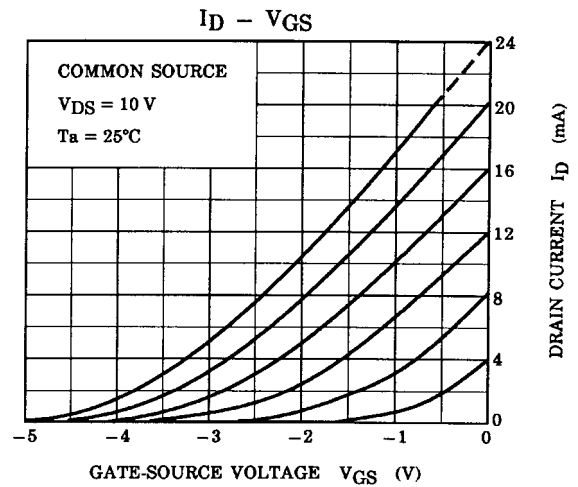
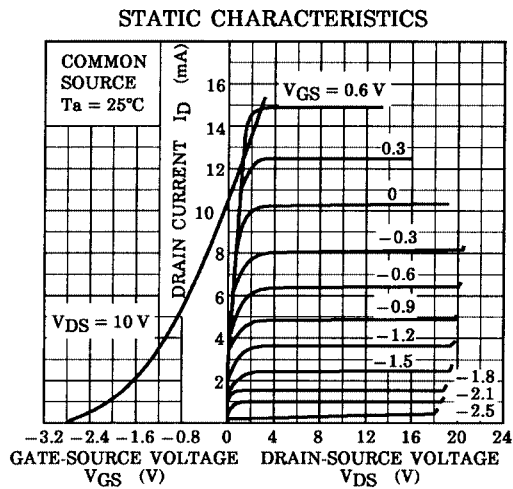
Note: I_{DSS} classification Y: 3.0~7.0, GR: 6.0~14.0, BL: 12.0~24.0

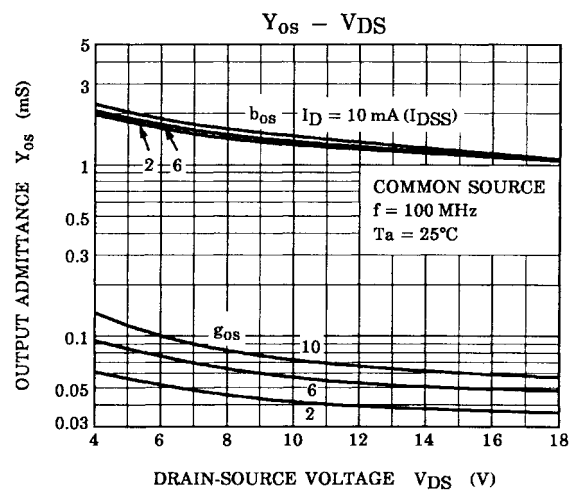
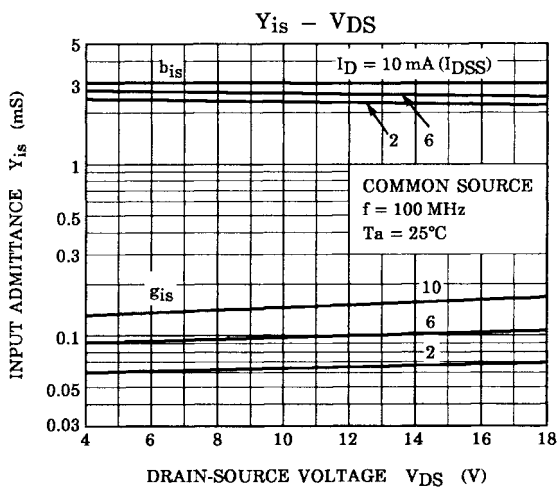
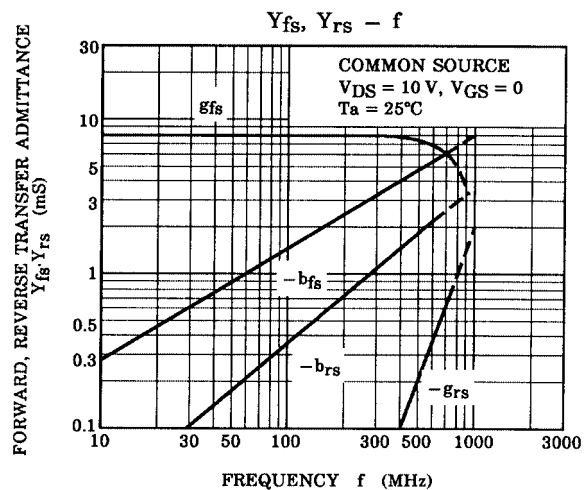
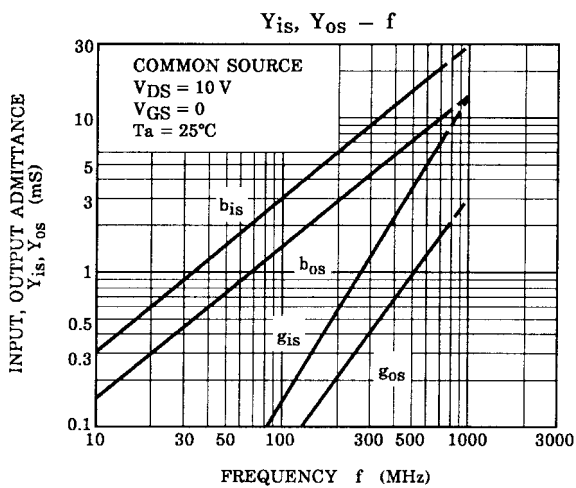
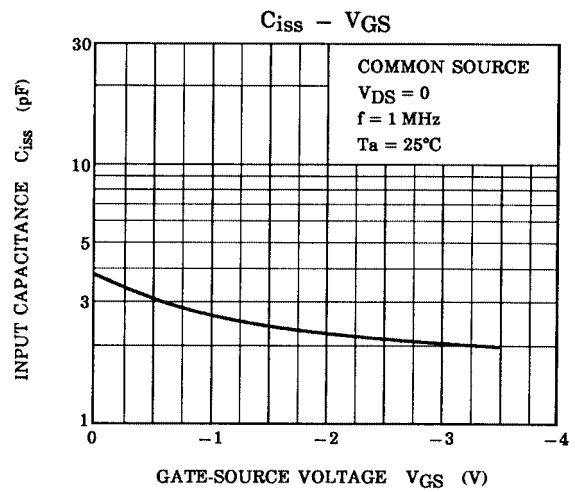
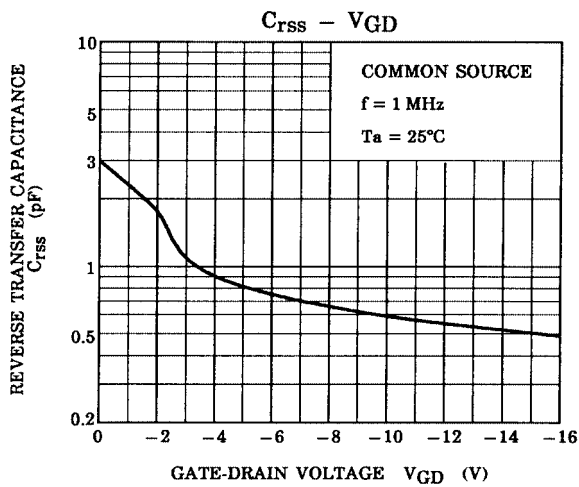


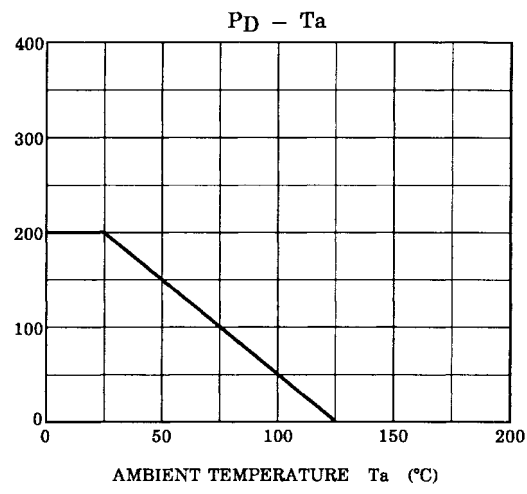
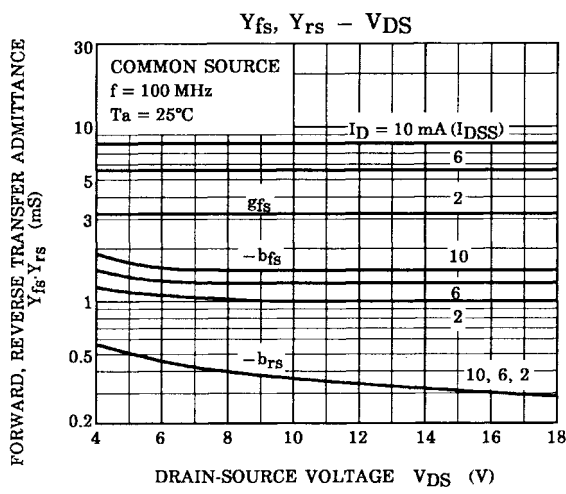
L1: 0.8 mm ϕ Ag plated Cu wire 3 turns, 10 mm ID, 10 mm length

L2: 0.8 mm ϕ Ag plated Cu wire 3.5 turns, 10 mm ID, 10 mm length

Figure 1 100 MHz G_{ps}, NF Test Circuit







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