TOSHIBA Field Effect Transistor Silicon N Channel Junction Type

# 2SK192A

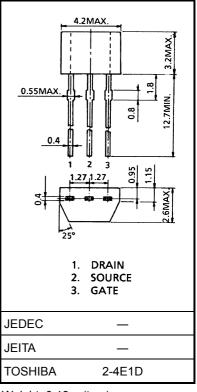
# FM Tuner Applications VHF Band Amplifier Applications

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

### Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Gate-drain voltage	$V_{GDO}$	-18	٧
Gate current	IG	10	mA
Drain power dissipation	P <sub>D</sub>	200	mW
Junction temperature	Tj	125	°C
Storage temperature range	T <sub>stg</sub>	-55~125	°C

#### Unit: mm

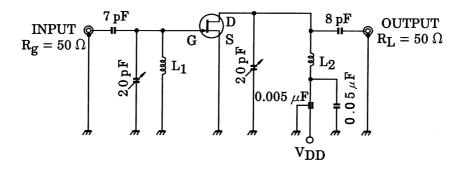


Weight: 0.13 g (typ.)

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

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

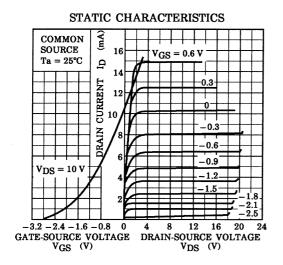
Note: I<sub>DSS</sub> classification Y: 3.0~7.0, GR: 6.0~14.0, BL: 12.0~24.0

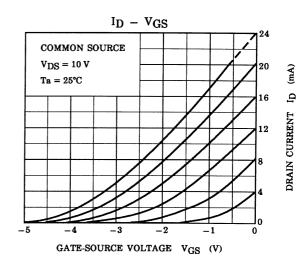


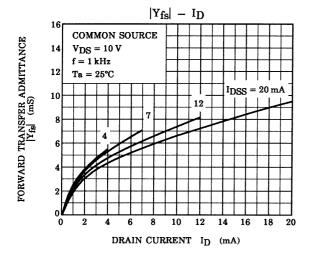
 $L_1{:}~0.8~mm\varphi~A_g~plated~Cu~wire~3~turns,~10~mm~ID,~10~mm~length$   $L_2{:}~0.8~mm\varphi~A_g~plated~Cu~wire~3.5~turns,~10~mm~ID,~10~mm~length$ 

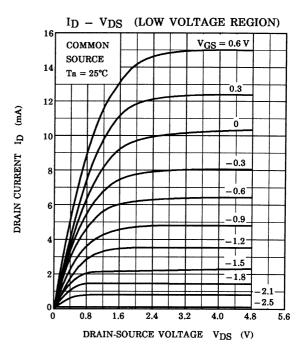
Figure 1  $\,$  100 MHz  $\,$ Gps, NF Test Circuit

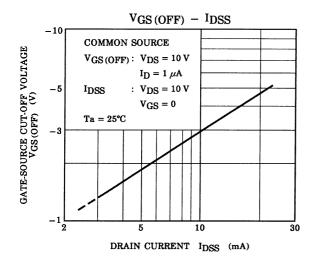
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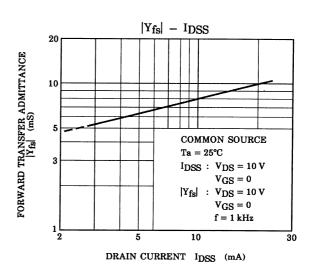




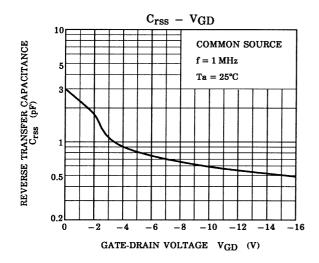


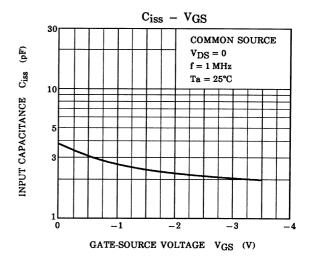


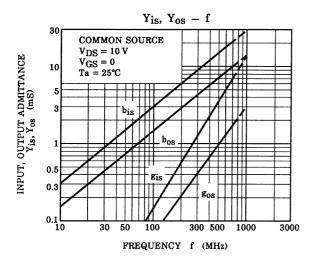


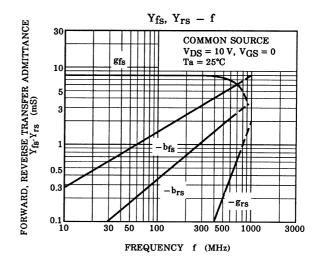


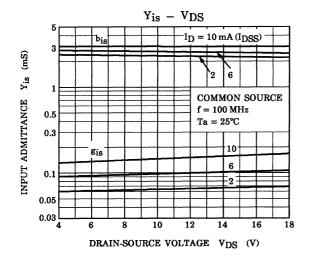
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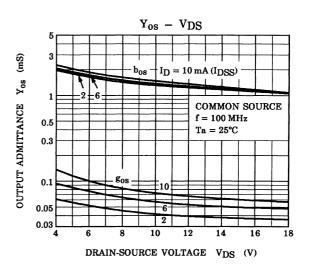


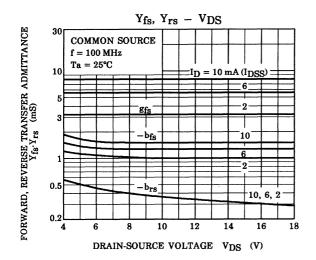


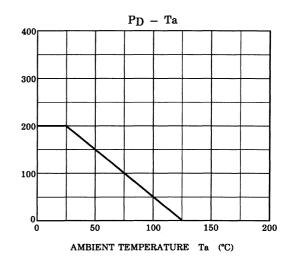












5 2003-04-04

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