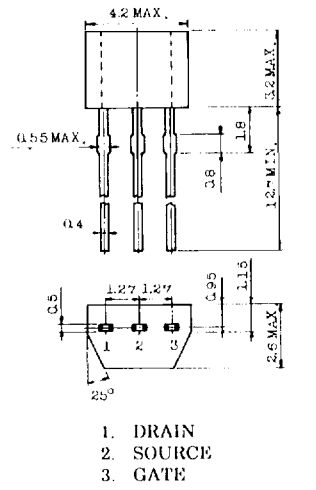
SILICON N CHANNEL JUNCTION TYPE
FIELD EFFECT TRANSISTOR

2SK192A

FM TUNER APPLICATIONS.
VHF BAND AMPLIFIER APPLICATIONS.

- High Power Gain : G_{PS} = 24dB (Typ.) (f = 100MHz)
- Low Noise Figure : NF = 1.8dB (Typ.) (f = 100MHz)
- High Forward Transfer Admittance
  : $|y_{fs}|$ = 7mS (Typ.) (f = 1kHz)

Unit in mm



1. DRAIN
2. SOURCE
3. GATE

JEDEC	—
EIAJ	—
TOSHIBA	2-4E1D

Weight : 0.13g

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	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	°C
Storage Temperature Range	T_{stg}	−55~125	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current	I_{GSS}	V_{GS} = −1.0V, V_{DS} = 0	—	—	−10	nA
Gate-Drain Breakdown Voltage	$V_{(BR)GDO}$	I_G = −100μA	−18	—	—	V
Drain Current	I_{DSS} (Note)	V_{GS} = 0, V_{DS} = 10V	3	—	24	mA
Gate-Source Cut-off Voltage	$V_{GS(OFF)}$	V_{DS} = 10V, I_D = 1μA	−1.2	−3	—	V
Forward Transfer Admittance	$\|y_{fs}\|$	V_{GS} = 0, V_{DS} = 10V, f = 1kHz	—	7	—	mS
Input Capacitance	C_{iss}	V_{DS} = 10V, V_{GS} = 0, f = 1MHz	—	3.5	—	pF
Reverse Transfer Capacitance	C_{rss}	V_{DS} = −10V, f = 1MHz	—	–	0.65	pF
Power Gain	G_{PS}	V_{DD} = 10V, f = 100MHz (Fig.1)	—	24	—	dB
Noise Figure	NF	V_{DD} = 10V, f = 100MHz (Fig.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

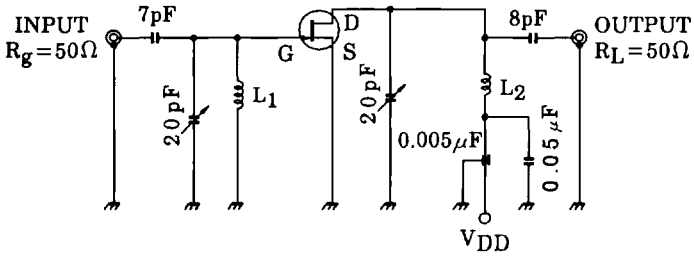
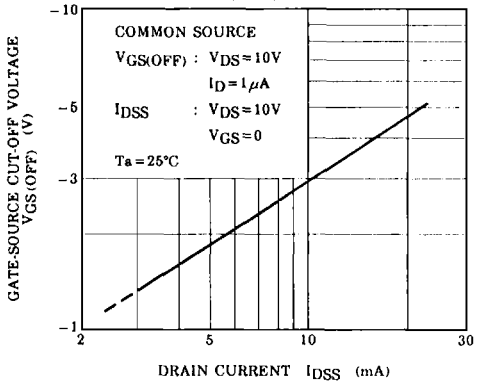


Fig.1 100MHz G_{ps}, NF TEST CIRCUIT

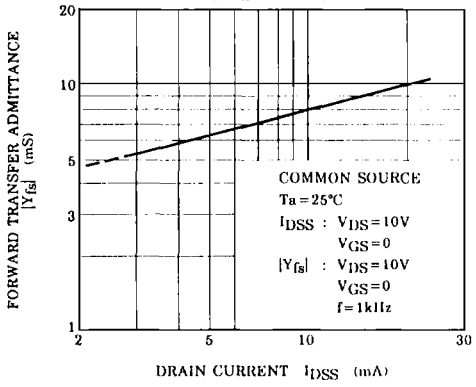
L_1 : 0.8mmϕ Ag PLATED Cu WIRE 3 TURNS, 10mm I_D, 10mm LENGTH

L_2 : 0.8mmϕ Ag PLATED Cu WIRE 3.5 TURNS, 10mm I_D, 10mm LENGTH

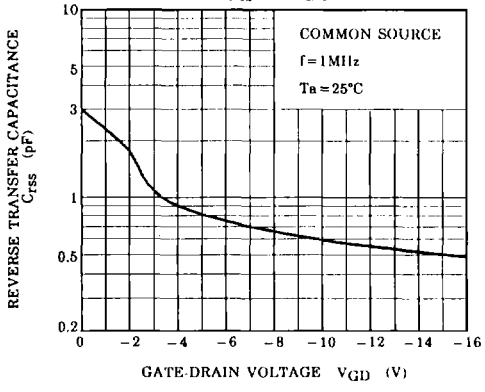
$V_{GS(OFF)}$ – I_{DSS}



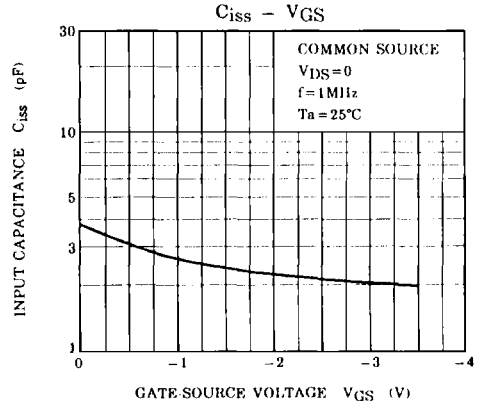
$|Y_{fs}|$ – I_{DSS}



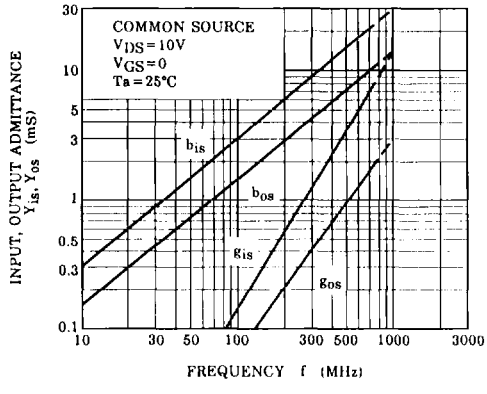
C_{rss} – V_{GD}



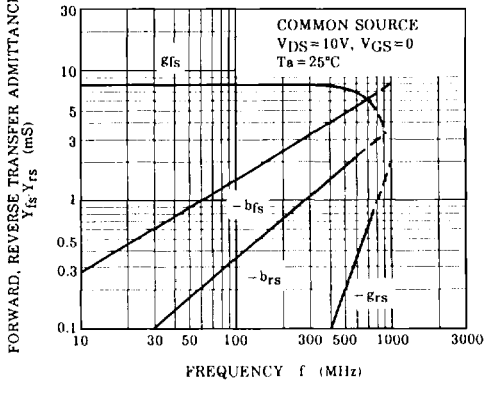
C_{iss} – V_{GS}

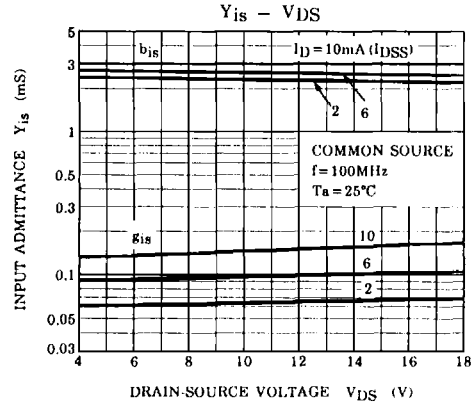


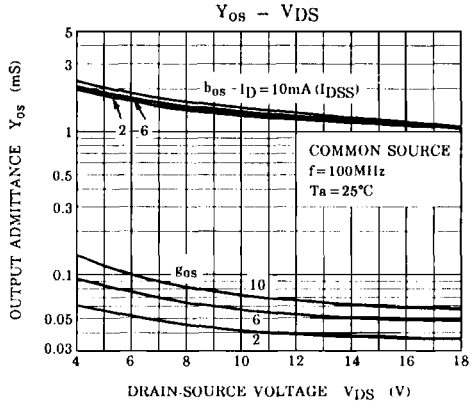
Y_{is}, Y_{os} – f

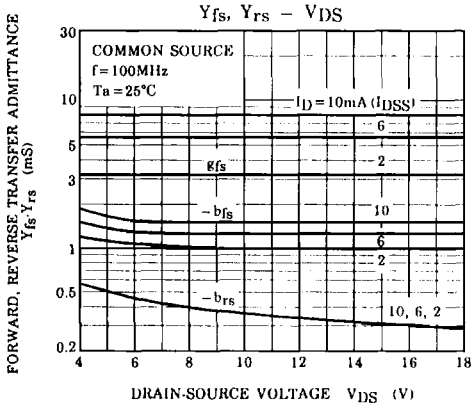


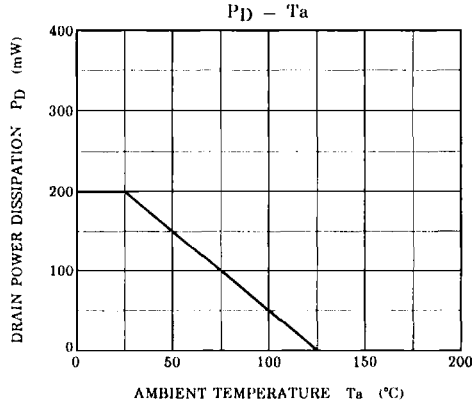
Y_{fs}, Y_{rs} – f




Y_{is} – V_{DS}
INPUT ADMITTANCE Y_{is} (mS)
DRAIN-SOURCE VOLTAGE V_{DS} (V)
b_{is}
I_D = 10mA (I_{DSS})
2
6
COMMON SOURCE
f = 100MHz
Ta = 25°C
g_{is}
10
6
2
5
3
1
0.5
0.3
0.1
0.05
0.03
4
6
8
10
12
14
16
18


Y_{os} – V_{DS}
OUTPUT ADMITTANCE Y_{os} (mS)
DRAIN-SOURCE VOLTAGE V_{DS} (V)
b_{os}
I_D = 10mA (I_{DSS})
2
6
COMMON SOURCE
f = 100MHz
Ta = 25°C
g_{os}
10
6
2
5
3
1
0.5
0.3
0.1
0.05
0.03
4
6
8
10
12
14
16
18


Y_{fs}, Y_{rs} – V_{DS}
FORWARD, REVERSE TRANSFER ADMITTANCE
Y_{fs}, Y_{rs} (mS)
DRAIN-SOURCE VOLTAGE V_{DS} (V)
COMMON SOURCE
f = 100MHz
Ta = 25°C
I_D = 10mA (I_{DSS})
6
2
g_{fs}
$-b_{fs}$
10
6
2
$-b_{rs}$
10, 6, 2
30
10
5
3
1
0.5
0.2
4
6
8
10
12
14
16
18


P_D – Ta
DRAIN POWER DISSIPATION P_D (mW)
AMBIENT TEMPERATURE Ta (°C)
400
300
200
100
0
0
50
100
150
200