

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL JUNCTION TYPE

# 2SK161

FM TUNER APPLICATIONS

VHF BAND AMPLIFIER APPLICATIONS

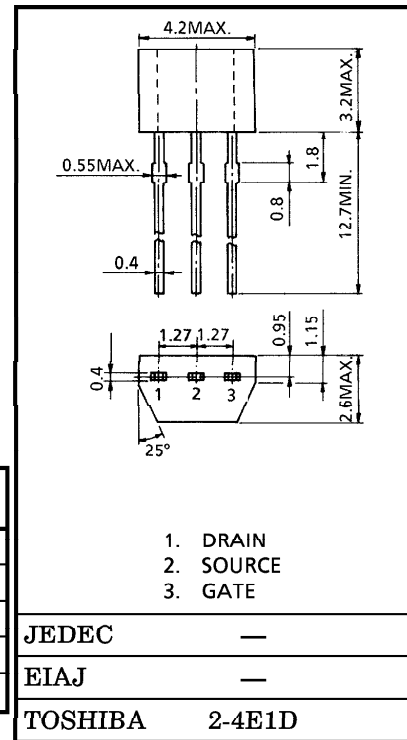
Unit in mm

- Low Noise Figure : NF=2.5dB (Typ.)  
(f=100MHz)
- High Forward Transfer Admittance : |Yfs|=9mS (Typ.)
- Extremely Low Reverse Transfer Capacitance : Crss=0.1pF (Typ.)

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MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Gate-Drain Voltage	VGDO	-18	V
Gate Current	IG	10	mA
Drain Power Dissipation	PD	200	mW
Junction Temperature	Tj	125	°C
Storage Temperature Range	Tstg	-55~125	°C



ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current	IGSS	VGS = -0.5V, VDS = 0	—	—	-10	nA
Gate-Drain Breakdown Voltage	V(BR)GDO	IG = -100μA	-18	—	—	V
Drain Current	IDSS (Note)	VGS = 0, VDS = 10V	1.0	—	10	mA
Gate-Source Cut-off Voltage	VGS(OFF)	VDS = 10V, ID = 1μA	-0.4	—	-4.0	V
Forward Transfer Admittance	Yfs	VGS = 0, VDS = 10V, f = 1kHz	—	9	—	mS
Input Capacitance	Ciss	VDS = 10V, VGS = 0, f = 1MHz	—	6.0	—	pF
Reverse Transfer Capacitance	Crss	VGD = -10V, f = 1MHz	—	0.10	0.15	pF
Power Gain	Gps	VDD = 10V, f = 100MHz (Fig.)	—	18	—	dB
Noise Figure	NF	VDD = 10V, f = 100MHz (Fig.)	—	2.5	3.5	dB

(Note) IDSS Classification O : 1.0~3.0mA, Y : 2.5~6.0mA, GR : 5.0~10.0mA

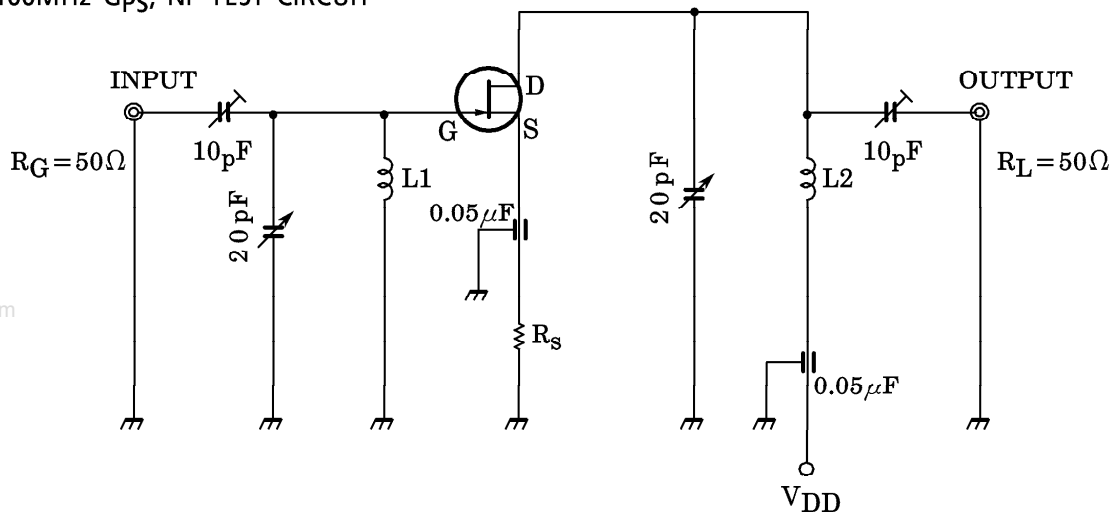
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図1. 100MHz GpS, NF TEST CIRCUIT



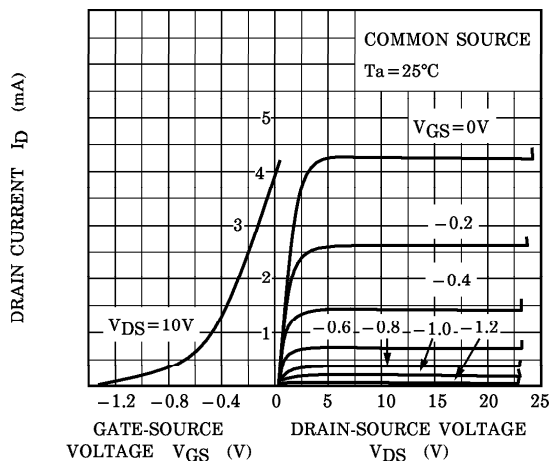
L<sub>1</sub> : 0.8mmφ A<sub>g</sub> PLATED Cu WIRE, 3 TURNS, 10mm ID, 10mm LENGTH.

L<sub>2</sub> : 0.8mmφ A<sub>g</sub> PLATED Cu WIRE, 3 TURNS, 10mm ID, 10mm LENGTH.

2SK161 is measured at each group by changing R<sub>S</sub>

GROUP	R <sub>S</sub> (Ω)
2SK161-O	0
2SK161-Y	18Ω ± 5%
2SK161-GR	100Ω ± 5%

STATIC CHARACTERISTICS



ID - VDS (LOW VOLTAGE REGION)

