

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL JUNCTION TYPE

2SK161

FM TUNER APPLICATIONS

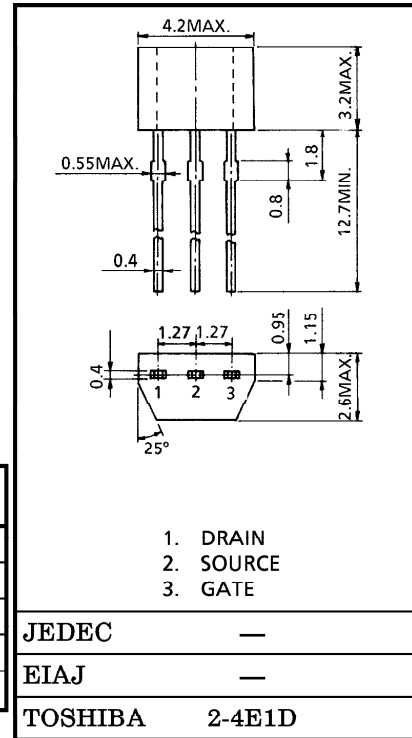
VHF BAND AMPLIFIER APPLICATIONS

Unit in mm

- Low Noise Figure : NF=2.5dB (Typ.)
(f=100MHz)
- High Forward Transfer Admittance : |Y_{fs}|=9mS (Typ.)
- Extremely Low Reverse Transfer Capacitance : C_{rss}=0.1pF (Typ.)

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



Weight : 0.13g

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current	I _{GSS}	V _{GS} = -0.5V, 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	1.0	—	10	mA
Gate-Source Cut-off Voltage	V _{GS (OFF)}	V _{DS} = 10V, I _D = 1μA	-0.4	—	-4.0	V
Forward Transfer Admittance	Y _{fs}	V _{GS} = 0, V _{DS} = 10V, f = 1kHz	—	9	—	mS
Input Capacitance	C _{iss}	V _{DS} = 10V, V _{GS} = 0, f = 1MHz	—	6.0	—	pF
Reverse Transfer Capacitance	C _{rss}	V _{GD} = -10V, f = 1MHz	—	0.10	0.15	pF
Power Gain	G _{PS}	V _{DD} = 10V, f = 100MHz (Fig.)	—	18	—	dB
Noise Figure	NF	V _{DD} = 10V, f = 100MHz (Fig.)	—	2.5	3.5	dB

(Note) I_{DSS} Classification O : 1.0~3.0mA, Y : 2.5~6.0mA, GR : 5.0~10.0mA

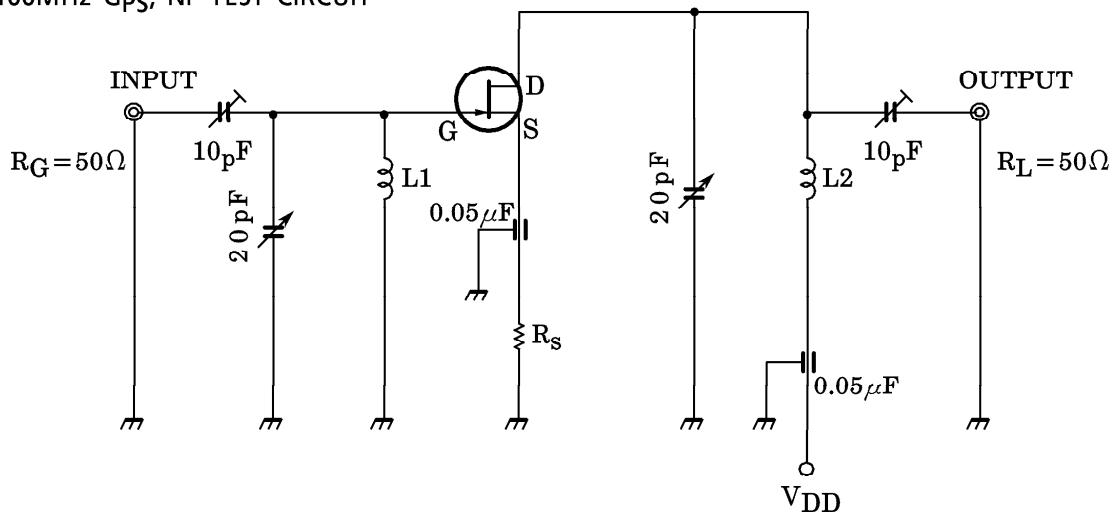
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図1. 100MHz GpS, NF TEST CIRCUIT



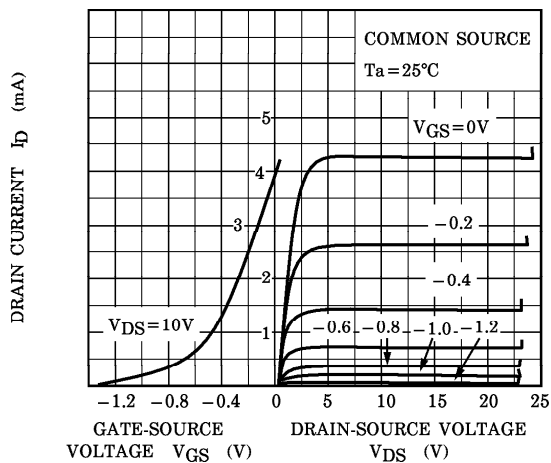
L₁ : 0.8mmφ Ag PLATED Cu WIRE, 3 TURNS, 10mm ID, 10mm LENGTH.

L₂ : 0.8mmφ Ag PLATED Cu WIRE, 3 TURNS, 10mm ID, 10mm LENGTH.

2SK161 is measured at each group by changing R_S

GROUP	R _S (Ω)
2SK161-O	0
2SK161-Y	18Ω ± 5%
2SK161-GR	100Ω ± 5%

STATIC CHARACTERISTICS



ID - VDS (LOW VOLTAGE REGION)

