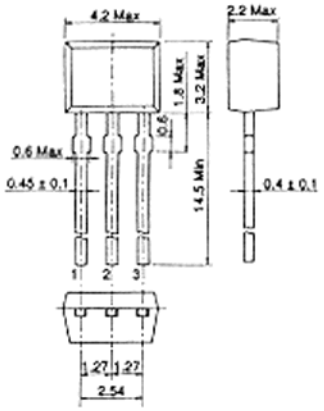
HITACHI

2SK522

SILICON N-CHANNEL JUNCTION FET

VHF AMPLIFIER, MIXER, LOCAL OSCILLATOR



(SPAK)

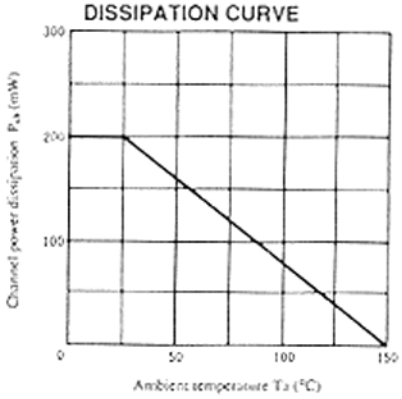
1. Gate
2. Source
3. Drain

(Dimensions in mm)

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	2SK522	Unit
Gate to drain voltage	V_{GDO}	−30	V
Gate current	I_G	10	mA
Drain current	I_D	20	mA
Channel power dissipation	P_{ch}	200	mW
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

MAXIMUM CHANNEL POWER DISSIPATION CURVE



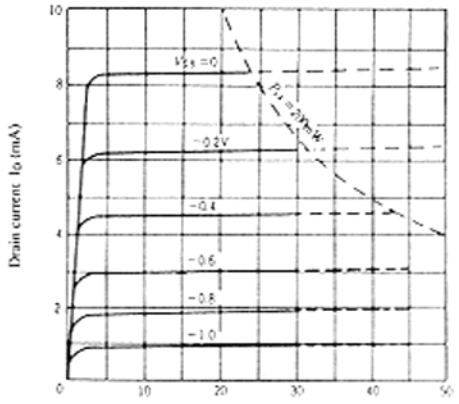
■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Gate to drain breakdown voltage	$V_{(BR)GDO}$	I_G = −100μA, I_S = 0	−30	—	—	V
Gate cutoff current	I_{GSS}	V_{GS} = −0.5V, V_{DS} = 0	—	—	−10	nA
Drain current	I_{DSS}*	V_{DS} = 5V, V_{GS} = 0	4	—	20	mA
Gate to source cutoff voltage	$V_{GS(off)}$	V_{DS} = 5V, I_D = 10μA	—	—	−3	V
Forward transfer admittance	$\lvert y_{fs} \rvert$	V_{DS} = 5V, V_{GS} = 0, f = 1kHz	8	10	—	mS
Input capacitance	C_{iss}	V_{DS} = 5V, V_{GS} = 0, f = 1MHz	—	6.8	—	pF
Reverse transfer capacitance	C_{rss}		—	0.1	—	pF
Power gain	PG	V_{DS} = 5V, V_{GS} = 0, f = 100MHz	20	27	—	dB
Noise figure	NF		—	1.7	2.5	dB

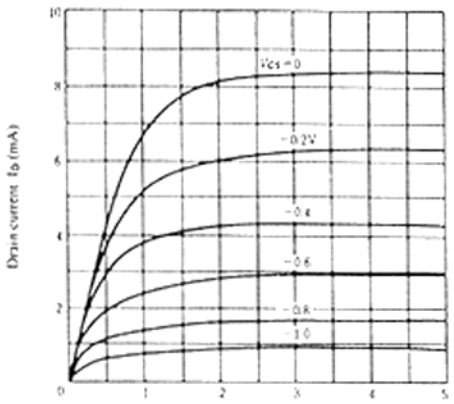
* The 2SK522 is grouped by I_{DSS} as follows.

D	E	F
4 to 8	6 to 12	10 to 20

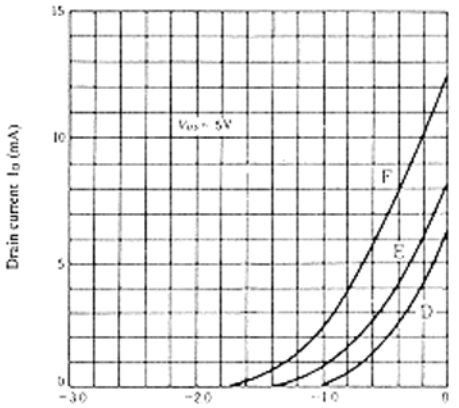
TYPICAL OUTPUT CHARACTERISTICS(1)



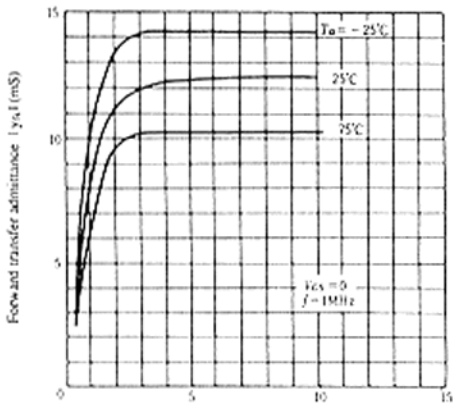
TYPICAL OUTPUT CHARACTERISTICS(2)



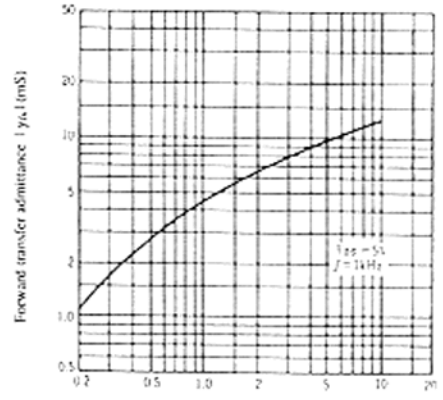
TYPICAL TRANSFER CHARACTERISTICS



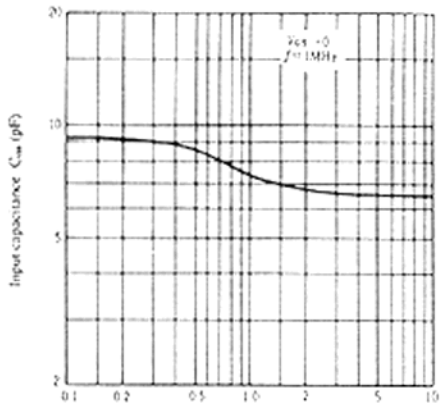
FORWARD TRANSFER ADMITTANCE VS. DRAIN TO SOURCE VOLTAGE



FORWARD TRANSFER ADMITTANCE VS. DRAIN CURRENT

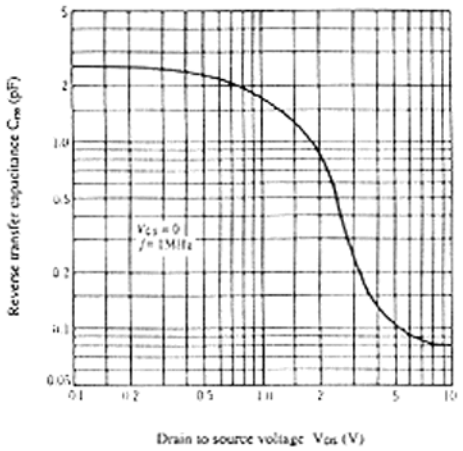


INPUT CAPACITANCE VS. DRAIN TO SOURCE VOLTAGE

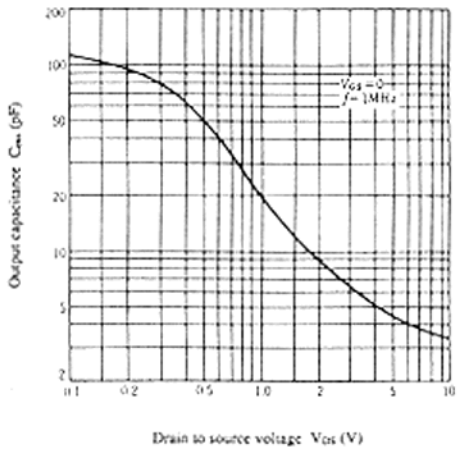


2SK522

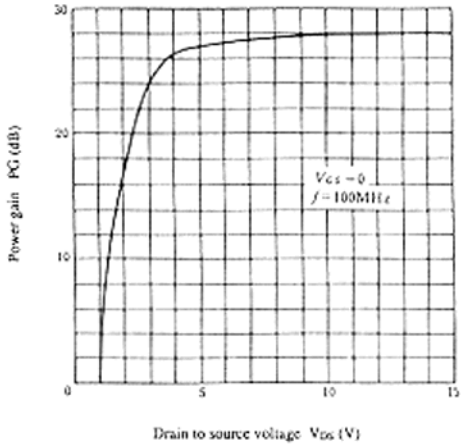
REVERSE TRANSFER CAPACITANCE VS. DRAIN TO SOURCE VOLTAGE



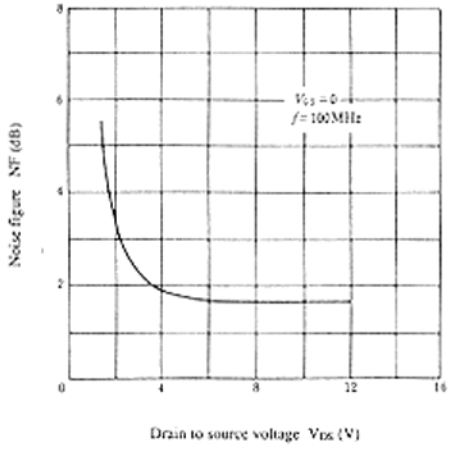
OUTPUT CAPACITANCE VS. DRAIN TO SOURCE VOLTAGE



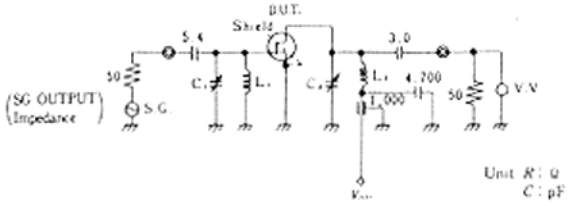
POWER GAIN VS. DRAIN TO SOURCE VOLTAGE



NOISE FIGURE VS. DRAIN TO SOURCE VOLTAGE



POWER GAIN AND NOISE FIGURE TEST CIRCUIT



C_1, C_2 : 0 to 30pF MAX Variable Air
L_1 : 3.5T 1mmφ Copper Ribbon, Tin plated 10mm Inside dia.
L_2 : 4.5T 1mmφ Copper Ribbon, Tin plated 10mm Inside dia.