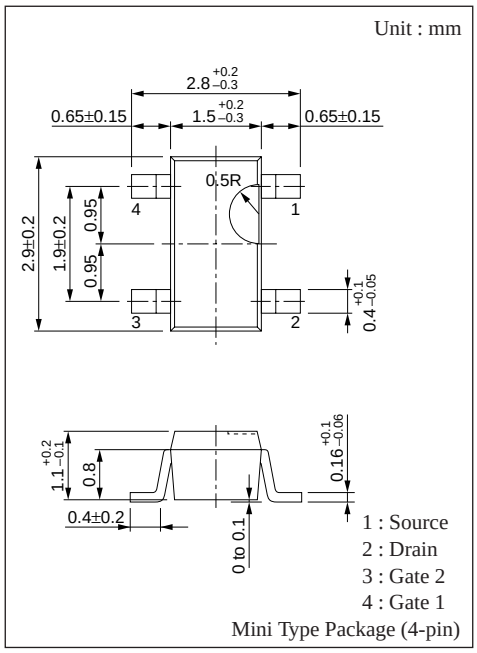
3SK241

GaAs N-Channel MES

For VHF-UHF amplification



■ Features

- Low noise-figure (NF)
- Large power gain PG
- Downsizing of sets by mini power package and automatic insertion by taping/magazine packing are available.

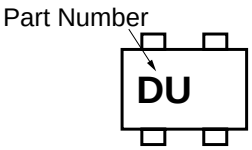
■ Absolute Maximum Ratings (Ta = 25˚C)

Parameter	Symbol	Rating	Unit
Drain-Source voltage	V_{DS}	13	V
Gate 1-Source voltage	V_{G1S}	– 6	V
Gate 2-Source voltage	V_{G2S}	– 6	V
Drain current	I_D	50	mA
Gate 1 current	I_{G1}	1	mA
Gate 2 current	I_{G2}	1	mA
Allowable power dissipation	P_D	200	mW
Channel temperature	T_{ch}	150	˚C
Storage temperature	T_{stg}	– 55 to +150	˚C

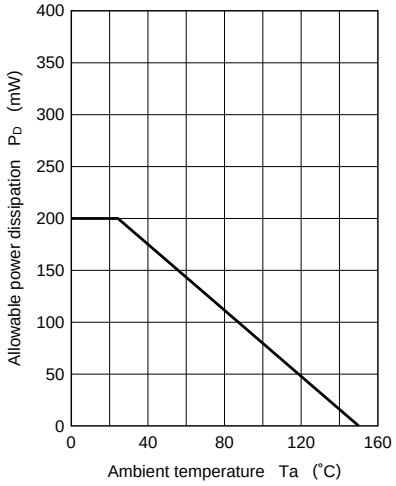
■ Electrical Characteristics (Ta = 25˚C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Drain-Source cut-off current	I_{DSS}	V_{DS}= 5V, V_{G1S}= 0, V_{G2S}= 0	8.5		35	mA
Gate 2-Drain current	I_{G2DO}	V_{G2D}= –13V(G1, S= Open)			50	µA
Gate 1 cut-off current	I_{G1SS}	V_{DS}= V_{G2S}= 0, V_{G1S}= – 6V			– 20	µA
Gate 2 cut-off current	I_{G2SS}	V_{DS}= V_{G1S}= 0, V_{G2S}= – 6V			– 20	µA
Drain cut-off current	I_{DSX}	V_{DS}=13V, V_{G1S}= – 3.5V, V_{G2S}= 0			50	µA
Gate 1-Source cut-off voltage	V_{G1SC}	V_{DS}= 5V, V_{G2S}= 0, I_D= 200µA			– 3.5	V
Gate 2-Source cut-off voltage	V_{G2SC}	V_{DS}= 5V, V_{G1S}= 0, I_D= 200µA			– 3.5	V
Forward transadmittance	$\|Y_{fs}\|$	V_{DS}= 5V, I_D=10mA, V_{G2S}=1.5V, f=1kHz	18	23		mS
Input capacitance	C_{iss}	V_{DS}= 5V, V_{G1S}= V_{G2S}= – 6V, f=1MHz		0.4	2	pF
Output capacitance	C_{oss}			0.3	1.2	pF
Feedback capacitance	C_{rss}			0.02	0.04	pF
Power gain	PG	V_{DS}= 5V, I_D=10mA, V_{G2S}=1.5V, f= 800MHz	13	19		dB
Noise figure	NF			1.5	2.5	dB
Gain reduction	G_R	V_{DS}= 5V, V_{AGC}=1.5V/ – 3.5V. f= 800MHz	37	45		dB

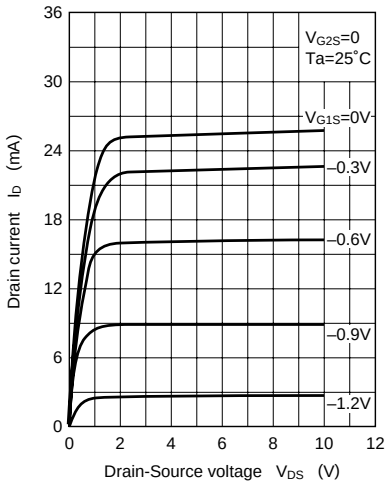
■ Marking



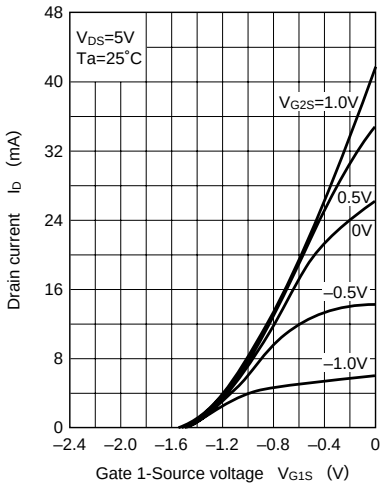
$P_D - Ta$



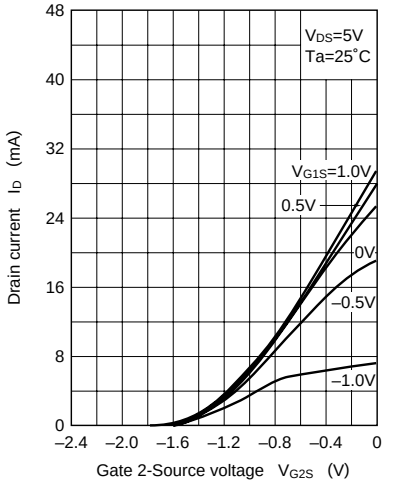
$I_D - V_{DS}$



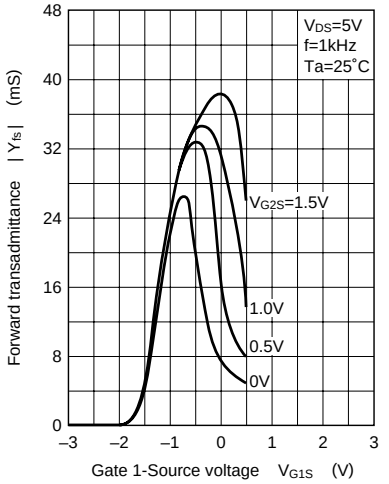
$I_D - V_{G1S}$



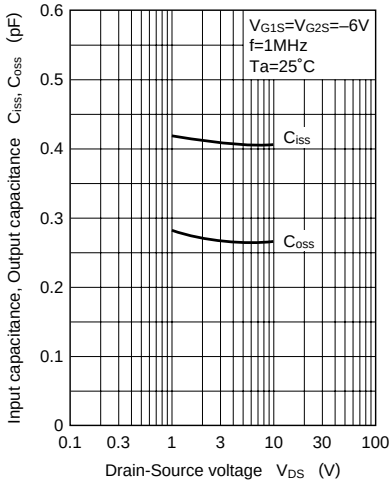
$I_D - V_{G2S}$



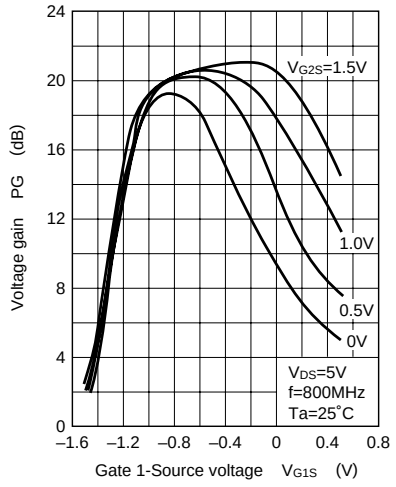
$|Y_{fs}| - V_{G1S}$



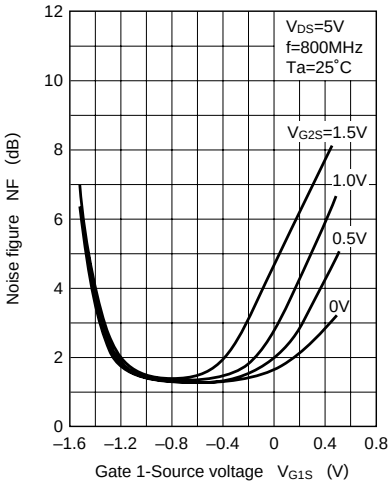
$C_{iss}, C_{oss} - V_{DS}$



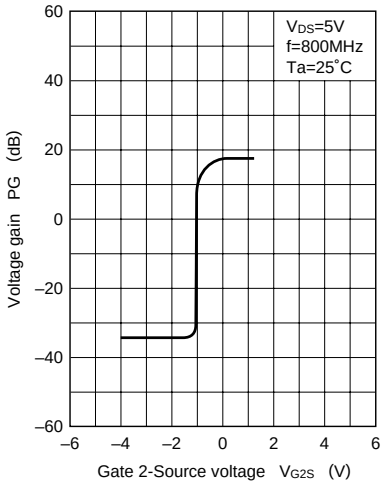
$PG - V_{G1S}$



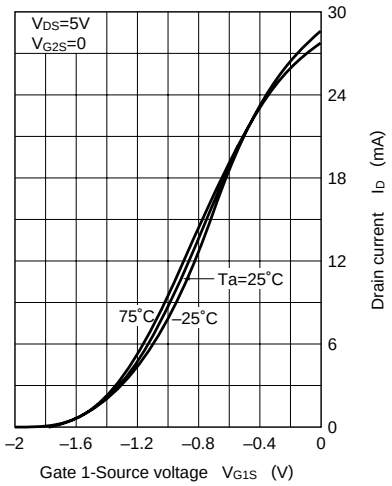
$NF - V_{G1S}$



$PG - V_{G2S}$



$I_D - V_{G1S}$


VDS=5V
VG2S=0
30
24
18
12
6
0
Drain current ID (mA)
Ta=25˚C
75˚C
–25˚C
–2
–1.6
–1.2
–0.8
–0.4
0
Gate 1-Source voltage VG1S (V)