Ordering number : EN5820

N-Channel GaAs MESFET

SGF25

For C- to X-band local oscillator and amplifier

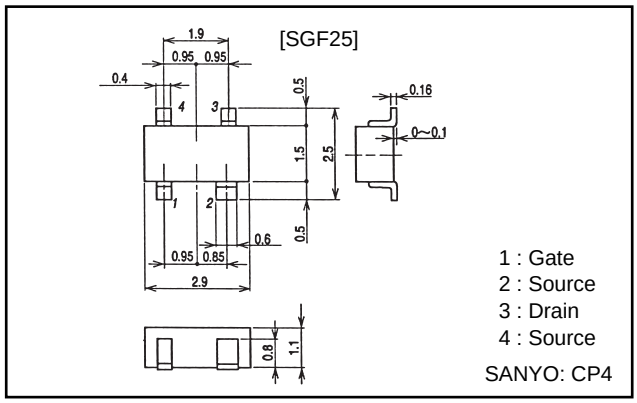
Features

- Super miniaturized plastic-mold package(CP4).
- High reliability achieved by original manufacturing technology(adopting a protection coat).
- Available for surface mounting and automatic inserting.

Package Dimensions

unit: mm

2134A



Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain to source voltage	V_{DS}		6.0	V
Gate to source voltage	V_{GS}		–5.0	V
Drain current	I_D		100	mA
Dissipation power	P_D		200	mW
Junction temperature	Tj		150	°C
Storage temperature	Tstg		–55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate to source breakdown voltage	$V_{(BR)GSO}$	I_{GS}=–10μA	–5.0			V
Zero gate voltage drain current	I_{DSS}	V_{DS}=3V, V_{GS}=0	30	45	65	mA
Gate to source cutoff voltage	$V_{GS(off)}$	V_{DS}=3V, I_D=100μA	–0.5	–1.5	–3.0	V
Forward transfer admittance	$\|Y_{fs}\|$	V_{DS}=3V, I_D=10mA		40		mS
Minimum noise figure	NFmin	V_{DS}=3V, ID=10mA f=12GHz		2.5		dB
Associated gain	Ga			5.5		dB
Maximum available gain	MAG			7.0		dB

SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquarters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

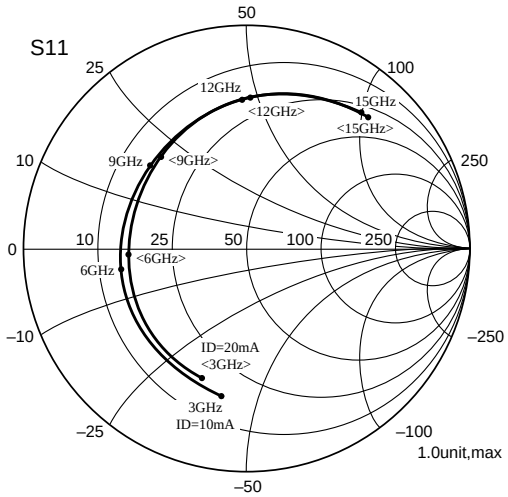
Vds=3V, Ids=10mA
SGF25

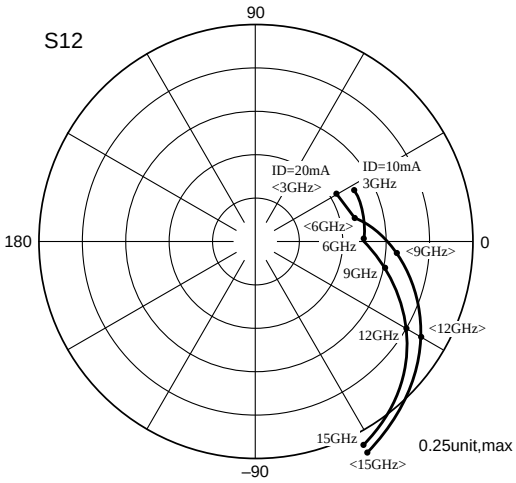
Frequency (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
3000.0000	0.680	-98.6	3.086	93.5	0.131	27.6	0.556	-68.8
4000.0000	0.621	-123.5	2.750	72.2	0.130	16.3	0.480	-85.8
5000.0000	0.584	-147.0	2.445	51.8	0.128	8.1	0.418	-102.7
6000.0000	0.564	-168.7	2.175	32.6	0.128	2.7	0.372	-120.5
7000.0000	0.561	171.7	1.943	14.4	0.133	-1.3	0.343	-140.0
8000.0000	0.570	153.6	1.747	-2.9	0.141	-5.5	0.332	-161.5
9000.0000	0.590	136.8	1.579	-19.6	0.152	-10.4	0.339	175.7
10000.0000	0.616	120.9	1.431	-35.9	0.166	-16.1	0.364	153.2
11000.0000	0.648	105.7	1.297	-51.8	0.183	-22.7	0.403	131.8
12000.0000	0.684	91.1	1.174	-67.3	0.203	-30.6	0.454	112.2
13000.0000	0.724	77.1	1.059	-82.4	0.225	-39.9	0.511	94.1
14000.0000	0.765	63.5	0.951	-97.1	0.247	-50.6	0.570	77.0
15000.0000	0.805	50.1	0.847	-111.4	0.266	-62.2	0.627	60.6

Vds=3V, Ids=20mA
SGF25

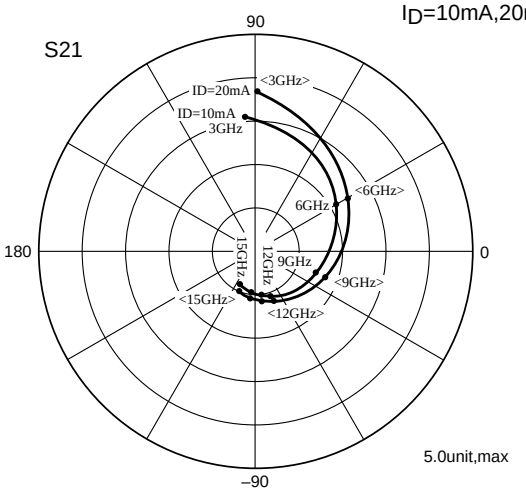
Frequency (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
3000.0000	0.626	-107.6	3.654	89.5	0.112	30.7	0.465	-71.1
4000.0000	0.576	-132.7	3.187	68.6	0.113	22.4	0.395	-87.4
5000.0000	0.548	-155.9	2.779	49.0	0.116	16.9	0.340	-103.7
6000.0000	0.539	-176.8	2.435	30.6	0.123	12.8	0.301	-121.4
7000.0000	0.544	164.5	2.153	13.2	0.134	8.3	0.278	-141.5
8000.0000	0.561	147.3	1.924	-3.3	0.149	2.6	0.272	-164.0
9000.0000	0.586	131.3	1.735	-19.3	0.165	-4.4	0.283	172.2
10000.0000	0.616	116.0	1.573	-35.0	0.182	-12.1	0.312	149.1
11000.0000	0.650	101.4	1.428	-50.4	0.200	-20.5	0.355	127.9
12000.0000	0.688	87.5	1.297	-65.5	0.220	-29.7	0.409	108.8
13000.0000	0.728	74.0	1.176	-80.4	0.240	-40.0	0.469	91.2
14000.0000	0.771	60.8	1.063	-95.0	0.259	-51.2	0.530	74.7
15000.0000	0.812	47.9	0.955	-109.4	0.276	-63.0	0.589	58.8

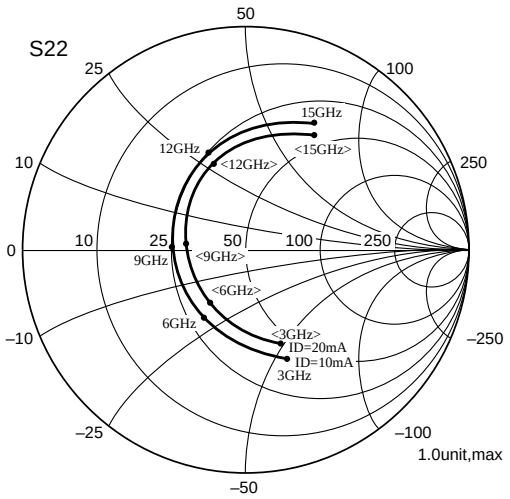
S-parameter





V_{DS}=3V
I_D=10mA,20mA





< > : Ids=20mA

START 3 GHz
STOP 15 GHz
STEP 1 GHz