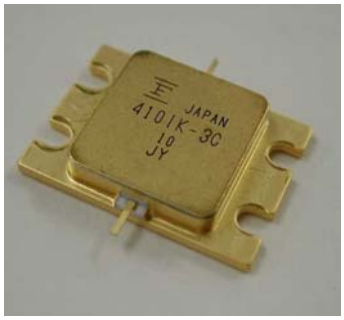
FLL410IK-3C

L-Band High Power GaAs FET



FEATURES

- High Output Power: Pout=46.0dBm(Typ.)
- High Gain: GL=13.0dB(Typ.)
- High PAE: ηadd=52%(Typ.)
- Broad Band: 2.5~2.7GHz
- Hermetically Sealed Package

DESCRIPTION

The FLL410IK-3C is a partially matched 40 Watt GaAs FET that is designed for use in 2.5 – 2.7 GHz band amplifiers. This new product is uniquely suited for use in MMDS applications as it offers excellent linearity, high efficiency, high gain, long term reliability and ease of use.

Fujitsu's stringent Quality Assurance Program assures the highest reliability and consistent performance.

ABSOLUTE MAXIMUM RATINGS (Case Temperature Tc=25°C)

Item	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	15	V
Gate-Source Voltage	V_{GS}	-5	V
Total Power Dissipation	PT	100	W
Storage Temperature	T_{stg}	-65 to +175	°C
Channel Temperature	T_{ch}	175	°C

RECOMMENNDED OPERATING CONDITION(Case Temperature Tc=25°C)

Item	Symbol	Condition	Limit	Unit
DC Input Voltage	V_{DS}		≤12	V
Gate Current	I_{GF}	R_G=5Ω	≤88	mA
Gate Current	I_{GR}	R_G=5Ω	≥-25	mA
Operating Channel Temperature	Tch		≤145	°C

ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25°C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Drain Current	I_{DSS}	V_{DS}=5V, V_{GS}=0V	-	4.0	-	A
Pinch-off Voltage	V_p	V_{DS}=5V, I_{DS}=110mA	-0.1	-0.3	-0.5	V
Gate-Source Breakdown Voltage	V_{GSO}	I_{GS}=-1.1mA	-5.0	-	-	V
Output Power	P_{OUT}	V_{DS}=12V f=2.6 GHz I_{DS}=3A Pin=35.0dBm	45.0	46.0	-	dBm
Linear Gain *1	G_L		12.0	13.0	-	dB
Drain Current	I_{dsr}		-	5.9	7.6	A
Power-added Efficiency	ηadd		-	52	-	%
Thermal Resistance	R_{th}	Channel to Case	-	1.3	1.5	°C/W

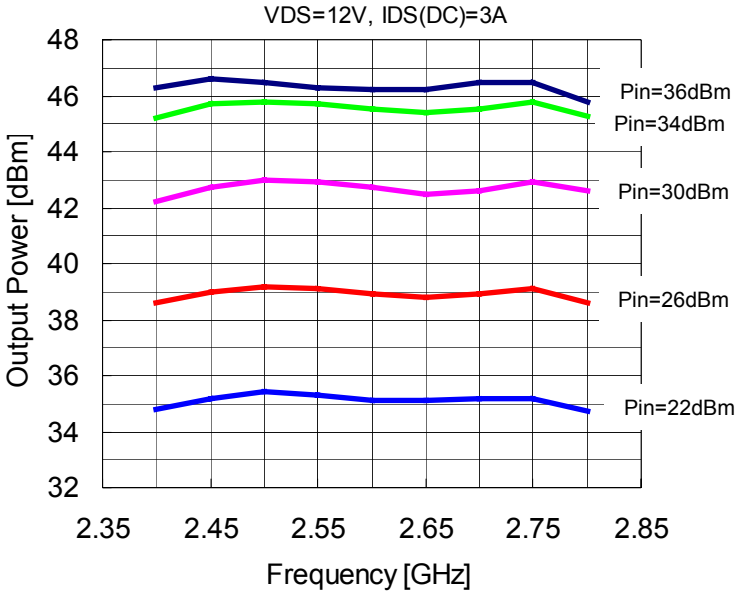
*1 : GL is measured at Pin=22.0dBm

CASE STYLE: IK

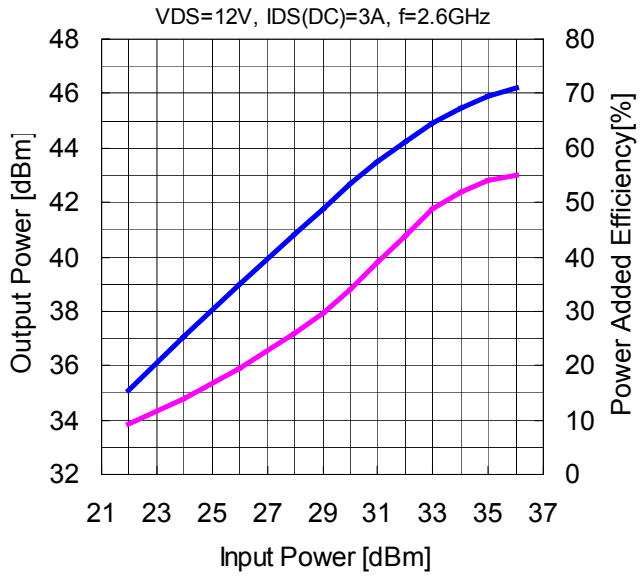
ESD	Class Ⅲ	2000V ~

Note : Based on EIAJ ED-4701 C-111A(C=100pF, R=1.5kΩ)

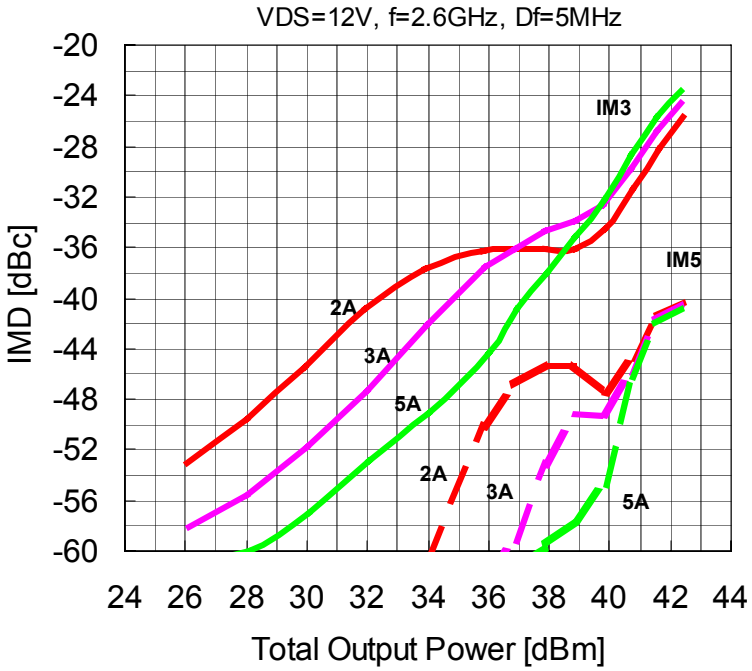
OUTPUT POWER vs. INPUT POWER



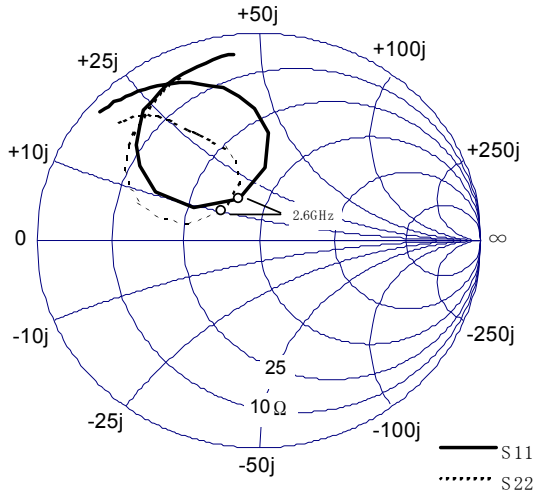
OUTPUT POWER , POWER ADDED EFFICIENCY vs. TOTAL INPUT POWER

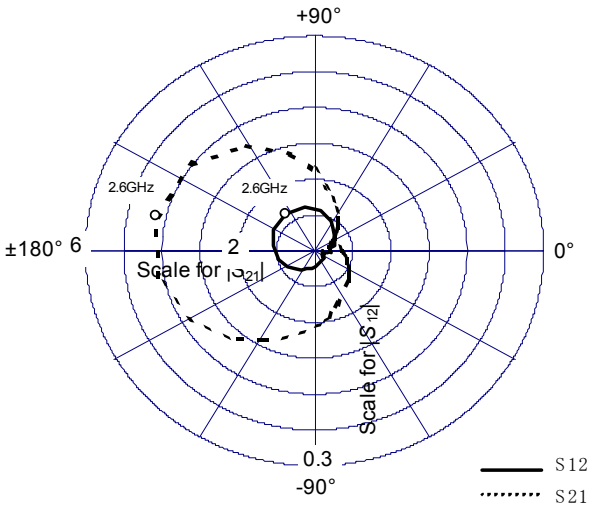


IMD vs. TOTAL OUTPUT POWER



■ S-PARAMETER



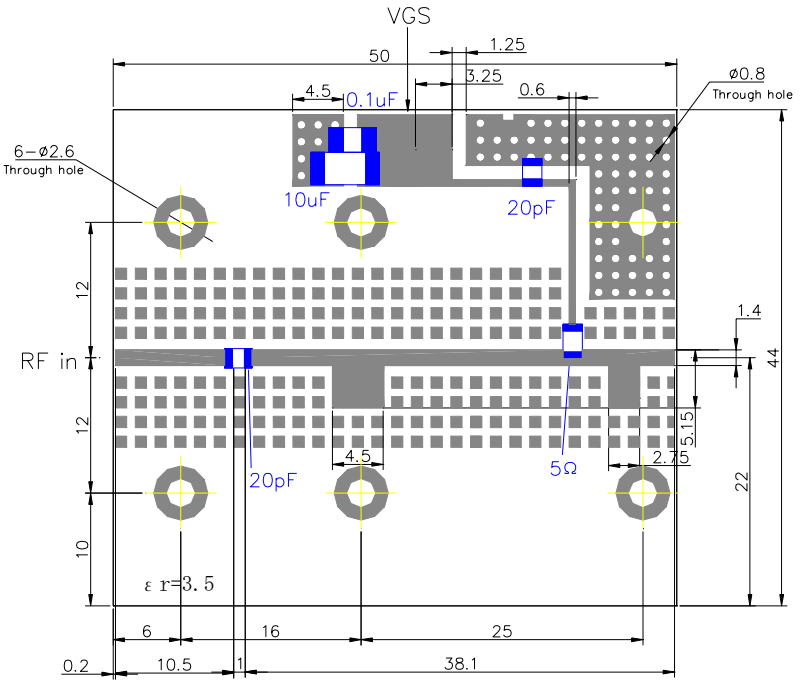


VDS=12V, IDS=3.0A

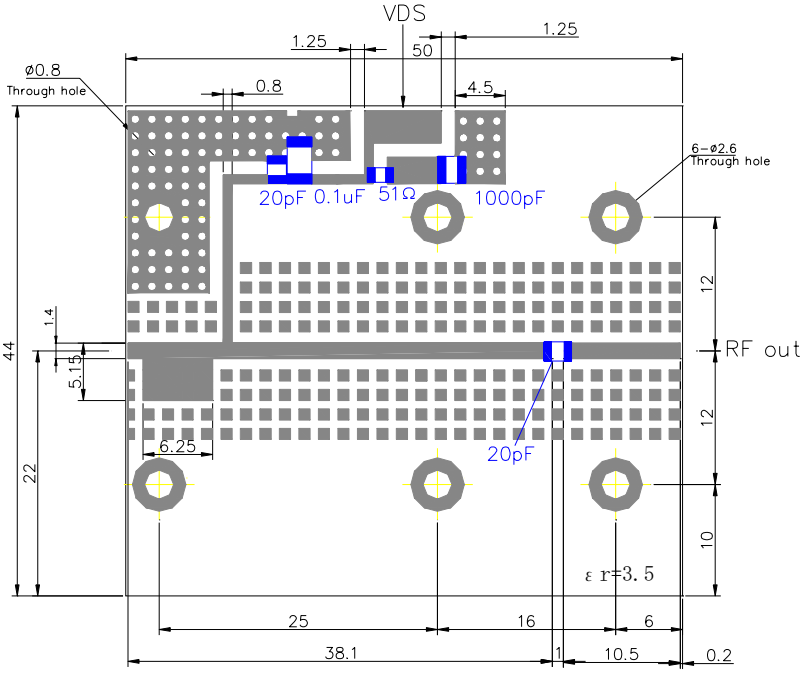
Freq	S11		S21		S12		S22	
[GHz]	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.50	0.95	139.13	0.66	5.71	0.01	-7.76	0.85	137.80
1.60	0.94	136.13	0.73	-1.34	0.01	-21.24	0.83	134.28
1.70	0.92	132.48	0.83	-11.38	0.01	-27.54	0.80	130.79
1.80	0.91	129.08	0.93	-21.69	0.01	-37.64	0.76	127.82
1.90	0.89	125.19	1.08	-33.36	0.01	-48.85	0.72	125.28
2.00	0.87	121.65	1.26	-45.28	0.01	-64.79	0.68	122.79
2.20	0.83	112.20	1.82	-76.40	0.02	-97.72	0.61	119.58
2.30	0.78	106.32	2.27	-95.83	0.02	-122.75	0.57	117.16
2.40	0.70	97.54	2.86	-118.23	0.03	-148.63	0.52	112.58
2.50	0.52	85.55	3.75	-149.12	0.04	173.08	0.40	105.59
2.60	0.22	114.34	4.29	166.53	0.04	127.14	0.22	139.17
2.70	0.52	153.17	3.43	121.10	0.04	82.29	0.47	165.62
2.80	0.72	139.88	2.23	89.90	0.03	50.87	0.65	155.17
2.90	0.82	129.39	1.54	71.09	0.02	27.82	0.72	145.97
3.00	0.85	121.63	1.10	57.03	0.02	15.34	0.76	138.08
3.10	0.87	116.02	0.87	45.39	0.01	-3.89	0.79	130.98
3.20	0.88	110.41	0.66	35.06	0.01	-7.86	0.82	125.09
3.30	0.89	105.71	0.56	28.49	0.01	-16.93	0.84	120.80
3.40	0.90	100.75	0.47	20.22	0.01	-25.52	0.86	117.16
3.50	0.91	97.00	0.42	15.07	0.01	-22.89	0.86	113.34

■ BOARD LAYOUT(Reference)

<INPUT SIDE>

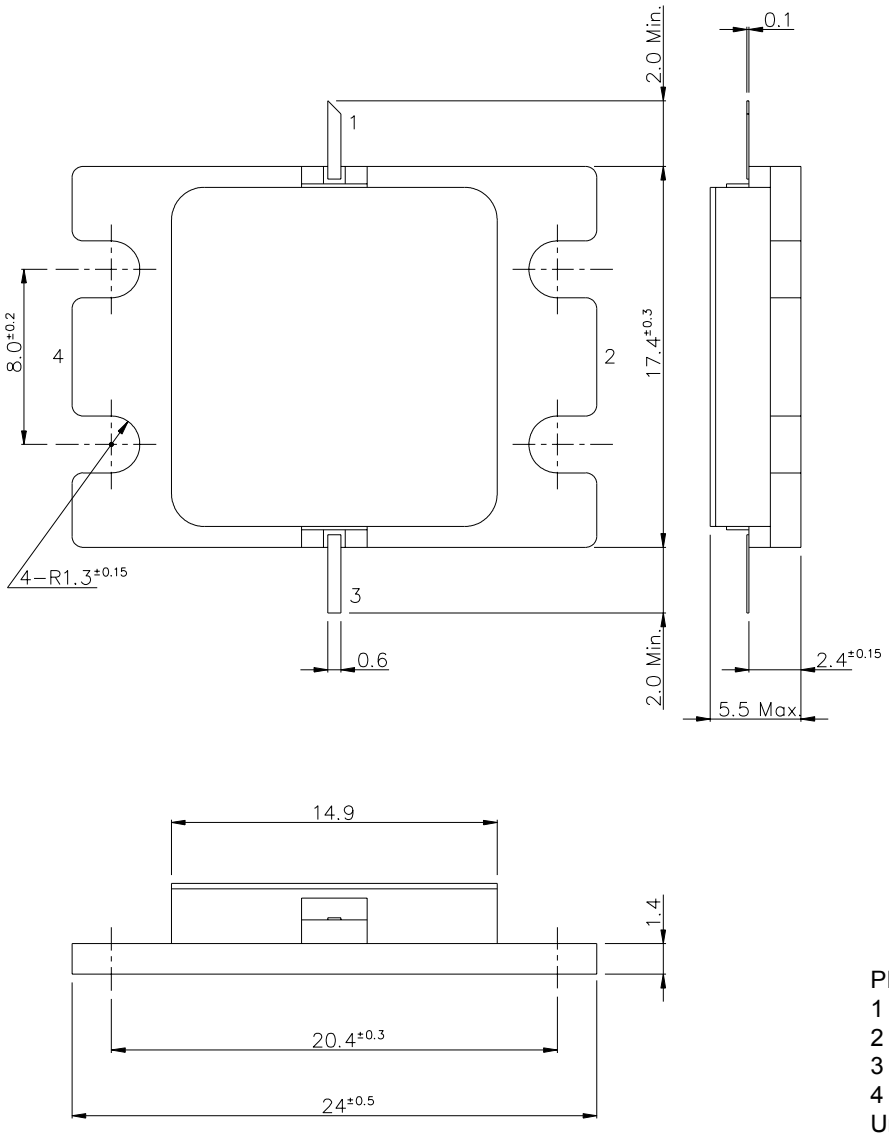


<OUTPUT SIDE>



εr=3.5, t=0.6mm
Unit : mm

■ Package Out Line



PIN ASSIGMENT
1 : GATE
2 : SOURCE
3 : DRAIN
4 : SOURCE
Unit : mm

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CAUTION

Fujitsu Compound Semiconductor Products contain **gallium arsenide (GaAs)** which can be hazardous to the human body and the environment. For safety, observe the following procedures:

- Do not put these products into the mouth.
- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- Observe government laws and company regulations when discarding this product. This product must be discarded in accordance with methods specified by applicable hazardous waste procedures.