

FLL410IK-3C

L-Band High Power GaAs FET

FEATURES

- High Output Power: $P_{out}=46.0\text{dBm(Typ.)}$
- High Gain: $GL=13.0\text{dB(Typ.)}$
- High PAE: $\eta_{add}=52\%(\text{Typ.})$
- 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 $T_c=25^\circ\text{C}$)

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	$^\circ\text{C}$
Channel Temperature	T_{ch}	175	$^\circ\text{C}$

RECOMMENDED OPERATING CONDITION(Case Temperature $T_c=25^\circ\text{C}$)

Item	Symbol	Condition	Limit	Unit
DC Input Voltage	V_{DS}		≤ 12	V
Gate Current	I_{GF}	$R_G=5\Omega$	≤ 88	mA
Gate Current	I_{GR}	$R_G=5\Omega$	≥ -25	mA
Operating Channel Temperature	T_{ch}		≤ 145	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS (Case Temperature $T_c=25^\circ\text{C}$)

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

* 1 : GL is measured at $P_{in}=22.0\text{dBm}$

CASE STYLE: IK

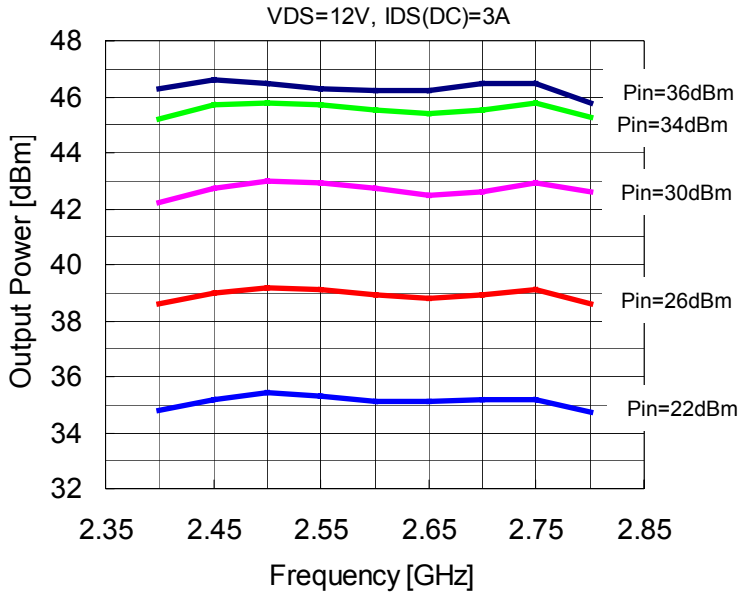
ESD	Class III	2000V ~
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Note : Based on EIAJ ED-4701 C-111A($C=100\text{pF}$, $R=1.5\text{k}\Omega$)

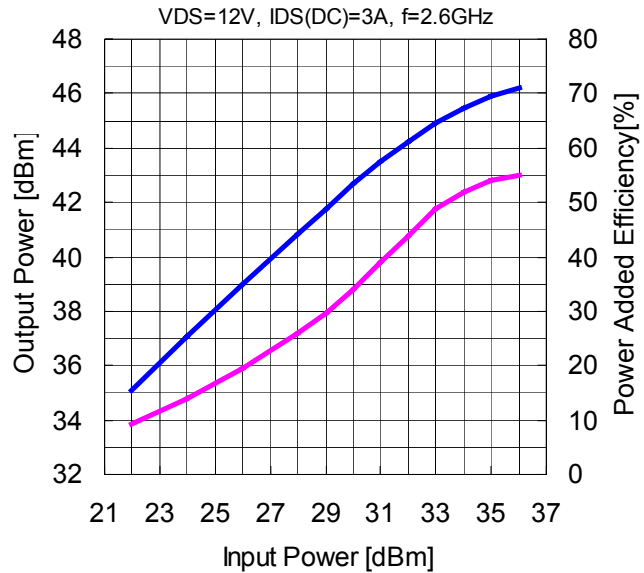
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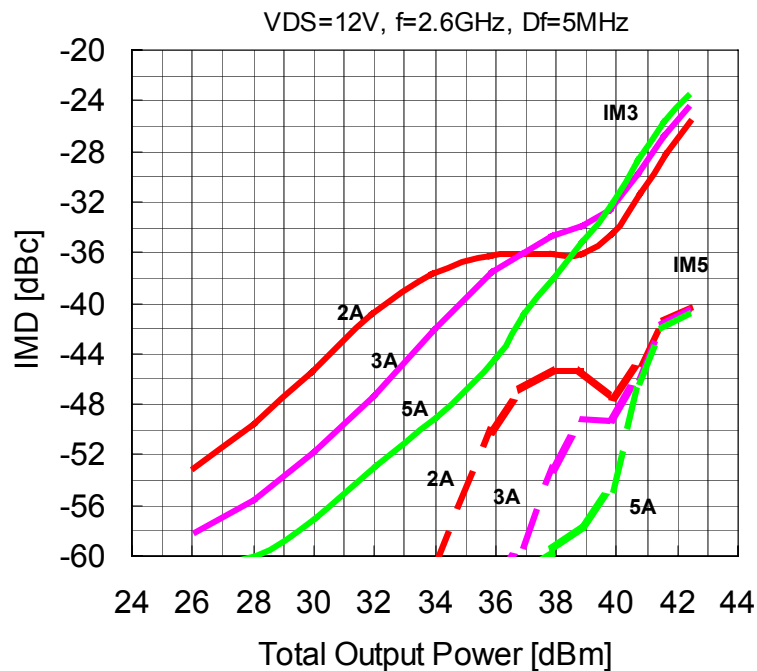
OUTPUT POWER vs. INPUT POWER



OUTPUT POWER, POWER ADDED EFFICIENCY vs. TOTAL INPUT POWER



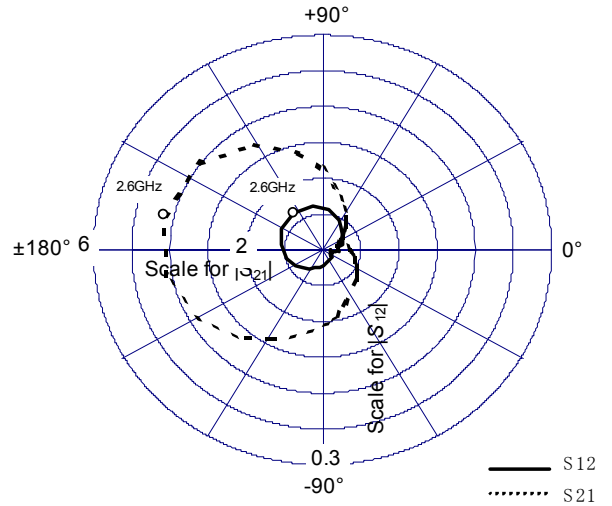
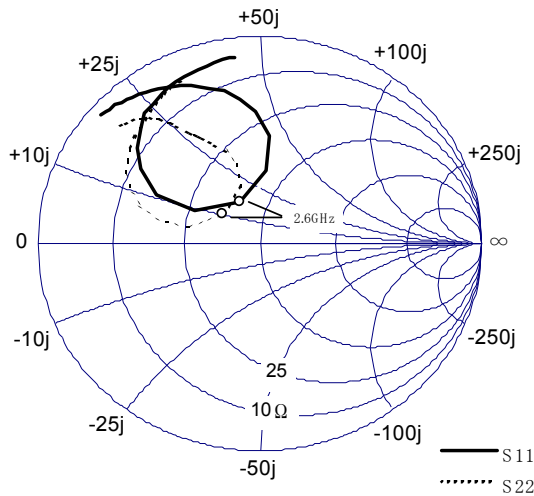
IMD vs. TOTAL OUTPUT POWER



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■ S-PARAMETER



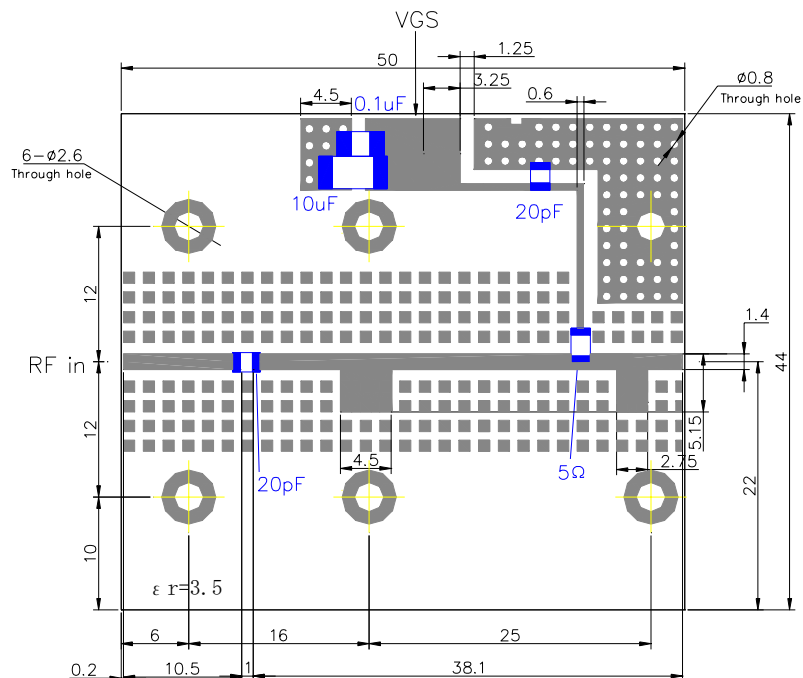
VDS=12V, IDS=3.0A

Freq [GHz]	S11		S21		S12		S22	
	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

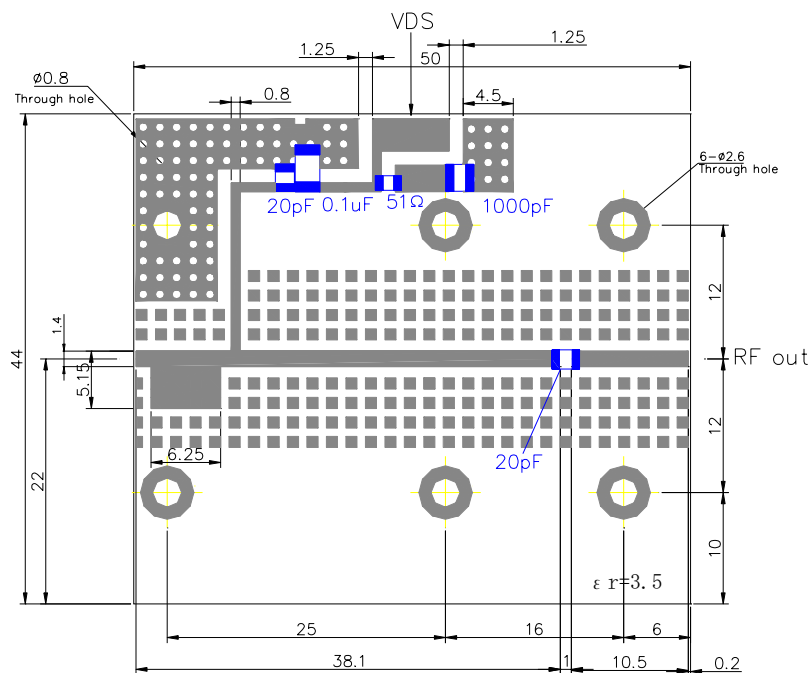
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■ BOARD LAYOUT(Reference)

<INPUT SIDE>



<OUTPUT SIDE>

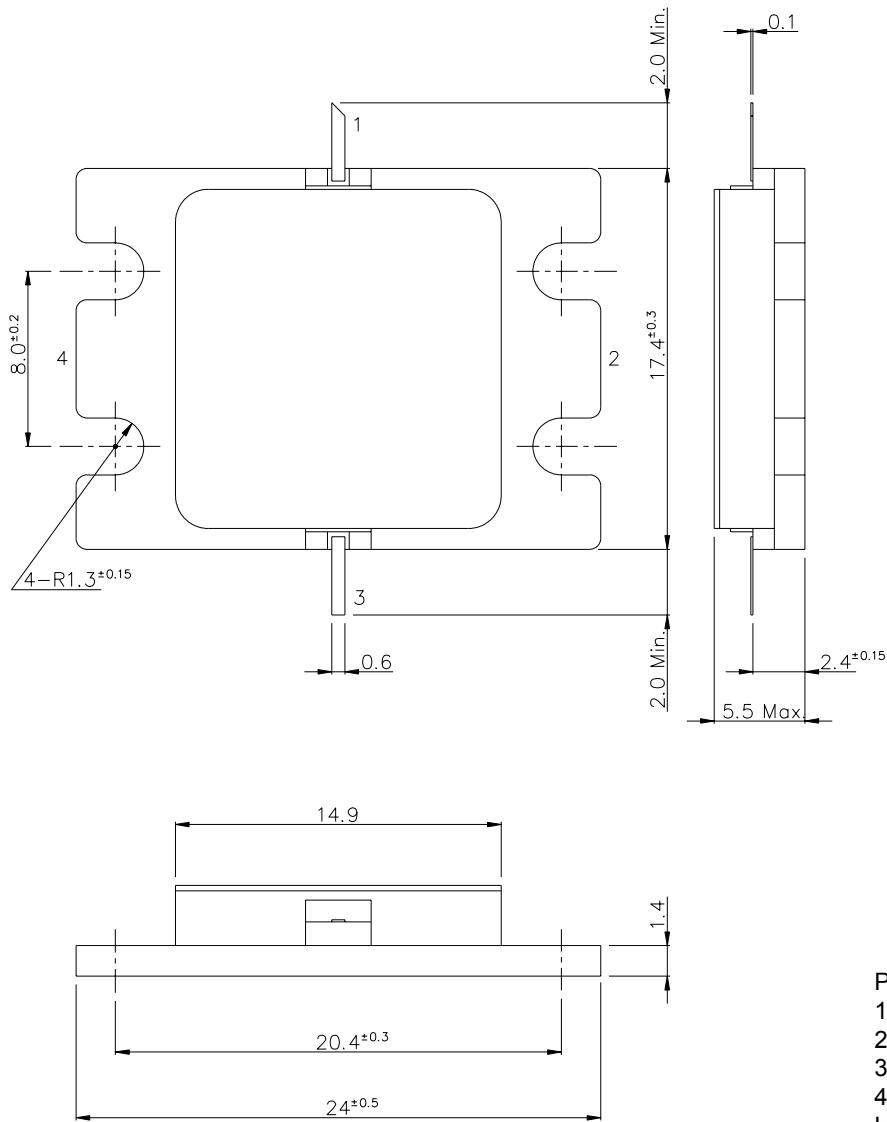


$\epsilon_r=3.5$, $t=0.6\text{mm}$
Unit : mm

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■ Package Out Line



PIN ASSIGNMENT

- 1 : GATE
- 2 : SOURCE
- 3 : DRAIN
- 4 : SOURCE

Unit : mm

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- 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.