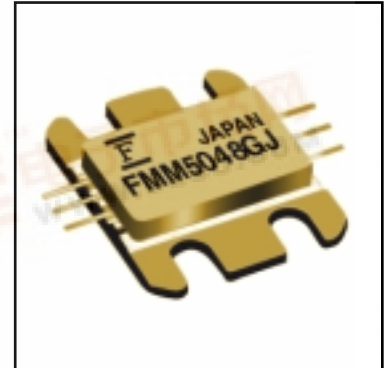


FMM5048GJ

VSAT MMIC

FEATURES

- High Output Power: $P_{1dB} = 36.0\text{dBm(Typ.)}$
- High Gain: $G_{1dB} = 26.0\text{dB(Typ.)}$
- Low In/Out VSWR
- Broad Band: 13.75 ~ 14.5GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package (12 X 15 X 3.5mm)



DESCRIPTION

The FMM5048GJ is a module that contains a two-stage amplifier, internally matched, for standard communications in the 13.75 to 14.5GHz frequency range. This product is well suited for VSAT applications as it offers high power, high gain, and low VSWR.

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

ABSOLUTE MAXIMUM RATINGS (Ambient Temperature $T_a = 25^\circ\text{C}$)

Parameter	Symbol	Condition	Rating	Unit
DC Input Voltage	V_{DD}		12	V
DC Input Voltage	V_{GG}		-7	V
Input Power	P_{in}	$T_c = 25^\circ\text{C}$	12	dBm
Storage Temperature	T_{stg}		-55 to +125	$^\circ\text{C}$
Operating Case Temperature	T_{op}		-55 to +85	$^\circ\text{C}$

Fujitsu recommends the following conditions for the reliable operation of GaAs modules:

1. The drain operating voltage (V_{DD}) should not exceed 10 volts.
2. The gate operating voltage (V_{GG}) should not exceed -5 volts.

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

Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DD} = 10\text{V}$ $V_{GG} = -5\text{V}$ $f = 13.75 \sim 14.5\text{GHz}$	35.0	36.0	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		23.0	26.0	-	dB
Gain Flatness	ΔG		-	1.2	3.0	dB
Input VSWR	$VSWR_i$		-	2:1	2.5:1	-
Output VSWR	$VSWR_o$		-	3:1	3.5:1	-
DC Input Current	I_{DD}		-	2.1	2.5	A
DC Input Current	I_{GG}		-	6	12	mA

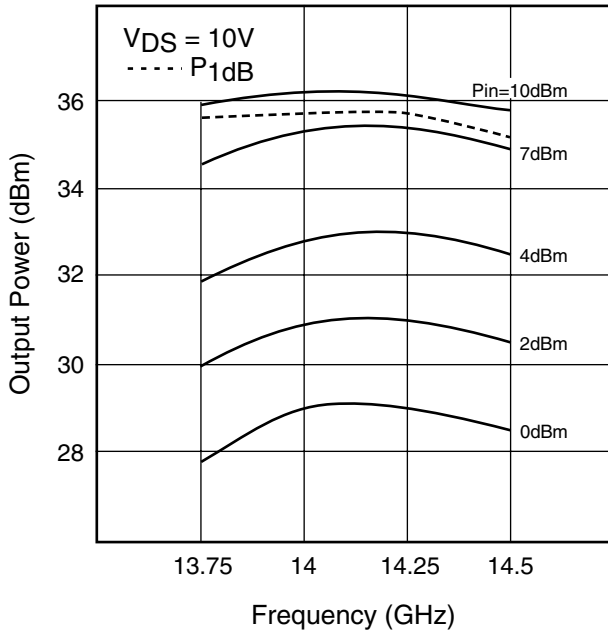
CASE STYLE: GJ

G.C.P.: Gain Compression Point

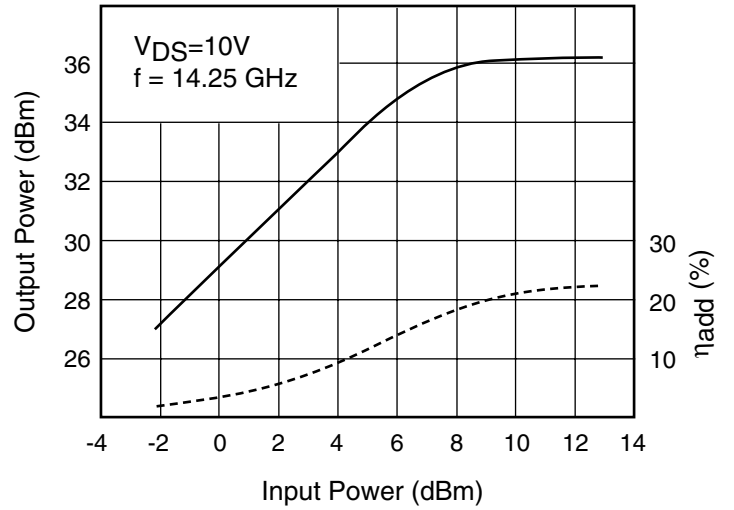
FMM5048GJ

VSAT MMIC

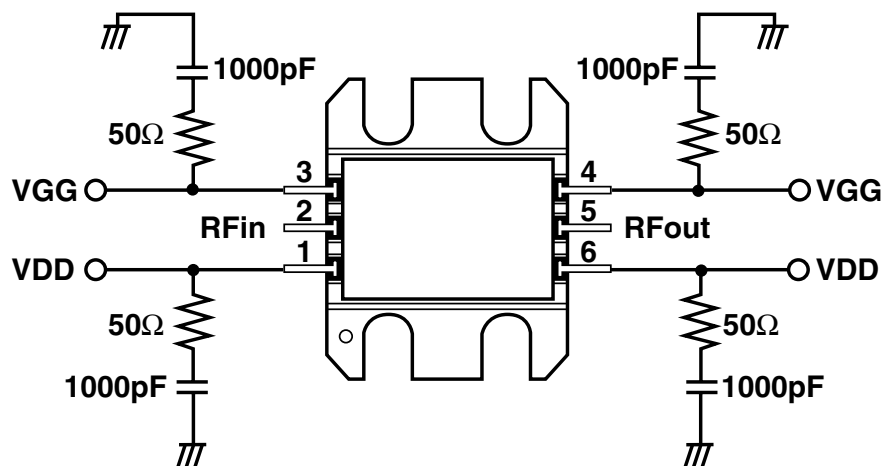
OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER



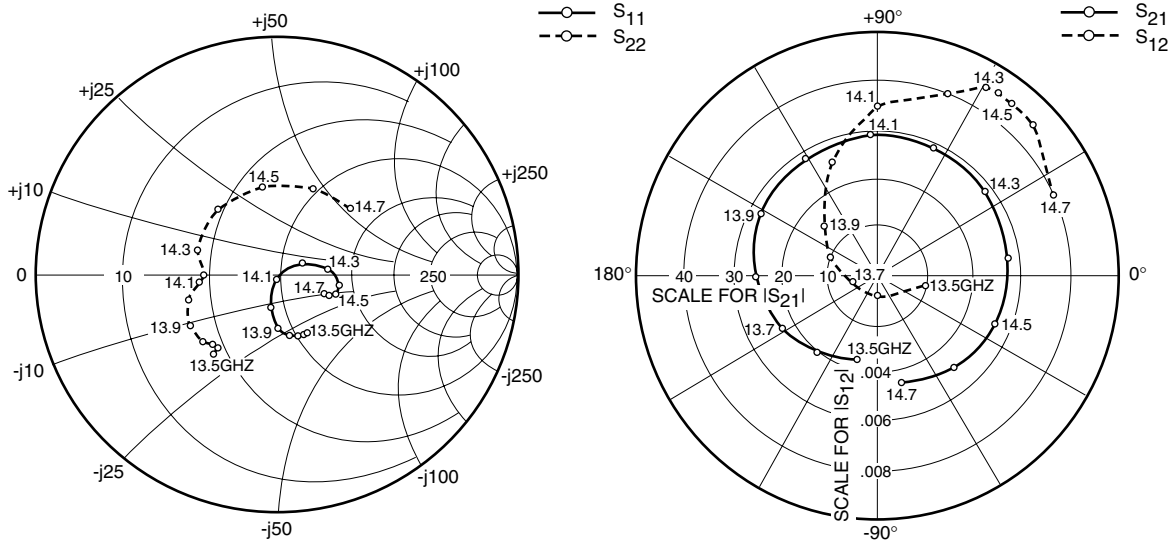
RECOMMENDED BIAS CIRCUIT



Note: The R/C networks are recommended on the bias supply lines, close to the package, to prevent video oscillations which could damage the module.

FMM5048GJ

VSAT MMIC



S-PARAMETERS

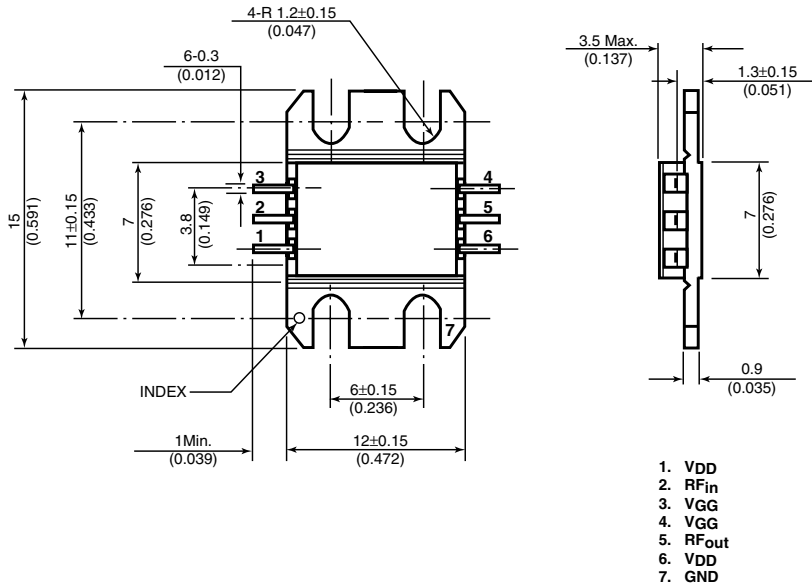
$V_{DD} = 10V, V_{GG} = -5V$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1350	.273	-65.1	18.067	-103.9	.002	-13.5	.421	-128.4
1360	.275	-67.3	20.347	-127.4	.001	-89.7	.400	-129.1
1370	.278	-71.8	22.777	-152.9	.001	-168.0	.402	-131.7
1380	.263	-78.4	25.351	-179.5	.002	160.2	.417	-137.8
1390	.227	-89.5	27.258	152.0	.003	137.4	.421	-148.5
1400	.145	-102.8	28.576	121.9	.005	112.2	.386	-163.4
1410	.022	-97.8	28.940	92.7	.007	90.0	.322	-174.7
1420	.118	24.0	28.940	65.6	.008	68.2	.307	180.0
1430	.214	6.2	28.379	37.7	.009	59.6	.342	163.0
1440	.257	-8.1	27.542	7.4	.009	56.0	.363	132.0
1450	.258	-17.8	26.546	-22.0	.009	51.7	.375	99.4
1460	.244	-21.6	25.003	-50.4	.009	44.1	.389	67.7
1470	.230	-21.4	22.777	-76.9	.008	24.2	.404	42.0

FMM5048GJ

VSAT MMIC

Case Style "GJ" Metal-Ceramic Hermetic Package



Unit: mm(inches)

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