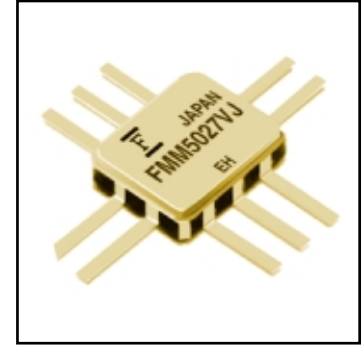


# FMM5027VJ

## MMIC Power Amplifier

### FEATURES

- Wide Frequency Band: 0.8 to 3GHz
- Medium Power: P1dB=26dBm (Typ.)@f=0.8 - 3GHz
- High Linear Gain: GL=19dB (Typ.)@ f=0.8 - 3GHz
- Wide Operating Temperature Range
- Hermetically Sealed Package



### DESCRIPTION

The FMM5027VJ is a MMIC power amplifier that includes three amplifier stages designed for applications in the 0.8 to 3.0GHz frequency range. This product is uniquely suited for use in cellular, PCS/PCN, WLL base station amplifiers as it offers 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 (Ambient Temperature Ta=25°C)

Item	Symbol	Rating	Unit
DC Input Voltage	V <sub>DD1, 2</sub>	10	V
DC Input Voltage	V <sub>GG1, 2</sub>	-8	V
Input Power	P <sub>in</sub>	15	dBm
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C
Operating Case Temperature	T <sub>op</sub>	-40 to +85	°C

### ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25°C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Frequency Range	f		0.8 - 3.0			GHz
Output Power at 1dB G.C.P.	P1dB	V <sub>DD1, 2</sub> = 8V V <sub>GG1, 2</sub> = -3V P <sub>in</sub> = -5dBm	25.0	26.0	-	dBm
Linear Gain	GL		17.0	19.0	-	dB
Gain Flatness	ΔG		-	2.0	3.0	dB
Input VSWR	VSWR <sub>i</sub>		-	2:1	-	-
DC Input Current	I <sub>DD</sub>	V <sub>DD1, 2</sub> = 8V V <sub>GG1, 2</sub> = -3V	-	220	300	mA
DC Input Current	I <sub>GG</sub>		-	2	4	mA

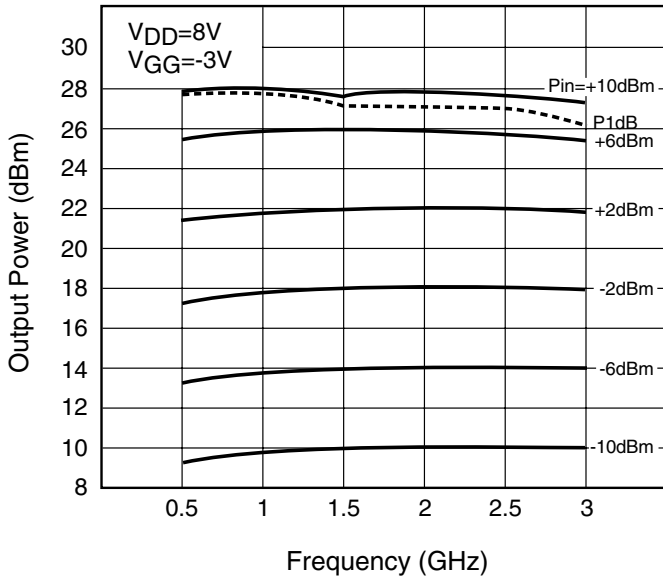
CASE STYLE: VJ

G.C.P.: Gain Compression Point

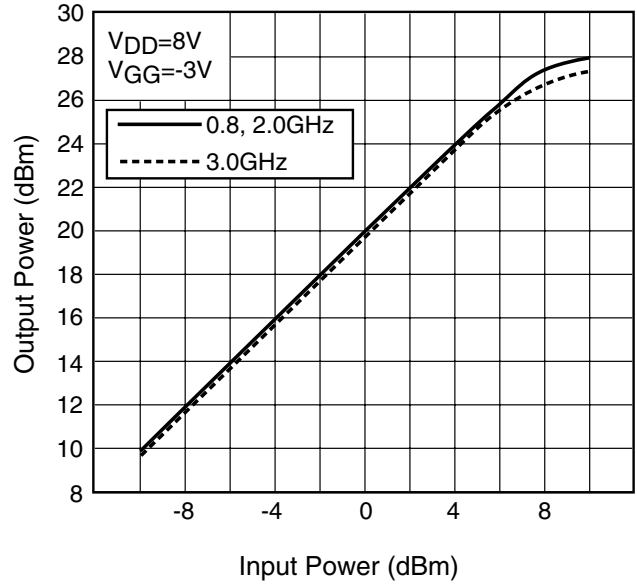
# FMM5027VJ

## MMIC Power Amplifier

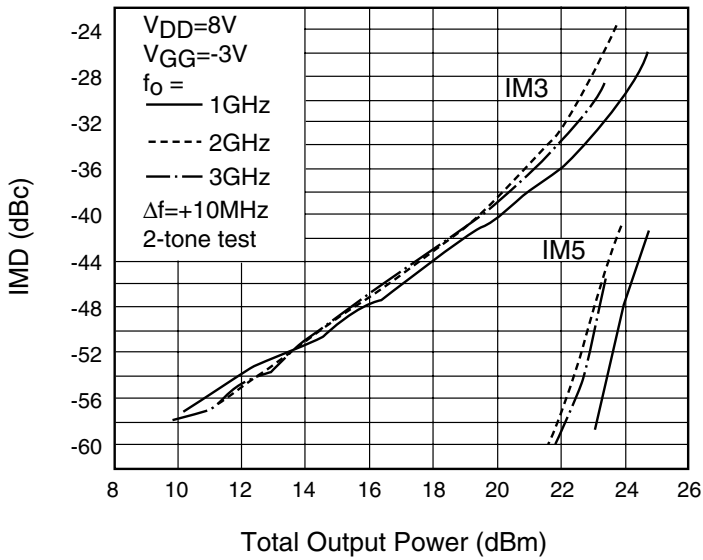
OUTPUT POWER vs. FREQUENCY



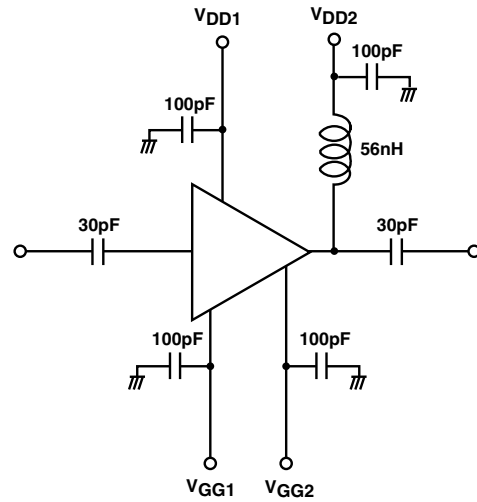
OUTPUT POWER vs. INPUT POWER



OUTPUT POWER vs. IMD

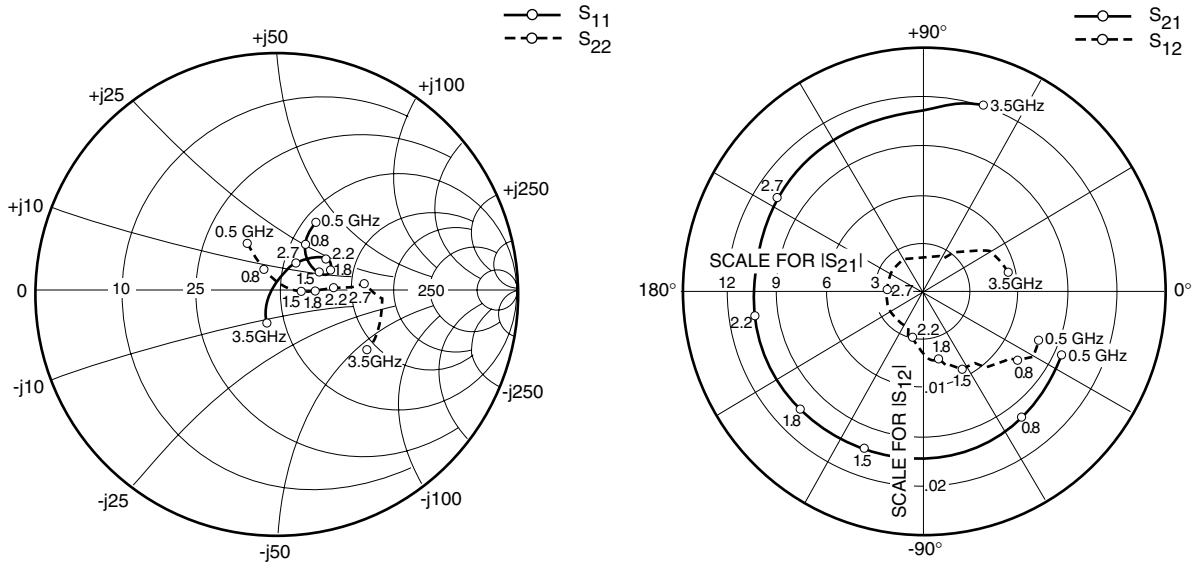


RECOMMENDED TEST CIRCUIT



# FMM5027VJ

## MMIC Power Amplifier



### S-PARAMETERS

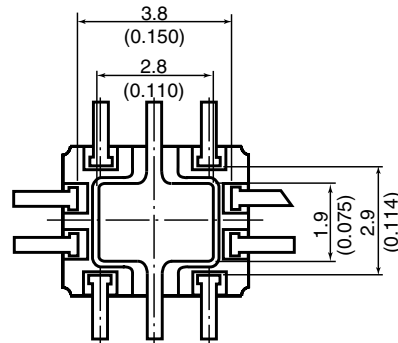
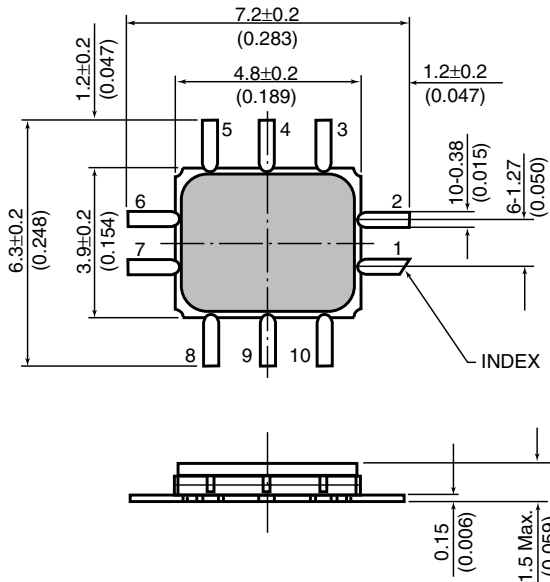
$V_{DS} = 8V, V_{GG} = -3V$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	.148	-103.6	9.376	-24.8	.013	-23.5	.226	122.4
600	.101	-114.3	9.563	-34.3	.013	-28.3	.171	121.0
700	.063	-126.9	9.702	-43.3	.013	-30.9	.131	119.5
800	.032	-161.2	9.857	-52.1	.012	-36.8	.099	117.3
900	.023	116.7	9.932	-61.0	.011	-38.2	.071	113.9
1000	.048	85.6	10.088	-69.5	.011	-40.1	.050	105.8
1100	.078	72.7	10.152	-77.9	.011	-40.4	.032	84.2
1200	.104	61.6	10.211	-86.4	.010	-50.9	.033	41.5
1300	.137	55.7	10.338	-94.7	.009	-55.7	.040	14.4
1400	.164	51.1	10.363	-103.3	.009	-54.4	.055	2.1
1500	.185	46.0	10.435	-111.5	.009	-63.4	.074	-3.2
1600	.208	40.7	10.462	-120.1	.008	-71.1	.099	-4.8
1700	.229	36.2	10.538	-128.5	.008	-72.7	.114	-3.9
1800	.236	32.5	10.578	-137.2	.008	-70.6	.136	-4.5
1900	.242	29.1	10.590	-145.9	.007	-77.6	.162	-2.7
2000	.246	25.2	10.632	-154.5	.007	-85.0	.190	-1.2
2100	.243	23.0	10.620	-163.2	.006	-93.8	.208	0.4
2200	.237	20.8	10.630	-171.8	.005	-106.5	.236	1.4
2300	.229	18.7	10.549	179.3	.005	-109.2	.263	1.7
2400	.204	19.5	10.604	170.9	.004	-114.5	.285	1.9
2500	.195	23.1	10.770	165.0	.004	-131.2	.320	2.8
2600	.188	26.9	10.787	156.4	.004	-147.2	.344	4.2
2700	.178	31.3	10.788	147.8	.004	178.5	.362	4.2
2800	.171	36.2	10.709	138.3	.004	157.2	.374	1.4
2900	.179	43.6	10.693	129.1	.004	144.7	.398	-1.1
3000	.186	51.1	11.044	118.9	.004	122.5	.432	-4.7
3100	.201	55.1	11.137	111.0	.004	66.5	.433	-6.2
3200	.244	56.5	11.133	101.6	.004	59.3	.440	-10.2
3300	.261	59.2	11.222	91.1	.005	52.6	.445	-16.5
3400	.295	59.7	11.881	81.4	.008	31.8	.454	-23.4
3500	.324	60.0	12.079	72.4	.009	12.2	.447	-34.1

# FMM5027VJ

## MMIC Power Amplifier

### Case Style VJ



#### LEAD ASSIGNMENT

Lead	Symbol	Lead	Symbol
1.	RF in	6.	RF out/VDD2
2.	NC	7.	NC
3.	VGG1	8.	VDD1
4.	GND	9.	GND
5.	VGG2	10.	NC

Unit: mm(inches)

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- 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.

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