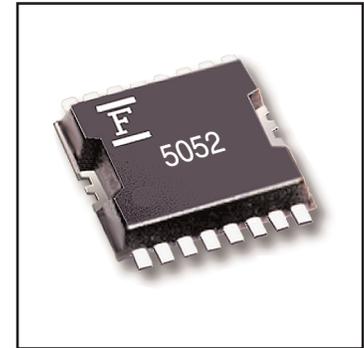


# FMM5052ZE

## MMIC Power Amplifier

### FEATURES

- Wide Frequency Band: 0.8 to 2.7GHz
- Medium Power: P<sub>1dB</sub>=26dBm (Typ.) @ f=0.8 - 2.7GHz
- High Linear Gain: G<sub>L</sub>=19dB (Typ.) @ f=0.8 - 2.7GHz
- Impedance Matched Z<sub>in</sub>/Z<sub>out</sub> = 50Ω
- Wide Operating Temperature Range
- Small Size: SSOP-16 Plastic Package for SMT Applications



### DESCRIPTION

The FMM5052ZE is a MMIC power amplifier that includes a three-stage amplifier, internally matched, for broadband applications in the 0.8 to 2.7GHz frequency range. This product is uniquely suited for use in cellular, W-CDMA/PCS, MMDS, and 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 (Case Temperature T<sub>c</sub>=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 +125	°C
Operating Case Temperature	T <sub>op</sub>	-40 to +85	°C

### RECOMMENDED OPERATING CONDITIONS (Case Temperature T<sub>c</sub>=25°C)

Item	Symbol	Limit	Unit
DC Input Voltage	V <sub>DD</sub>	≤8	V
Gate Current	V <sub>GG</sub>	≤-3	V

### ELECTRICAL CHARACTERISTICS (Case Temperature T<sub>c</sub>=25°C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Frequency Range	f		0.8 - 2.7			GHz
Output Power at 1dB G.C.P.	P <sub>1dB</sub>	V <sub>DD1,2</sub> =8V, V <sub>GG1,2</sub> =-3V, P <sub>in</sub> =-5dBm	25.0	26.0	-	dBm
Linear Gain	G <sub>L</sub>		17.0	19.0	-	dB
Gain Flatness	ΔG		-	±1.0	±1.5	dB
Input Return Loss	RL <sub>in</sub>		-	-12	-	dB
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>		-4.0	-2.0	-	mA

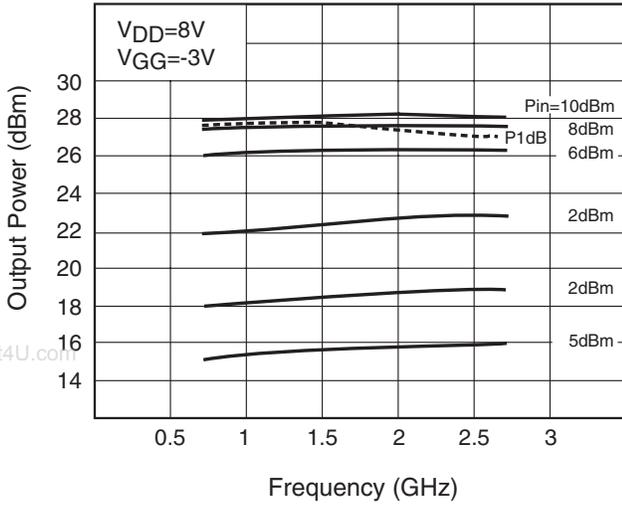
CASE STYLE: ZE

G.C.P.: Gain Compression Point

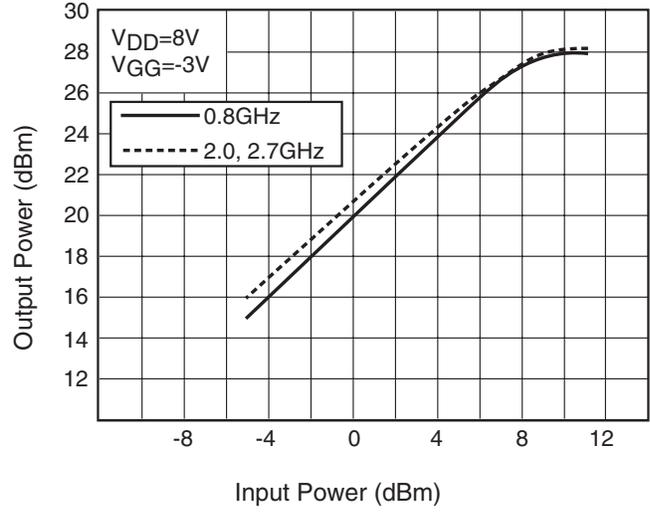
# FMM5052ZE

## MMIC Power Amplifier

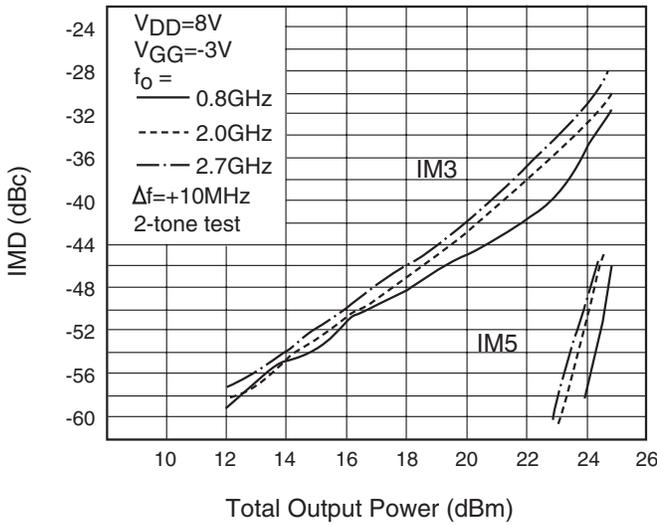
OUTPUT POWER vs. FREQUENCY



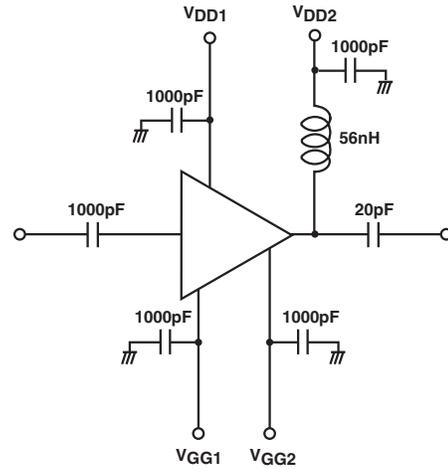
OUTPUT POWER vs. INPUT POWER



OUTPUT POWER vs. IMD



RECOMMENDED TEST CIRCUIT



# FMM5052ZE

## MMIC Power Amplifier

### S-PARAMETERS

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

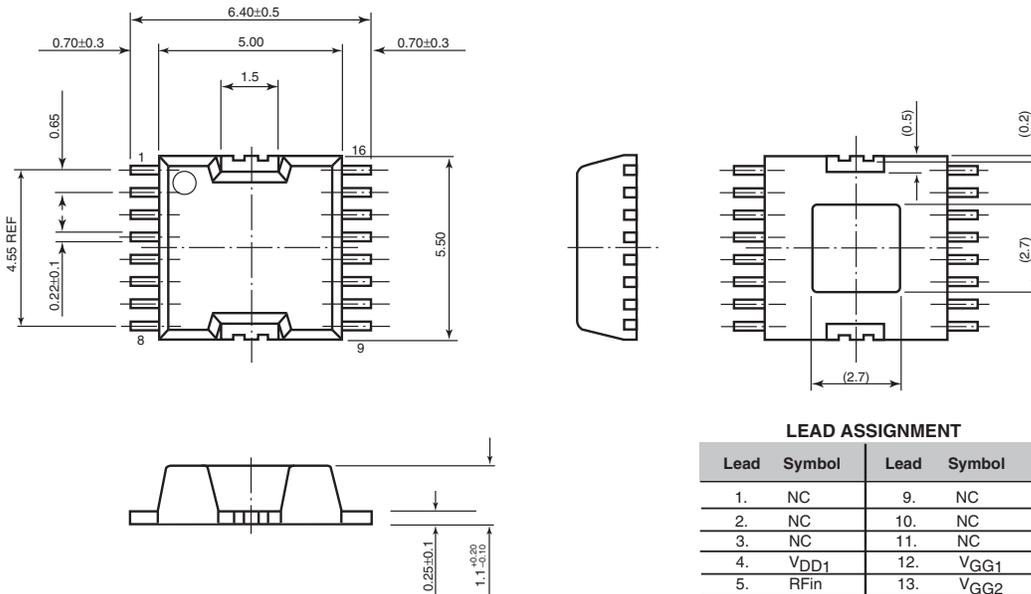
FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	0.085	-83.4	9.543	-16.7	0.014	-14.9	0.269	114.8
600	0.035	-75.6	9.710	-25.6	0.014	-16.8	0.221	112.5
700	0.016	22.1	9.848	-33.8	0.013	-22.9	0.180	111.2
800	0.047	54.4	9.940	-41.8	0.013	-24.0	0.149	110.7
900	0.078	56.0	10.063	-49.6	0.013	-29.2	0.123	111.2
1000	0.107	55.3	10.138	-57.0	0.012	-29.4	0.104	112.7
1100	0.132	51.9	10.245	-64.6	0.012	-32.8	0.084	114.2
1200	0.156	48.4	10.328	-72.0	0.012	-35.5	0.071	113.8
1300	0.174	44.6	10.421	-79.7	0.011	-37.7	0.057	117.5
1400	0.191	40.3	10.497	-87.3	0.012	-41.6	0.047	116.0
1500	0.204	36.0	10.604	-94.9	0.011	-56.2	0.040	115.4
1600	0.219	31.8	10.721	-102.7	0.011	-52.0	0.030	111.4
1700	0.225	27.2	10.821	-110.9	0.010	-61.3	0.029	102.6
1800	0.228	22.7	10.883	-119.0	0.010	-65.1	0.031	85.6
1900	0.226	19.6	10.957	-127.6	0.009	-66.5	0.040	69.4
2000	0.220	16.9	11.049	-136.2	0.009	-79.4	0.061	50.0
2100	0.206	15.6	11.062	-145.6	0.007	-91.3	0.092	29.5
2200	0.206	17.8	10.939	-154.0	0.006	-87.9	0.108	17.5
2300	0.198	17.7	10.977	-162.9	0.007	-102.4	0.129	14.0
2400	0.184	18.5	11.100	-172.4	0.006	-124.6	0.167	9.6
2500	0.169	25.8	11.073	178.6	0.004	-125.3	0.204	6.4
2600	0.161	38.1	10.992	168.0	0.004	-145.4	0.249	0.1
2700	0.184	53.0	10.737	156.8	0.007	-169.0	0.290	-5.5
2800	0.226	63.3	10.615	145.6	0.009	174.6	0.330	-11.4
2900	0.300	64.7	10.089	134.2	0.007	149.2	0.359	-18.3
3000	0.352	67.5	9.953	120.2	0.007	157.1	0.396	-22.7
3100	0.446	67.5	9.239	108.4	0.007	136.2	0.428	-28.5
3200	0.555	64.5	8.539	90.7	0.009	126.4	0.460	-35.3
3300	0.648	57.6	6.986	78.0	0.011	126.4	0.456	-46.5
3400	0.747	50.7	6.272	65.4	0.012	112.2	0.413	-43.3
3500	0.808	42.6	5.057	53.1	0.013	97.1	0.442	-48.4

www.DataSheet4U.com

# FMM5052ZE

## MMIC Power Amplifier

Case Style "ZE"



LEAD ASSIGNMENT

Lead	Symbol	Lead	Symbol
1.	NC	9.	NC
2.	NC	10.	NC
3.	NC	11.	NC
4.	VDD1	12.	VGG1
5.	RFin	13.	VGG2
6.	NC	14.	RF <sub>out</sub> /VDD2
7.	NC	15.	NC
8.	NC	16.	NC

Unit: mm  
Note:

1. The dimensions in parenthesis do not include resin burrs.
2. Unless otherwise specified, the dimensional tolerance should be  $\pm 0.15$ mm.

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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 this product 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.

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