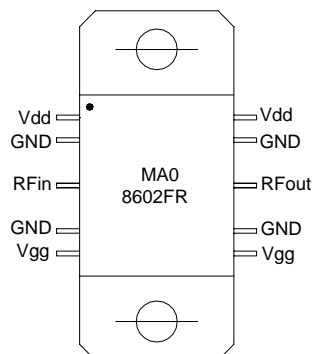


# M/A-COM 1W Power Amplifier (14 - 14.5 GHz)

MA08602FR

## FEATURES

- 35.5 dB Typical Small Signal Gain
- 50  $\Omega$  Input/Output Impedance
- 40 dBm Third Order Intercept Point
- Flange mount package designed for optimum electrical and thermal performance at Ku-band.
- Broadband design centered on Ku-band VSAT.
- Consistent Output Power and Gain makes fixed bias possible.



FR Package Pin Configuration

## DESCRIPTION

The MA08602FR is a five stage MMIC power amplifier fabricated on M/A-COM's Self-Aligned MSAG<sup>®</sup> MESFET Process. This product is fully matched to 50 ohms on both the input and the output and can be used as either a driver or an output stage amplifier. Although the broadband design can be used for many applications, it is ideally suited for Ku-band VSAT.

## MAXIMUM RATINGS (T<sub>A</sub> = -40°C to +70°C unless otherwise noted)

Rating	Symbol	Value	Unit
DC Drain Supply Voltage	V <sub>DD</sub>	9V	Vdc
DC Gate Supply Voltage	V <sub>GG</sub>	-3V	Vdc
RF Input Power	P <sub>IN</sub>	4	dBm
Junction Temperature	T <sub>J</sub>	+150	°C
Storage Temperature	T <sub>STG</sub>	-50 to +100	°C

## ELECTRICAL CHARACTERISTICS V<sub>DD</sub>=8.0 V, I<sub>DQ</sub>=550 mA, P<sub>IN</sub>=-1 dBm, T<sub>A</sub>=-40°C to +70°C

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency	<i>f</i>	14	—	14.5	GHz
Output Power, saturated	P <sub>SAT</sub>	30	30.5	33	dBm
Gain, saturated	G <sub>SAT</sub>	31	31.5	34	dB
Gain Flatness over band, saturated		—	+/- 0.5	+/- 1.0	dB
Input Power (P <sub>OUT</sub> = 30 dBm)	P <sub>INJ</sub>	—	-4	-1	dBm
Drain Current (P <sub>OUT</sub> = 31 dBm)	I <sub>DS</sub>	—	605	700	mA
Gate Bias Voltage (I <sub>DQ</sub> =550 mA)	V <sub>GG</sub>	-2.5	-1.8	-1	V
Gate Current (V <sub>DD</sub> =8.0V, I <sub>DQ</sub> =550mA, P <sub>IN</sub> =-1dBm, V <sub>DG</sub> <10.5V)	I <sub>GG</sub>	—	1	20	mA
Input VSWR		—	2:1	3:1	
Harmonics	2 <i>f</i> <sub>o</sub>	—	-25	—	dBc
Noise Figure	NF	—	7	10	dB
Third-Order Intercept Point (V <sub>DD</sub> =8.0 V, I <sub>DQ</sub> =550 mA, P <sub>IN</sub> =-1 dBm)	IP3	—	40	—	dBm
Thermal Resistance (Junction of 3 <sup>rd</sup> stage FET to flange)	R <sub>TH</sub>	—	29	—	°C/W
Small Signal Gain (Pin = -20 dBm)	S21	30.5	—	42	dB

NOTE: All typical values are at room temperature (25°C)

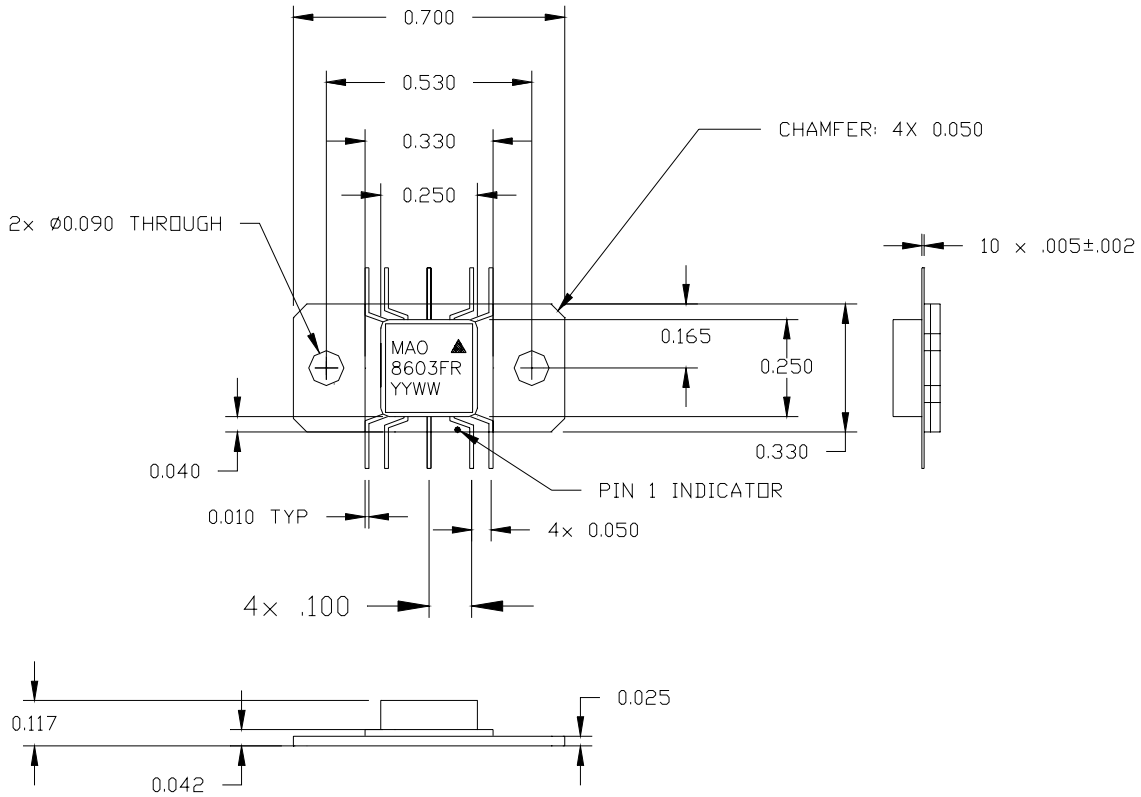
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