MA1046-1

For 1.9 GHz - Power Amplifier

DESCRIPTION

The MA1046-1 is a 1.9 GHz band power amplifier (Po = +3.1W), constructed by 3 stages of GaAs MESFET, RF matching circuit, and DC bias circuit. The shield cap is made of metal. Input and Output impedances are designed to 50Ω.

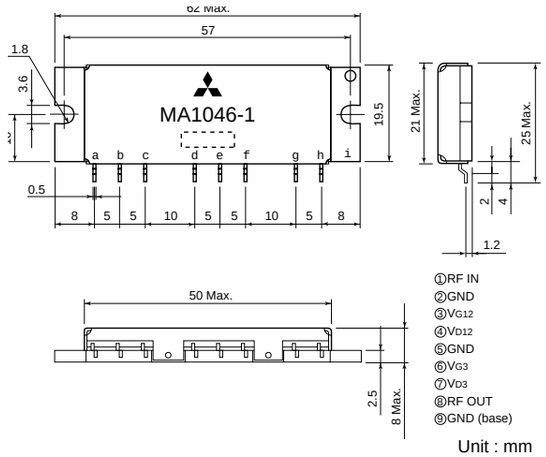
FEATURES

Po = +35.0 dBm, Gain = +32 dB (min.) @1.9 GHz
Vd1, 2 = +6.0V, Vd3 = +10.0V
Vg1, 2 = –5.0V, Vg3 = 3.0V

APPLICATION

Power amplifier for PHS base station/Japan.

OUTLINE DRAWING



Unit : mm

Note: 1. Dimension of leads: 0.25 × 0.5
2. Tolerance of dimension of leads interval: ±0.3
3. Tolerance of dimension except indications: ±0.3
4. Surface Leads: Tin Plating (Iron)
(Material)

Amplifier Specifications (MA1046-1)

1. Maximum Ratings (Ta=25°C)

No.	Items	Symbol	Condition	Standard	Unit
1	Case temperature	Tc		–20 ~ +70	°C
2	Storage temperature	Tstg		–40 ~ +95	°C
3	Voltage	V_D12, V_D 3	V_G 12 = –5.0 V, V_G 3 = –3.0 V	V_D 12 = 7.0 V, V_D 3 = 11.0 V	V
4	Gate Voltage	V_G 12, V_G 3	V_D 12 = 6.0 V, V_D 3 = 10.0 V	V_G 12 = –8.0 V, V_G = –8.0 V	V
5	Input Power	P_{in}		+10 dBm	dBm

2. Electrical Performances (Tc = +25°C, VD 1, 2 = 6V, VD3 = 10V, VG 1, 2 = –5V, VG 3 = –3V, Zg = Zl = 50Ω)

No.	Items		Symbol	Condition	Standard Min	Standard Type	Standard Max	Unit
1	Frequency		f		1895	– – –	1918	MHz
2	Power Gain		G	Po = +35 dBm π / 4 Shift QPSK Modulation –PN9	33	– – –	– – –	dB
3	Temperature Characteristics (Power Gain)				– – –	– – –	±2	dB
4	Gain Variation		Δ G		– – –	– – –	±0.5	dB
5	Drain Current		I_D 12		– – –	– – –	400	mA
			I_D 3		– – –	– – –	1400	mA
6	Gate Current		I_G 12		– – –	– – –	2	mA
			I_G 3		– – –	– – –	5	mA
7	ACP	Δ 600 kHz	ACP1		– – –	– – –	–65	dBc
		Δ 900 kHz	ACP2		– – –	– – –	–70	dBc
8	Occupied Band Width		– – –		– – –	– – –	288	KHz
9	Input VSWR		ρ in	Po = +35 dBm Non-modulation	– – –	– – –	2.0	– – –
10	Spurious	In Band	– – –		– – –	– – –	–70	dBc
		Out Band	– – –	f ≦ 6 GHz	– – –	– – –	–60	dBc
		2 nd	2 SP		– – –	– – –	–30	dBc
		3 rd	3 SP		– – –	– – –	–45	dBc
11	Stability against load variation		– – –	Po = +35 dBm Load VSWR = 1:3 All Phase	There is no abnormal oscillating signal more than –60 dBc			
12	Intensity against load variation		– – –	Po = +35 dBm Zl = OPEN, SHORT 10 seconds each	There is no damage			

MA1046-1 P_{in} – P_{out}. ACP.