



MA1046-1

For 1.9 GHz - Power Amplifier

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DESCRIPTION

The MA1046-1 is a 1.9 GHz band power amplifier ($P_o = +3.1\text{W}$), 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 .

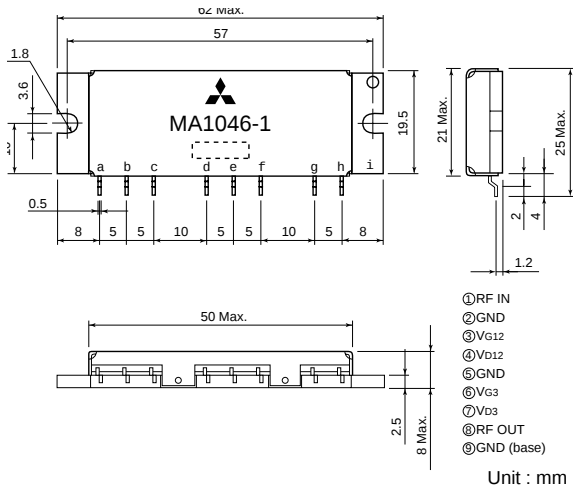
FEATURES

$P_o = +35.0\text{ dBm}$, Gain = +32 dB (min.) @1.9 GHz
 $V_{d1, 2} = +6.0\text{V}$, $V_{d3} = +10.0\text{V}$
 $V_{g1, 2} = -5.0\text{V}$, $V_{g3} = 3.0\text{V}$

APPLICATION

Power amplifier for PHS base station/Japan.

OUTLINE DRAWING



- 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)

2. Electrical Performances ($T_c = +25^\circ\text{C}$, $V_{D1, 2} = 6\text{V}$, $V_{D3} = 10\text{V}$, $V_{G1, 2} = -5\text{V}$, $V_{G3} = 3\text{V}$, $Z_g = Z_l = 50\Omega$)

No.	Items	Symbol	Condition	Standard			Unit
				Min	Type	Max	
1	Frequency	f		1895	---	1918	MHz
2	Power Gain	G	$P_o = +35\text{ dBm}$ $\pi / 4$ Shift QPSK Modulation -PN9	33	---	---	dB
3	Temperature Characteristics (Power Gain)			---	---	± 2	dB
4	Gain Variation	ΔG		---	---	± 0.5	dB
5	Drain Current	I_{D12}	$P_o = +35\text{ dBm}$ Non-modulation $f \leq 6\text{ GHz}$	---	---	400	mA
		I_{D3}		---	---	1400	mA
6	Gate Current	I_{G12}		---	---	2	mA
		I_{G3}		---	---	5	mA
7	ACP	$\Delta 600\text{ kHz}$		---	---	-65	dBc
		$\Delta 900\text{ kHz}$		---	---	-70	dBc
8	Occupied Band Width	---		---	---	288	KHz
9	Input VSWR	ρ_{in}		---	---	2.0	---
10	Spurious	In Band		---	---	-70	dBc
		Out Band		---	---	-60	dBc
		2 nd		---	---	-30	dBc
		3 rd		---	---	-45	dBc
11	Stability against load variation	---	$P_o = +35\text{ dBm}$ Load VSWR = 1:3 All Phase	There is no abnormal oscillating signal more than -60 dBc			
12	Intensity against load variation	---	$P_o = +35\text{ dBm}$ $Z_l = \text{OPEN, SHORT}$ 10 seconds each	There is no damage			

Amplifier Specifications (MA1046-1)

1. Maximum Ratings ($T_a = 25^\circ\text{C}$)

No.	Items	Symbol	Condition	Standard	Unit
1	Case temperature	T_c		$-20 \sim +70$	$^\circ\text{C}$
2	Storage temperature	T_{stg}		$-40 \sim +95$	$^\circ\text{C}$
3	Voltage	V_{D12}, V_{D3}	$V_{G12} = -5.0\text{ V}$, $V_{G3} = -3.0\text{ V}$	$V_{D12} = 7.0\text{ V}$, $V_{D3} = 11.0\text{ V}$	V
4	Gate Voltage	V_{G12}, V_{G3}	$V_{D12} = 6.0\text{ V}$, $V_{D3} = 10.0\text{ V}$	$V_{G12} = -8.0\text{ V}$, $V_{G3} = -8.0\text{ V}$	V
5	Input Power	P_{in}		+10 dBm	dBm

MA1046-1 $P_{in} - P_{out}$, ACP.

