



# MA1046-1

For 1.9 GHz - Power Amplifier

MA1046-1

## DESCRIPTION

The MA1046-1 is a 1.9 GHz band power amplifier ( $P_o = +3.1W$ ), 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  $50\Omega$ .

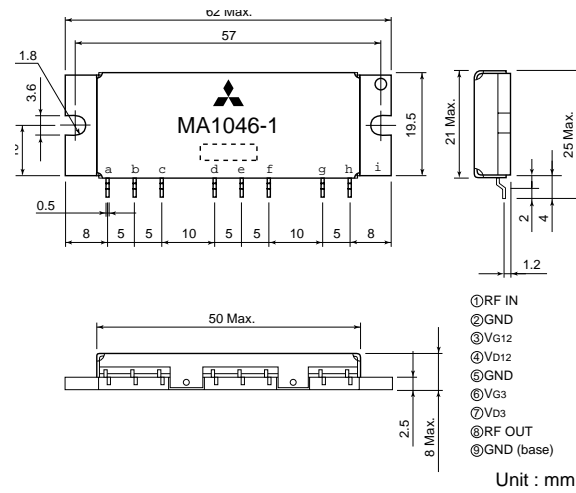
## FEATURES

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

## APPLICATION

Power amplifier for PHS base station/Japan.

## OUTLINE DRAWING



- Note: 1. Dimension of leads:  $0.25 \times 0.5$   
 2. Tolerance of dimension of leads interval:  $\pm 0.3$   
 3. Tolerance of dimension except indications:  $\pm 0.3$   
 4. Surface Leads: Tin Plating (Iron) (Material)

## Amplifier Specifications (MA1046-1)

### 1. Maximum Ratings ( $T_a = 25^\circ C$ )

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

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

No.	Items	Symbol	Condition	Standard			Unit
				Min	Type	Max	
1	Frequency	f		1895	---	1918	MHz
2	Power Gain	G	$P_o = +35$ dBm $\pi / 4$ Shift QPSK Modulation -PN9	33	---	---	dB
3	Temperature Characteristics (Power Gain)			---	---	$\pm 2$	dB
4	Gain Variation	$\Delta G$		---	---	$\pm 0.5$	dB
5	Drain Current	$I_{D12}$		---	---	400	mA
		$I_{D3}$		---	---	1400	mA
6	Gate Current	$I_{G12}$		---	---	2	mA
		$I_{G3}$		---	---	5	mA
7	ACP	$\Delta 600$ kHz	ACP1	---	---	-65	dBc
		$\Delta 900$ kHz	ACP2	---	---	-70	dBc
8	Occupied Band Width	---		---	---	288	KHz
9	Input VSWR	$\rho_{in}$	$P_o = +35$ dBm Non-modulation $f \leq 6$ GHz	---	---	2.0	---
10	Spurious	In Band		---	---	-70	dBc
		Out Band		---	---	-60	dBc
		2 nd		2 SP	---	---	-30
	3 rd	3 SP	---	---	-45	dBc	
11	Stability against load variation	---	$P_o = +35$ dBm Load VSWR = 1:3 All Phase	---	---	---	There is no abnormal oscillating signal more than -60 dBc
12	Intensity against load variation	---	$P_o = +35$ dBm $Z_l = OPEN, SHORT$ 10 seconds each	---	---	---	There is no damage

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

