MA1065-1

For 1.9 GHz - High Power Amplifier

DESCRIPTION

The MA1065-1 are 1.9 GHz band power amplifier modules (Po = +4.0W), constructed by driver-amp, highpower-amp, power-monitor and control-circuit. Input and Output impedances are designed to 50Ω.

FEATURES

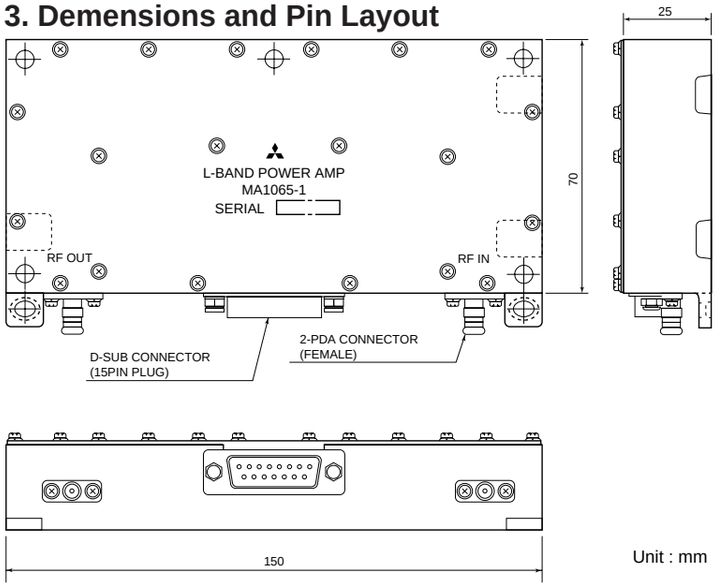
MA1065-1 : Po = +22.4 ~ 36.4 dBm (8 step, Pin = –9.0 dBm) @1.9 GHz
Vs = +12.0V, Vg = –7.0V,
Vcont = +5.0V

APPLICATION

Power amplifier module for PHS base station/Japan.

OUTLINE DRAWING

3. Demensions and Pin Layout



Unit : mm

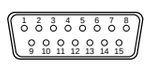
2-1 Noise from Primary Power Supply
+12V: 200 mVp-pmax
–10V: 100mVp-pmax

2-2 D-sub Connector pin assign

1	Vs	+12V Power Supply
2	Vs	+12V Power Supply
3	GND	Analog GND
4	Vg	–10V Power Supply
5	GND	Analog GND
6	GND	Digital GND
7	N/C	N/C
8	N/C	N/C
9	Vs	+12V Power Supply
10	GND	Analog GND
11	GND	Analog GND
12	GND	ANalog GND for Vp
13	Vp	RF monitor for ALC
14	N/C	N/C
15	TXE	Transmission ON/OFF Control (PA Control)

2-3 PA Control

PA	TXE
OFF	0
ON	1



Outside View

Amplifier Specifications (MA1065-1)

1. Maximum Ratings

No.	Items		Symbol	Standard	Condition
1	Voltage	+12 V	Vs	+16 V	Ta = +25°C
		–10 V	Vg	– 12.5V	Ta = +25°C
2	Input RF Power		P_{in}	+5 dBm	Ta = +25°C, f = 1895 ~ 1918 MHz
3	Operating Temperature		Top	–20 ~ +80°C	Base Plate Temperature
4	Storage Temperature		Tstg	–40 ~ +90°C	
5	Humidity		Rh	+50°C, 95% R.H	

2. Electrical Performances

No.	Items	Condition	Standard Min	Standard Typ	Standard Max	Unit
1	Frequency		1895	– – –	1918	MHz
2	Output Power	f = 1895, 1906, 1918 MHz Pin = –9.0 dBm	35.9	36.4	36.9	dBm
	Ripple		– – –	– – –	0.6	dBp-p
	Temperature drift		– – –	– – –	±2.0	dB
3	ACP	f = 1895, 1906, 1918 MHz Pout = 36.4 dBm π / 4 Shift QPSK Modulation	– – –	– – –	– – –	
	600 kHz deviation		– – –	– – –	–69.0	dBc
	900 kHz deviation		– – –	– – –	–74.0	dBc
4	Input/Output VSWR	f = 1895, 1906, 1918 MHz Pin ≦ –9.0 dBm	– – –	– – –	1 : 1.5	
	Load VSWR		With Load VSWR of less than 1:2.0 There is no abnormal Oscillation with Load VSWR of more than 1:2.0			
5	Spurious		– – –	– – –	– – –	
	In-band	f = 1895 ~ 1918 MHz Pout = 36.4 dBm	– – –	– – –	–75.0	dBc
	Out of band	f = 100 kHz ~ 6 GHz (Except In-band) Pout = 36.4 dBm	– – –	– – –	–65.0	dBc
6	Drain Current +12V (1) Transmission (2) Non Transmission	f = 1906 MHz π / 4 Shift QPSK Modulation Pout = 36.4 dBm	– – –	– – –	3.3 A max 200 mA	
7	Carrier-off leak power	Pin = –75 dBm	– – –	– – –	–70.0	dBm/200kHz
8	Burst Transmission Response		– – –	– – –	2.6	µS
9	Output Power Monitor	Pout = 39.4 dBm f = 1895, 1906, 1918 MHz Without modulation	– – –	– – –	– – –	
	Output Voltage		2.0	– – –	3.0	V
	Slope		– – –	400	– – –	mV/dB
	Frequency and Temperature drift		– – –	– – –	1.0	dBp-p
	Output Voltage under Burst off time		– – –	– – –	0.5	V