AM07511037UM-3H
January 2014
Rev1

Power Amplifier Module
7.5 - 11.0GHz, 25dB, 5W

DESCRIPTION

AMCOM's AM07511037UM-3H is a broadband GaAs power module. It has 25dB small signal gain, and 37dBm output power over the 7.5 to 11.0GHz band at 5V bias. Because of high DC power dissipation, we strongly recommend to mount the module on a heat sink. It is capable of working at 8V DC bias voltage under pulsed condition. Otherwise, we recommend operating the module at +5V DC bias to provide some thermal margin.

FEATURES

- Wide bandwidth from 7.5 to 11.0GHz
- 37dBm of saturated output power
- High gain, 25dB
- Input /Output matched to 50 Ohms

APPLICATIONS

- Commercial telecom transmission equipment
- Fixed microwave backhaul
- Commercial 2-way radio

TYPICAL PERFORMANCE * ($V_{ds1,2,3}$ = +5V , I_{ds1} + I_{ds2} = 0.7A , I_{ds3} = 1.3A , $V_{gs1,2}$ = -0.98V, V_{gs3} = -0.98V**)

Parameters	Minimum	Typical **	Maximum
Frequency	8.0 – 10.5GHz	7.5 – 11.0GHz	
Small Signal Gain	20dB	25dB	30dB
Gain Ripple		± 2dB	± 3.0dB
P_{1dB} ***	-	33dBm	
P_{3dB} ***	36dBm	37dBm	
Efficiency @ P_{3dB}		30%	
Noise Figure		-	10dB
IP3 @ 10GHz		-	
Input Return Loss		10dB	
Output Return Loss		5dB	
Thermal Resistance		3.5°C/W	

* Specifications subject to change without notice.

** Current may change from lot to lot. Adjust $V_{gs1,2}$ to reach $I_{dsq1,2}$ = 0.7A, V_{gs1} to reach I_{dsq3}=1.3A.

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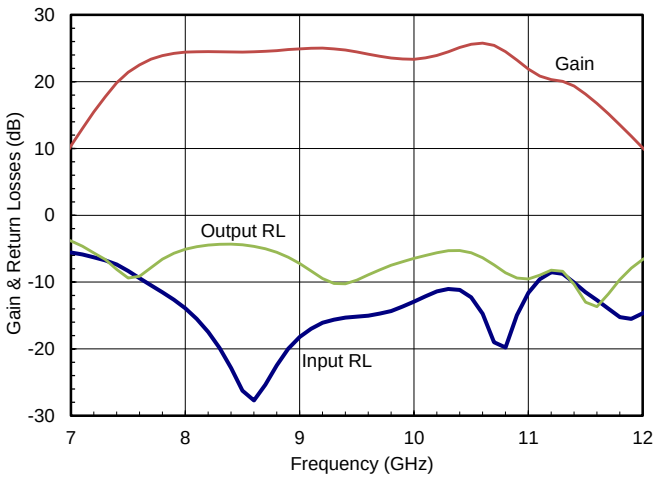
ABSOLUTE MAXIMUM RATING

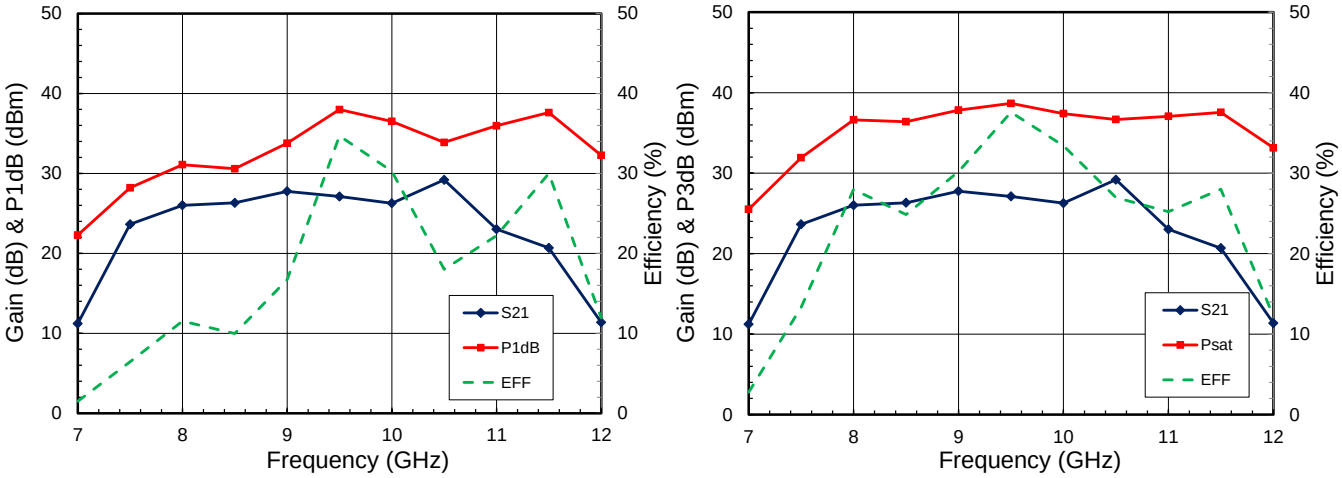
Parameters	Symbol	Rating
Drain source voltage	$V_{ds1,2}$, V_{ds3}	7V
Gate source voltage	V_{gg}	-3V
Drain source current	$I_{dsq1,2}$	1.0A
Drain source current	I_{dsq3}	3.0A
Continuous dissipation at 25ºC	P_t	20W
Channel temperature	T_{ch}	175°C
Operating temperature	T_{op}	-40°C to +85°C
Storage temperature	T_{sto}	-55°C to +135°C

SMALL SIGNAL DATA*



* Module could be operated from 4V to 6V without noticeable change in small signal performance. Data shown is for +5V.

POWER DATA ($V_{ds1,2,3}$ = +5V , I_{ds1} + I_{ds2} = 0.7A , I_{ds3} = 1.3A)



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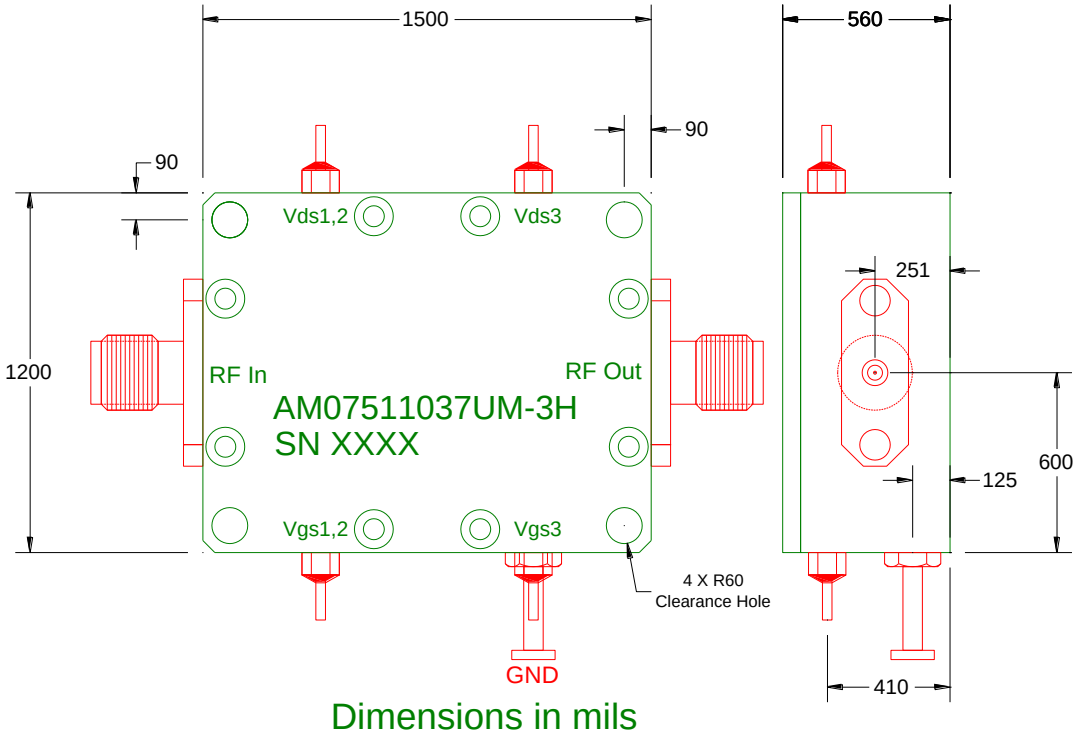
PACKAGE OUTLINE



Dimensions in mils

Pin Layout

Pin No.	Function	Bias
1	Vgs1,2	-0.98V
2	NC	-
3	Vgs3	-0.98V
4	Vds3	+5V
5	NC	-
6	Vds1,2	+5V

Important Notes:

1- Recommended current biases are 0.7A for the first stage and second stages. Current for third stage is 1.3A. Gate biases of -0.98V for $V_{gs1,2}$ and -0.98V for V_{gs3} are for reference only and should be adjusted to get the recommended currents.

2- Do not apply V_{ds1} &, V_{ds2} & V_{ds3} without proper negative voltages.

3- Use heat sink under module to dissipate heat.