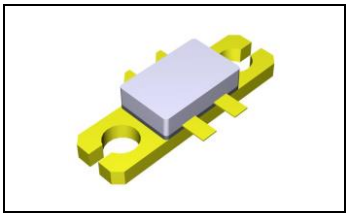
0.5-2.5GHz, 15W, 28V GaN Fully matched PA Module



Description

The YMAH0525-15G4E is a 15-watt ,single stage integrated Power Amplifier Module, designed for broad band applications, with frequencies from 500MHz to 2.5GHz. The module is 50 Ω input matched and requires minimal external components at output.

YMAH0525-15G4 VGS=-2.7V VDS=28V IDQ=120mA CW								
Freq (MHz)	**Pout (dBm)**	**Pout (W)**	**IDS (A)**	**Pin (dBm)**	**Gain (dB)**	**Eff (%)**	**2nd (dBc)**	**3rd (dBc)**
100	41.06	12.76	0.55	34.99	6.07	82.89	-12.6	-11.5
500	41.78	15.07	0.91	35.29	6.49	59.13	-12.6	-10.8
1000	43.80	24.00	1.69	36.78	7.02	50.69	-11.7	-16.0
1500	45.14	32.66	2.11	36.93	8.21	55.28	-25.2	-34.0
2000	45.10	32.36	1.76	37.34	7.76	65.66	-31.8	-53.0
2500	41.80	15.10	1.47	35.47	6.13	35.12	-39.6	-38.7
2700	42.54	17.95	1.68	36.30	6.24	38.15	-42.9	-27.8

Recommended driver： IMEH0030-6

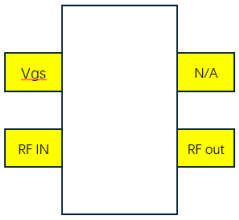
Product Features

- Operating Frequency Range: 500M-2.5GHz
- Operating Drain Voltage: +28 V
- 50 Ω Input
- Psat: ⩾15W(CW)
- Small signal gain:>11dB, Power gain:>6dB
- Efficiency:>35%

Applications

- Ultra Broadband Amplifiers
- VHF, UHF, L band pulsed power Amplifier
- Test Instrumentation
- EMC Amplifier Drivers
- 2-way Radios

Pin Configuration and Description



Top View

Table 1. Maximum Ratings

Rating	Symbol	Value	Unit
Drain--Source Voltage	V_{DSS}	150	Vdc
Gate--Source Voltage	V_{GS}	-10 to +2	Vdc
Operating Voltage	V_{DD}	+36	Vdc
Storage Temperature Range	Tstg	-65 to +150	°C
Case Operating Temperature	T_C	+150	°C
Operating Junction Temperature	T_J	+225	°C

Table 2. Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Case T_C= 25°C, DC test	$R_{\theta JC}$	5	°C/W

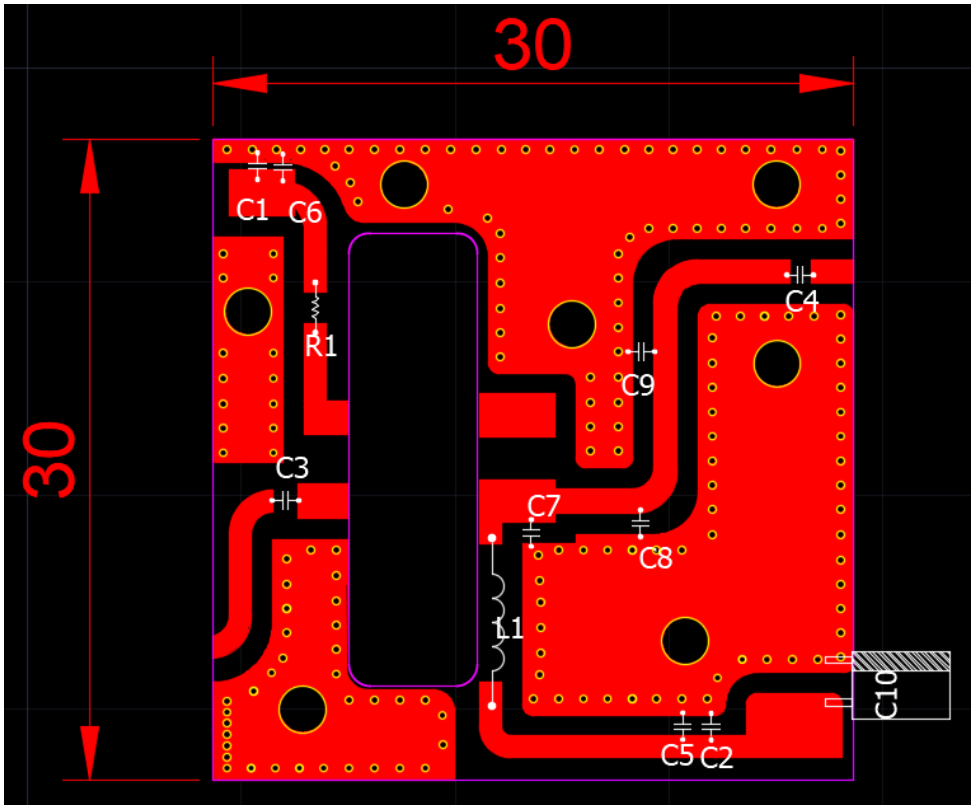
Table 3. Electrical Characteristics

Parameter	Condition	Min	Typ	Max	Unit
Frequency Range		500		2500	MHz
Power Gain @ Psat		6			dB
P_{SAT}			15	30	W
Drain Efficiency @ P_{SAT}		35			%
Unless otherwise noted: TA = 25°C, V_{DD} =28 V, Pulse Width=20 us, Duty cycle=10%					

Load Mismatch of per Section (On Test Fixture, 50 ohm system): V_{DD} =28V, I_{DQ} =120mA, f = 2GHz

VSWR 10:1 at Pout=20W, pulse CW Output Power	No Device Degradation

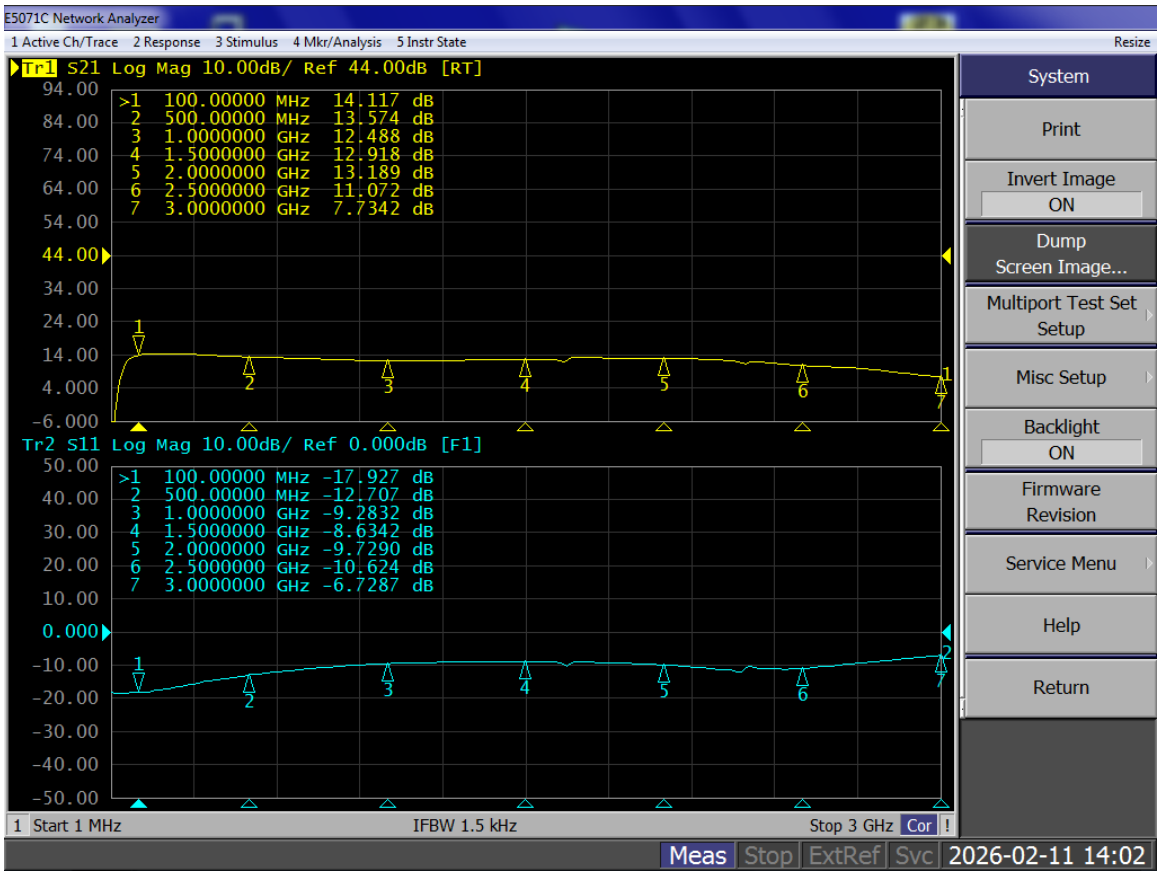
Reference Circuit of Test Fixture Assembly Diagram



Component	Description	Suggested Manufacturer
C1~C4	1uF 0805	/
C5,C6	120pF MQ300805	
C7	0.5pF MQ300805	
C8,C9	1.2pF MQ300805	
C10	470uF/63V	/
R1	18Ω 1206	/
L1	Wire diameter 0.8mm,inner diameter 2.5mm 13turns	DIY
PCB	20mil Rogers 4350B	

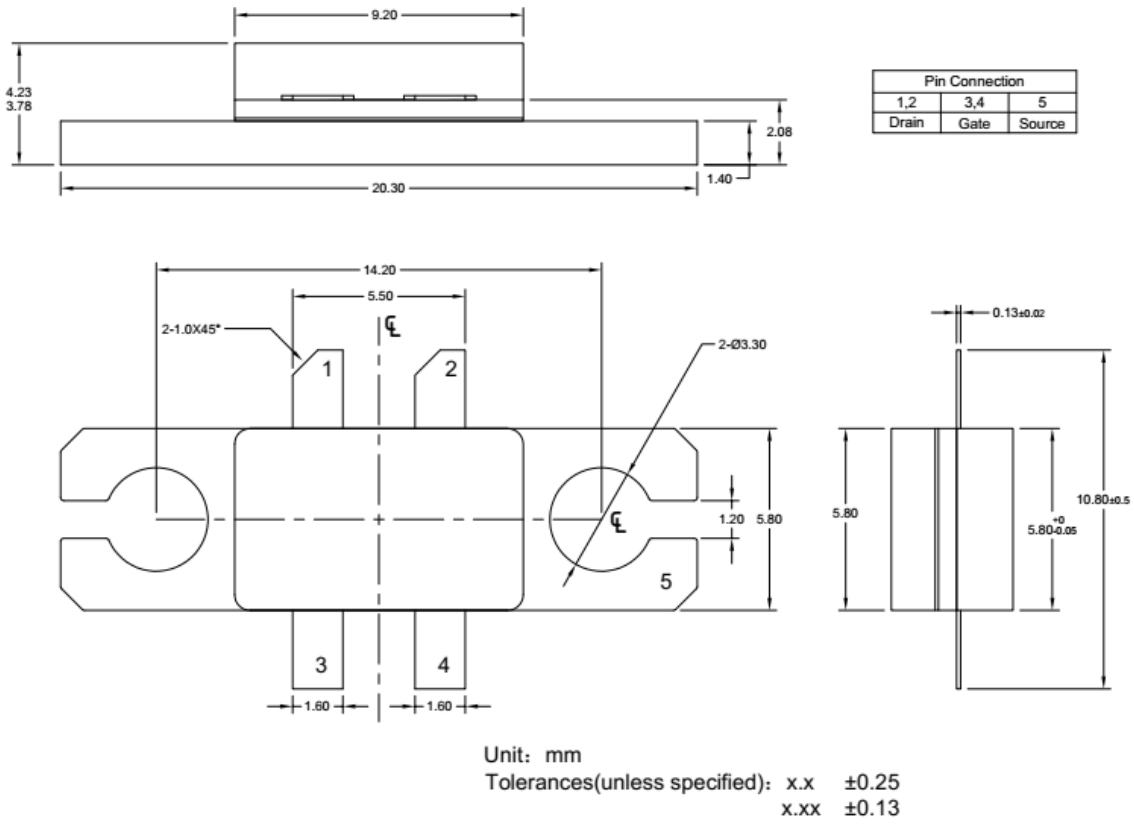
TYPICAL CHARACTERISTICS

Figure 1. Network analyzer output S11/S21 (Pin=0dBm) @28V



Package Outline

Flanged ceramic package; 2 mounting holes; 4 leads



OUTLINE VERSION	REFERENCE			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA		
PKG-G4E					2018/01/19

Figure 1. Package Outline PKG-G4E

Revision history

Table 6. Document revision history

Date	Revision	Datasheet Status
2026/2/11	V1.0	Production datasheet

Application data based on HL-26-05

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