



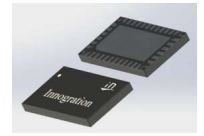
DC-1.5GHz, 20W, 50V LDMOS Fully matched PA Module

Description

The IMGV0015-20 is a 20-watt, single stage integrated Power Amplifier Module, designed for broad band applications, with frequencies from DC to 1.5GHz. The module is 50 Ω input/output matched and requires minimal external components. **It is recommended for pulsed amplifier ONLY when used at 50V.**

When used at 28V, it can enable >8W CW across the same DC to 1.5GHz.

The module implements distributed power amplifier in form of multi chips, housed in cost effective plastic open cavity package, offers a much lower cost than traditional MMIC solutions.



Vds=50V, Idq=150mA, Pulsed CW 10us, 10%

Parameter	100MHz	500MHz	800MHz	1200MHz	1500MHz	1700MHz	Units
Linear Gain	18.0	18.5	18.0	16.2	19.0	17.9	dB
Gain@Pin=30dBm	14.5	14.8	14.1	12.8	14.5	13.5	dB
Pout@Pin=30dBm	28.4	29.8	25.5	20.0	28.0	22.3	W
Eff@Pin=30dBm	74	50	35	27	44	43	%

Vds=28V, Idq=150mA, CW

Parameter	30MHz	100MHz	300MHz	600MHz	1200MHz	1500MHz	Units
Linear Gain	19.0	18.2	18.0	17.7	15.9	18.9	dB
Gain@Pin=25dBm	14.7	14.6	15.1	14.5	14.7	14.4	dB
Pout@Pin=25dBm	9.3	9.2	10.2	8.9	9.4	8.7	W
Eff@Pin=25dBm	79	74	60	43	37	43	%

Product Features

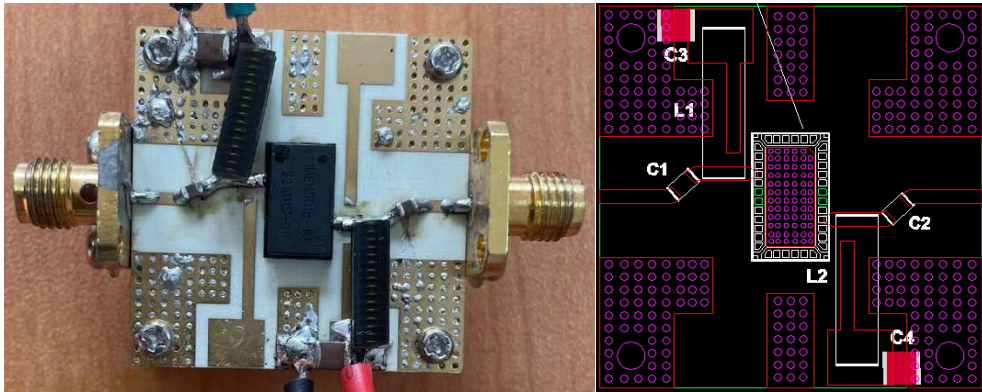
- Operating Frequency Range: DC-1.5GHz
- Operating Drain Voltage: +50 V / 28V
- 50 Ω Input/Output
- Psat: ≥20W(Pulse)/8W(CW)
- Small signal gain:>16dB, Power gain:>12dB @50V
- Minimum efficiency:>25% @50V
- 6x10 mm Surface Mount Package
- Compliant to Restriction of Hazardous Substances (RoHS) Directive 2002/95/EC
- Much lower cost than GaN-based ultrawide band PA, due to LDMOS technology used

Applications

- Ultra Broadband Amplifiers
- Driver for ISM, FM
- Test Instrumentation
- EMC Amplifier Drivers
- HF/VHF 2-way Radios



Reference Circuit of Test Fixture Assembly Diagram



		Part NO.	Vendor
C3,C4	10uF 100V Chip Capacitor	C5750X7S2A106M230KB	TDK
C1,C2	50V 1uF Chip Capacitor	GRM21BR71H105KA12L	muRata
L1,L2	1.3uH 4.2A Inductor	4310LC-132KEC	Coilcraft
PCB	RO4350B,20mil,er=3.48		

TYPICAL CHARACTERISTICS

Figure 1. Network analyzer output S11/S21 (Pin=0dBm) @50V

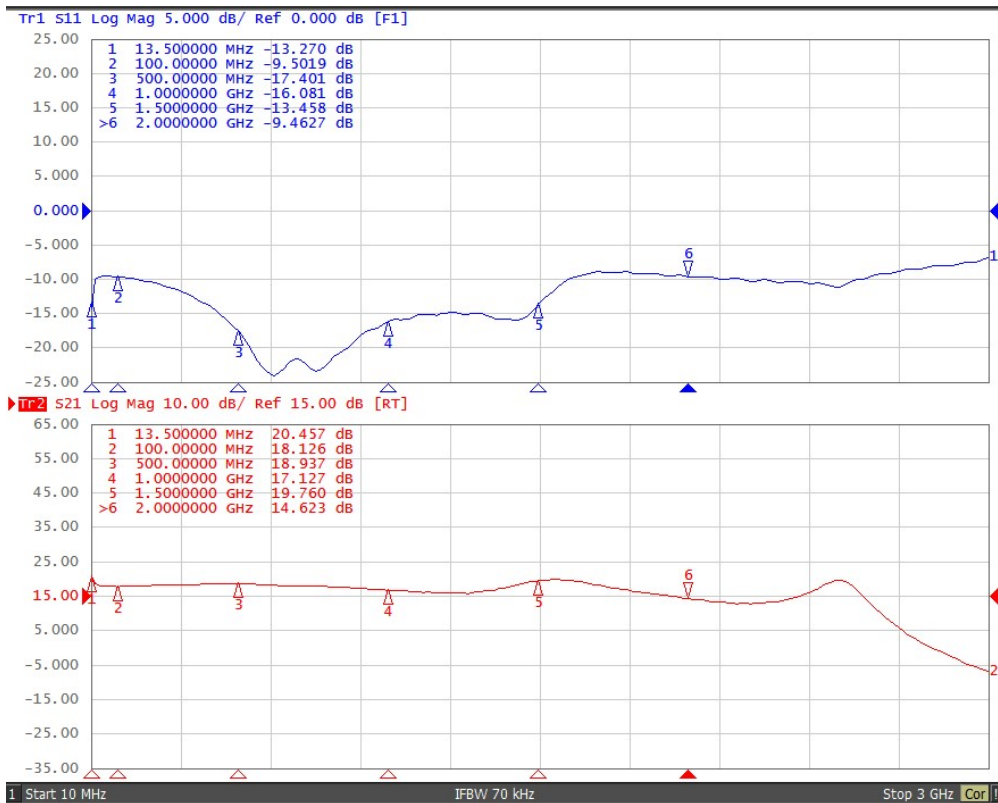
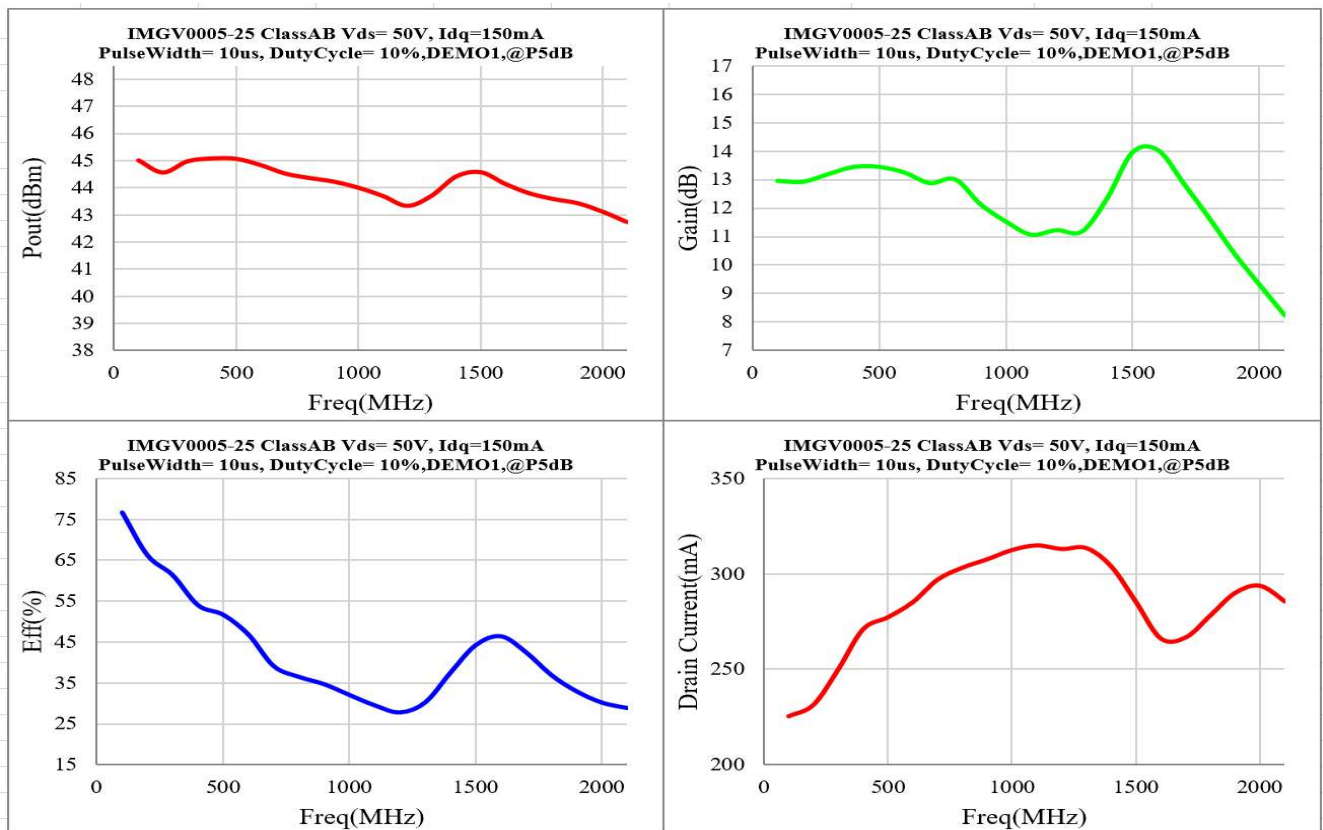
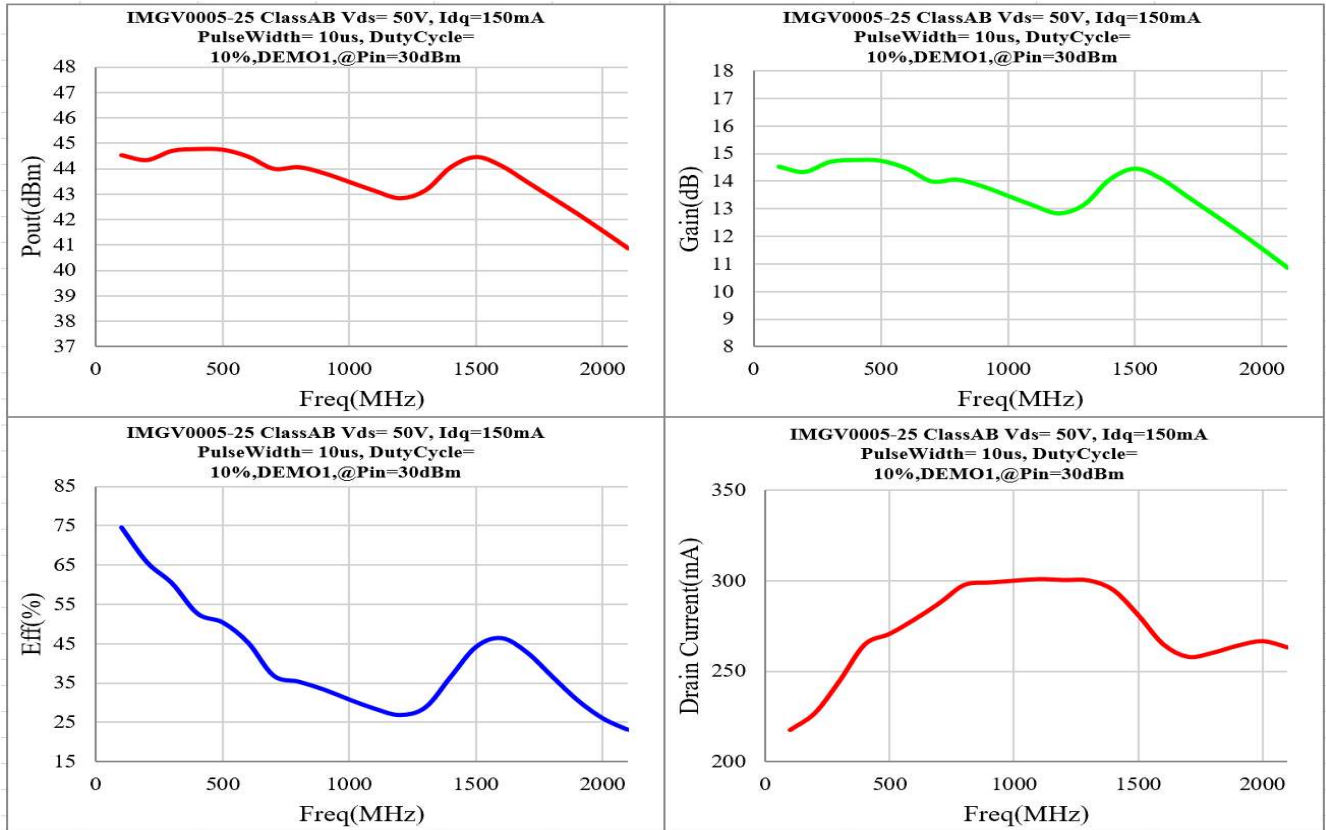


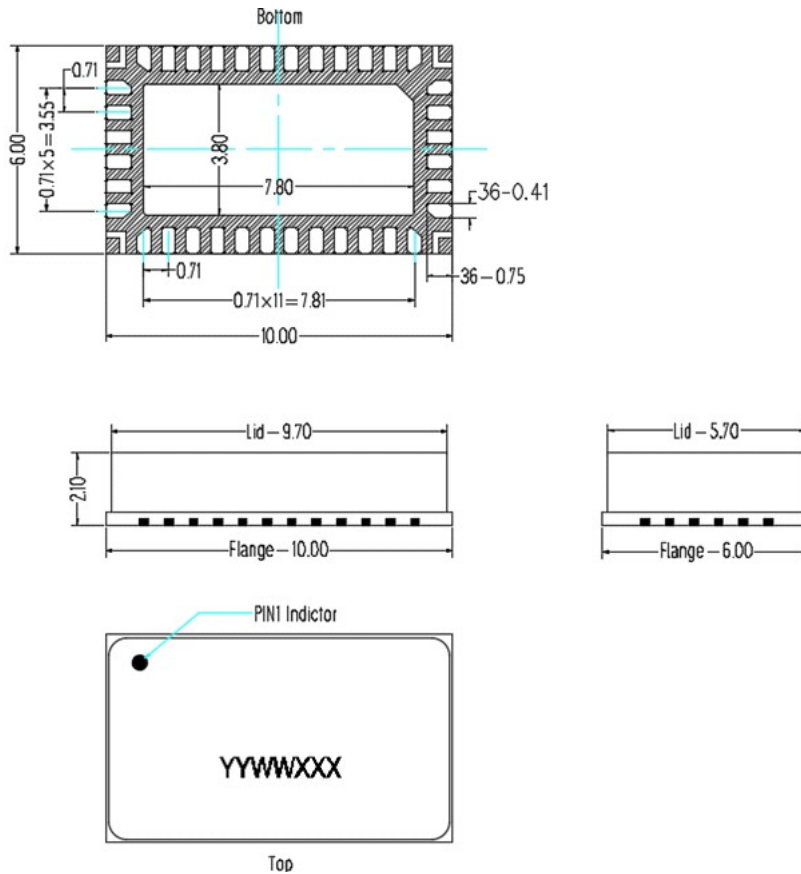


Figure. Power Gain and, efficiency and Pout @Pin=30dBm ,and P5dB vs. Frequency @50V



Package Dimensions

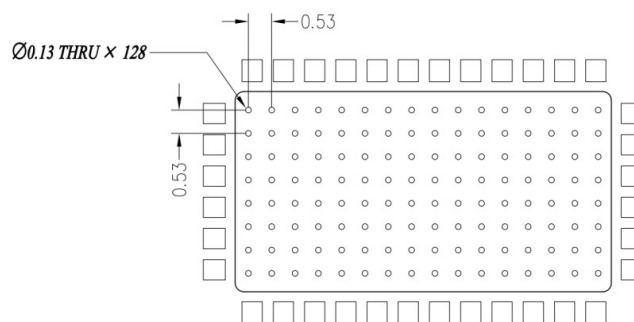
10*6 Plastic Package



Notes:

1. All dimensions are in mm;
2. The tolerances unless specified are ± 0.2 mm.

Mounting Footprint Pattern



Notes:

1. All dimensions are in mm;
2. Vias are required under the backside paddle of this device for proper RF/DC grounding and thermal dissipation. ALL vias are PTH to ground.



Revision history

Table 6. Document revision history

Date	Revision	Datasheet Status
2023/5/13	Rev 1.0	Production Datasheet

Application data based on ZHH-23-07/08

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