



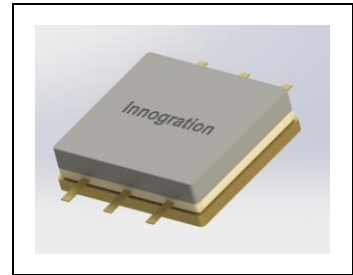
8-12GHz, 15W, GaN Fully matched PA Module

Description

The XMAH801C-15H2C is a 15-watt, single stage integrated Power Amplifier Module, designed for application with frequencies from 8-12GHz.

The module is 50 Ω input/output matched and requires minimal external components.

Please read carefully the soldering notice for H2C package on last page



| $V_{ds}=28V, V_{gs}=-2.43V, I_{dq}=40mA$ | | | | | |
|--|-----------------|--------------------|-----------------|---------------|---------------|
| CW Power | | | | | |
| Freq(MHz) | P-1(dBm) | P-1Gain(dB) | P-3(dBm) | P-3(W) | EFF(%) |
| 8000 | 42.20 | 7.6 | 43.88 | 24.4 | 36.4 |
| 8500 | 41.90 | 8.3 | 43.54 | 22.6 | 34.8 |
| 9000 | 41.34 | 8.7 | 42.72 | 18.7 | 38.2 |
| 9500 | 41.09 | 9.3 | 42.32 | 17.1 | 51.6 |
| 10000 | 41.15 | 7.3 | 42.25 | 16.8 | 44.3 |
| 10500 | 41.31 | 8.5 | 42.88 | 19.4 | 39.9 |
| 11000 | 41.34 | 8.6 | 42.96 | 19.8 | 33.3 |
| 11500 | 40.89 | 6.9 | 42.87 | 19.4 | 35.1 |
| 12000 | 40.92 | 7.6 | 42.91 | 19.5 | 36.8 |
| 12500 | 40.60 | 8.1 | 42.54 | 17.9 | 39.7 |

Product Features

- Operating Frequency Range: 8-12GHz
- Operating Drain Voltage(Recommended): +28V (Up to 32V)
- 50 Ω Input/Output (External DC block capacitor needed)
- $P_{sat} \geq 15W$ (CW)
- Small signal gain:>7.5dB, Power gain:>5dB
- Minimum P_{sat} efficiency:>30%
- 18*17 mm plastic open cavity package
- Compliant to Restriction of Hazardous Substances (RoHS) Directive 2002/95/EC

Applications

- Power Amplifiers within X band
- Test Instrumentation
- EMC Amplifier Drivers

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} | +32 | Vdc |
| Storage Temperature Range | T_{stg} | -65 to +150 | °C |
| Case Operating Temperature | T_C | +150 | °C |

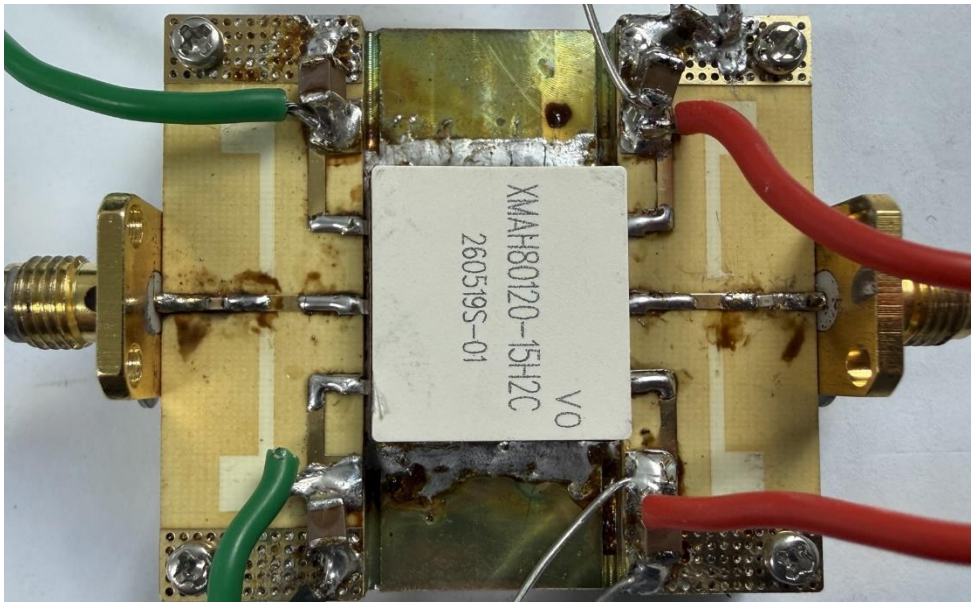
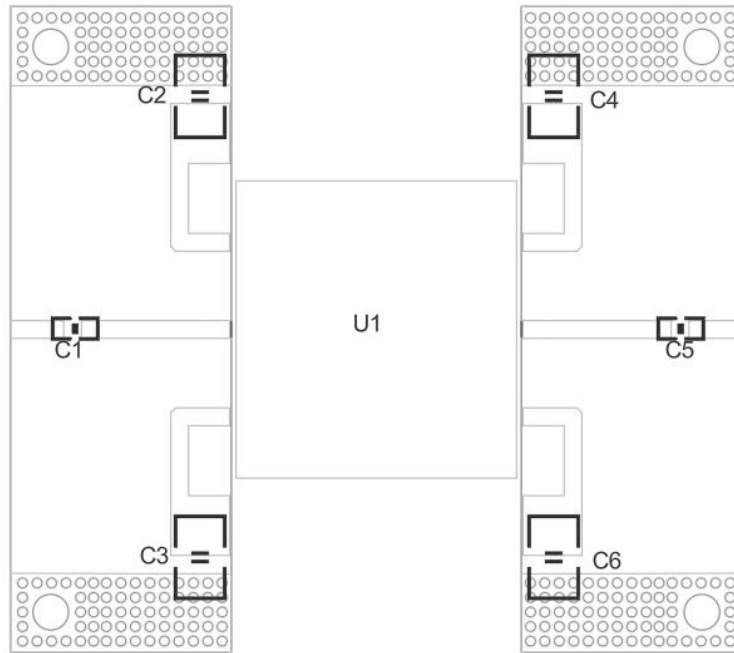


| | | | |
|--------------------------------|-------|------|----|
| Operating Junction Temperature | T_j | +225 | °C |
|--------------------------------|-------|------|----|

Table 2. Thermal Characteristics

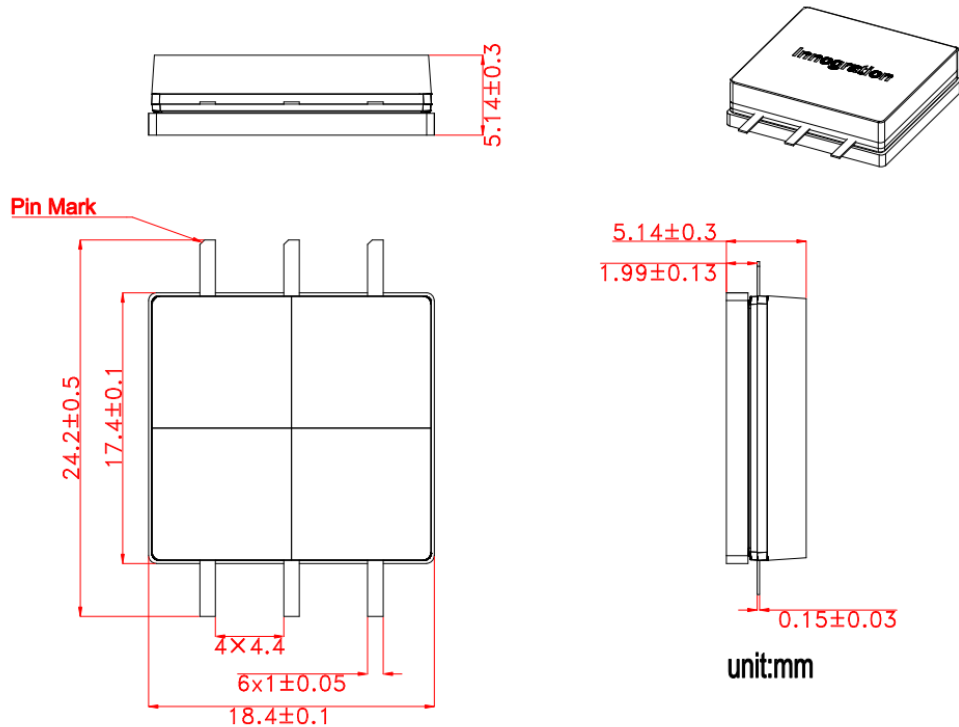
| Characteristic | Symbol | Value | Unit |
|---|-----------------|-------|------|
| Thermal Resistance, Junction to Case $T_c=25^\circ\text{C}$, $P_{out}=15\text{W}$, FEA | $R_{\theta JC}$ | 3 | °C/W |

Typical application circuit



| Component | Value | Description |
|-------------|-----------------|------------------|
| U1 | XMAH80120-15H2C | PA (18.4*17.4cm) |
| C1、C5 | 1.1pF | 0603 |
| C2、C3、C4、C6 | 10uF | 1206 |

Package Dimensions (Unit:mm)



When soldering, the temperature of the iron tip must be below 220°C. The contact time between the iron tip and the pins should be as short as possible, not exceeding 10 seconds. The number of repeated soldering operations must not exceed 3 times. Otherwise, it may damage the bond between the ACP lead frame and the pins, resulting in failure of the component's sealing performance.

Revision history

Table 6. Document revision history

| Date | Revision | Datasheet Status |
|-----------|----------|--------------------|
| 2026/3/16 | Rev 1.0 | Advanced Datasheet |

Application data based on HJ-26-01

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