

## 800-4200MHz/50Watt/Module

Model Number: KB0842M47A

The model KB0842M47A is a multi-octave high power amplifier operating between 800 MHz and 4200 MHz and offering a wide dynamic range with 50 Watts typical saturated power. The employment of gallium nitride(GaN) and chip-and-wire technology in manufacturing ensures this module state-of-the-art power performance with excellent power-to-volume ratio. It is ideal for multi-octave broadband high power RF applications.

### FEATURES:

- Suitable for RF, L&S&C Applications
- Small Size and Light Weight
- Unconditional Stability and Ruggedness
- Built-in Control, and Protection Circuits
- Class AB

### ELECTRICAL SPECIFICATIONS @ +28.0VDC, 25°C, 50Ω system

| Parameter                        | Symbol    | Min | Typ | Max  | Units |
|----------------------------------|-----------|-----|-----|------|-------|
| Operating Frequency              | BW        | 800 |     | 4200 | MHz   |
| RF Output Power                  | Pout      |     | 50  |      | Watt  |
| Power Gain                       | Gp        |     | 47  |      | dB    |
| Power Gain Flatness              | Δ Gp      |     | ±2  |      | dB    |
| Input Return Loss                | S11       |     |     | -10  | dB    |
| Harmonics @20W                   | H         |     | -15 |      | dBc   |
| Spurious Signals                 | Spur      |     | -60 |      | dBc   |
| Switching Speed                  | TON/OFF   |     | 2   | 5    | μS    |
| In/Output Impedance              | Impedance |     | 50  |      | Ω     |
| Operating Voltage                | Vbc       | 24  | 28  | 32   | Volt  |
| Power add efficiency             | Eff       |     | 23  |      | %     |
| Current Consumption @ POUT = 40W | IDD       |     |     | 13   | Amp   |

### MECHANICAL SPECIFICATIONS

| Parameter              | Value                                     | Units     | Notes   |
|------------------------|-------------------------------------------|-----------|---------|
| Dimensions             | 180x120x25 [7.09x4.72x0.98]               | mm [inch] | Maximum |
| Weight                 | 1.5[3.3]                                  | kg [lbs]  | Maximum |
| RF Connectors Input    | SMA, Female                               |           |         |
| RF Connectors Output   | SMA, Female                               |           |         |
| DC Interface Connector | D-Sub 9-Pin, Male                         |           |         |
| Cooling                | External Heatsink Required (Not Supplied) |           |         |

### ENVIRONMENTAL CHARACTERISTICS (Design to Meet)

| Parameter                          | Minimum | Typical | Maximum | Units | Notes   |
|------------------------------------|---------|---------|---------|-------|---------|
| Operating Temperature              | -40     |         | 60      | °C    |         |
| Non-operating Temperature          | -45     |         | 85      | °C    | Storage |
| Relative Humidity (non-condensing) |         |         | 95      | %     |         |

### Absolute Maximum Rating

|                                     |                                                                                                          |
|-------------------------------------|----------------------------------------------------------------------------------------------------------|
| Input RF drive level without damage | +10 dBm (Max)                                                                                            |
| Load VSWR @ POUT =30W               | ∞ @ all load phase & amplitude for duration of 1 minutes;<br>3:1 @ all load phase & amplitude continuous |
| Over Temperature                    | 85°C @ heatsink [restored @ 60°C]                                                                        |

### Focus on Your Application

\*Chengdu KeyLink Wireless Technology Co., Ltd.\*

>> 5-2, Huidu Headquarters Park, High-Tech(West) Zone, Chengdu, 611731, P. R. China

>> Phone: +86(28)87870761

>> Fax: +86(28)87883266

>> Email: sales@keylinkmw.com

>> www.keylinkmw.com

Specifications subject to change without notice

# Broadband High Power Amplifier Module (SSPA)

REV. 3.0\_2025.01.24

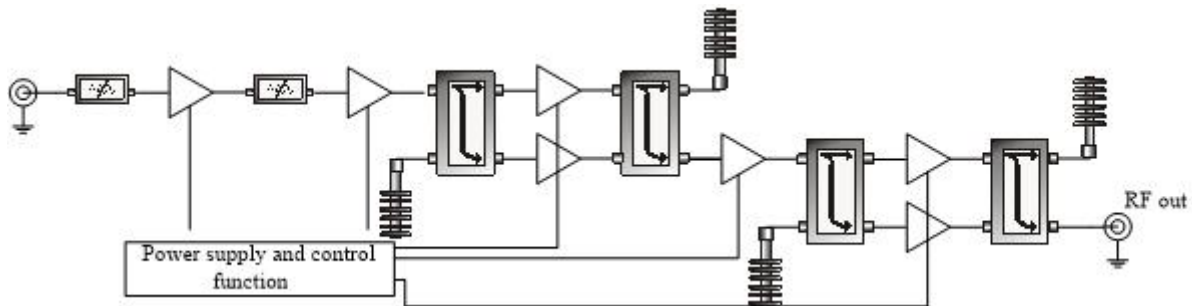
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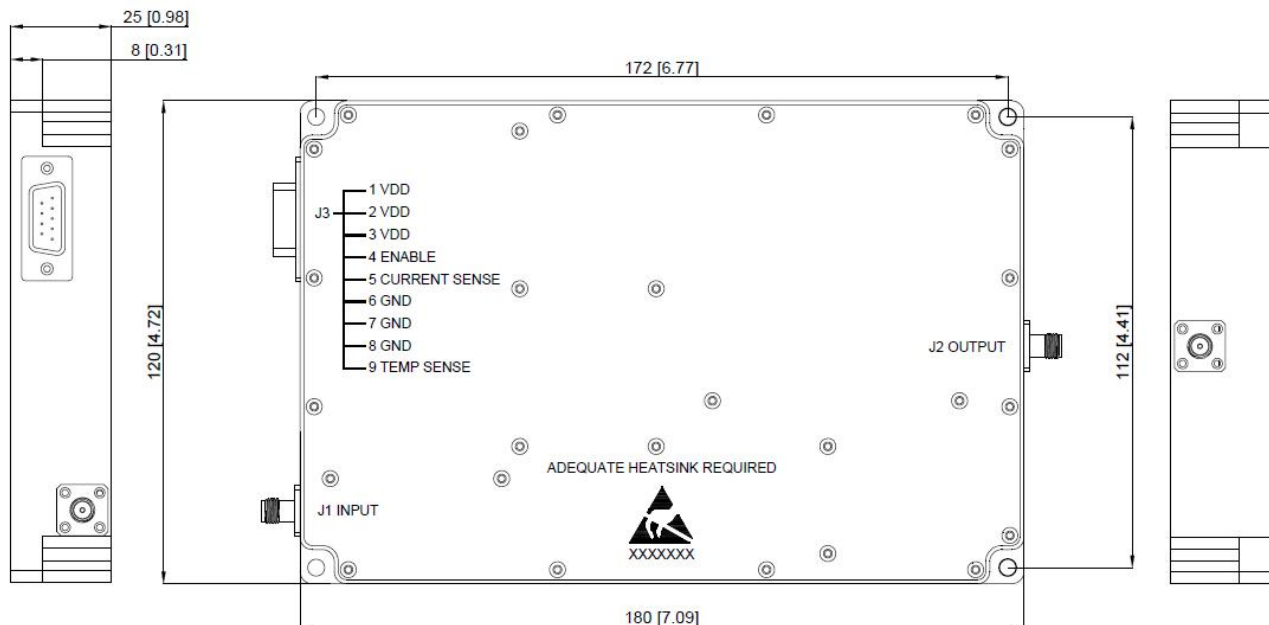
## DC INTERFACE CONNECTOR

| Pin # | Description   | Specifications                                                  |
|-------|---------------|-----------------------------------------------------------------|
| 1     | VDD           | 28VDC                                                           |
| 2     | VDD           | 28VDC                                                           |
| 3     | VDD           | 28VDC                                                           |
| 4     | ENABLE        | Amplifier Enable: TTL Logic High (3.3V) (Internally Pulled-Low) |
| 5     | CURRENT SENSE | Analog voltage relative to IDD @ 100mV per Ampere               |
| 6     | GND           | Ground                                                          |
| 7     | GND           | Ground                                                          |
| 8     | GND           | Ground                                                          |
| 9     | TEMP SENSE    | Analog voltage relative to Module's Temperature @ 10 mV/°C      |

## Functional Diagram



## OUTLINE DRAWING (All dimensions in mm[inch])



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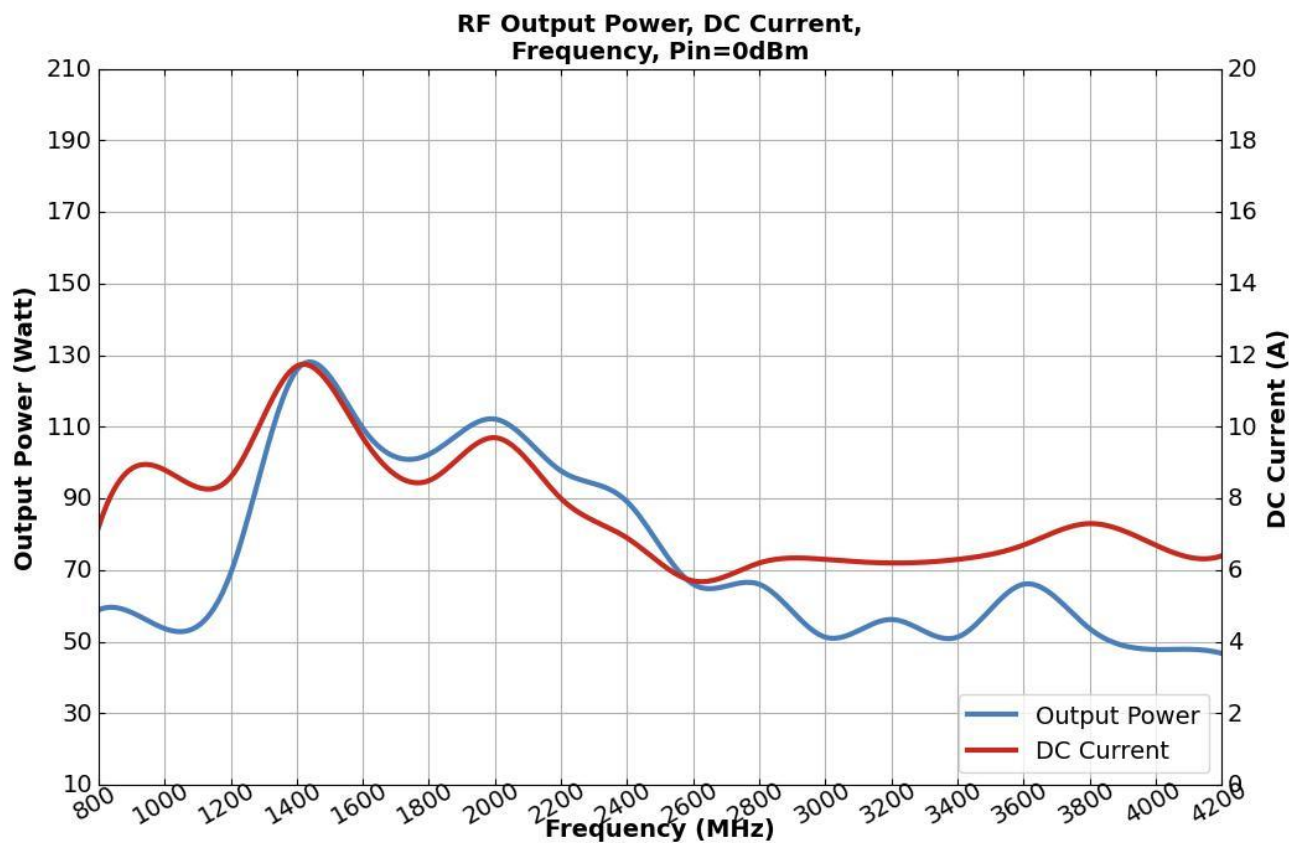
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TYPICAL PERFORMANCE PLOTS (For reference only)

**Note:** Adequate heatsink required.*Focus on Your Application***\*Chengdu KeyLink Wireless Technology Co., Ltd.\***

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