

## Narrowband High Power Amplifier Module (SSPA)

REV.3.0\_2024.04.22

### 2300-2500MHz/50Watt/Module

Model Number: KN2400M47A

The model KN2400M47A is a high power amplifier operating between 2.3GHz and 2.5GHz and offering a wide dynamic Range with 50Watts typical saturated power. The employment of advanced high power devices in manufacturing ensures this module exceptional power performance, long term reliability and high efficiency.

#### FEATURES:

- Narrowband & High power
- High Efficiency
- Great Linearity
- Small Size & Light Weight
- Low Distortion

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

| Parameter                 | Symbol    | Min | Typ  | Max | Units |
|---------------------------|-----------|-----|------|-----|-------|
| Operating Frequency       | BW        | 2.3 |      | 2.5 | GHz   |
| RF Output Power           | Psat      | 50  |      |     | Watt  |
| Power Gain                | Gp        |     | 49   |     | dB    |
| Power Gain Flatness       | ΔGp       |     | ±1.5 |     | dB    |
| Input Return Loss         | S11       |     | -14  | -10 | dB    |
| Output Return Loss        | S22       |     | -14  | -10 | dB    |
| Harmonics @30W            | H         |     | -40  |     | dBc   |
| Spurious Signals          | Spur      |     | -55  |     | dBc   |
| Switch On/Off@10-90% Time | TON/OFF   |     | 2    |     | μs    |
| In/Output Impedance       | Impedance |     | 50   |     | Ω     |
| Operating Voltage         | VDC       | 24  | 28   | 32  | Volt  |
| DC Current @50W           | IDD       |     | 7    |     | Amp   |

#### MECHANICAL SPECIFICATIONS

| Parameter              | Value                                     | Units     | Notes   |
|------------------------|-------------------------------------------|-----------|---------|
| Dimensions             | 150x90x25 [5.91x3.55x0.98]                | 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              | -20     |         | 60      | °C    |         |
| Non-operating Temperature          | -25     |         | 65      | °C    | Storage |
| Relative Humidity (non-condensing) |         |         | 95      | %     |         |

#### ABSOLUTE MAXIMUM RATING

|                                     |                                                                                                          |
|-------------------------------------|----------------------------------------------------------------------------------------------------------|
| Input RF drive level without damage | +5 dBm (Max)                                                                                             |
| Load VSWR @ POUT =20W               | ∞ @ 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

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Specifications subject to change without notice

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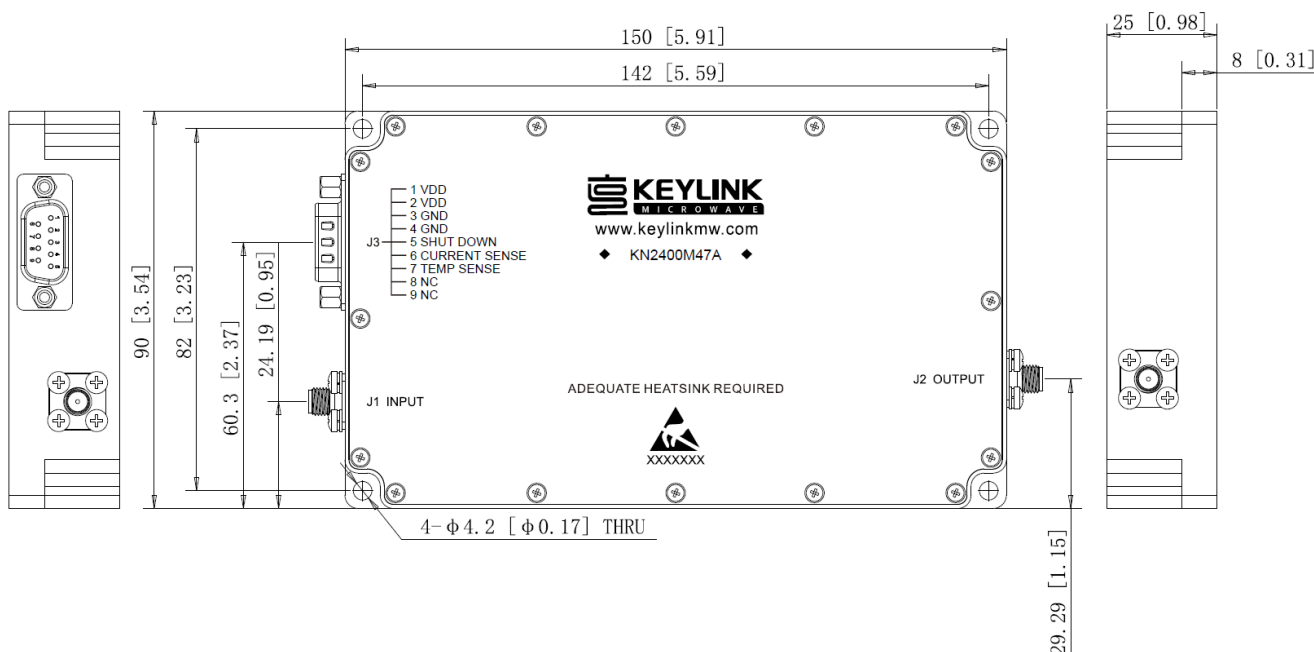
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## DC INTERFACE CONNECTOR

| Pin # | Description   | Specifications                                                   |
|-------|---------------|------------------------------------------------------------------|
| 1, 2  | VDD           | 28VDC                                                            |
| 3, 4  | GND           | Ground                                                           |
| 5     | SHUTDOWN      | Amplifier Disable: TTL Logic High (3.3V) (Internally Pulled-Low) |
| 6     | CURRENT SENSE | Analog voltage relative to IDD @ 100mV per Ampere                |
| 7     | TEMP SENSE    | Analog voltage relative to Module's Temperature @ 10 mV/°C       |
| 8     | NC            | No Connection                                                    |
| 9     | NC            | No Connection                                                    |

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



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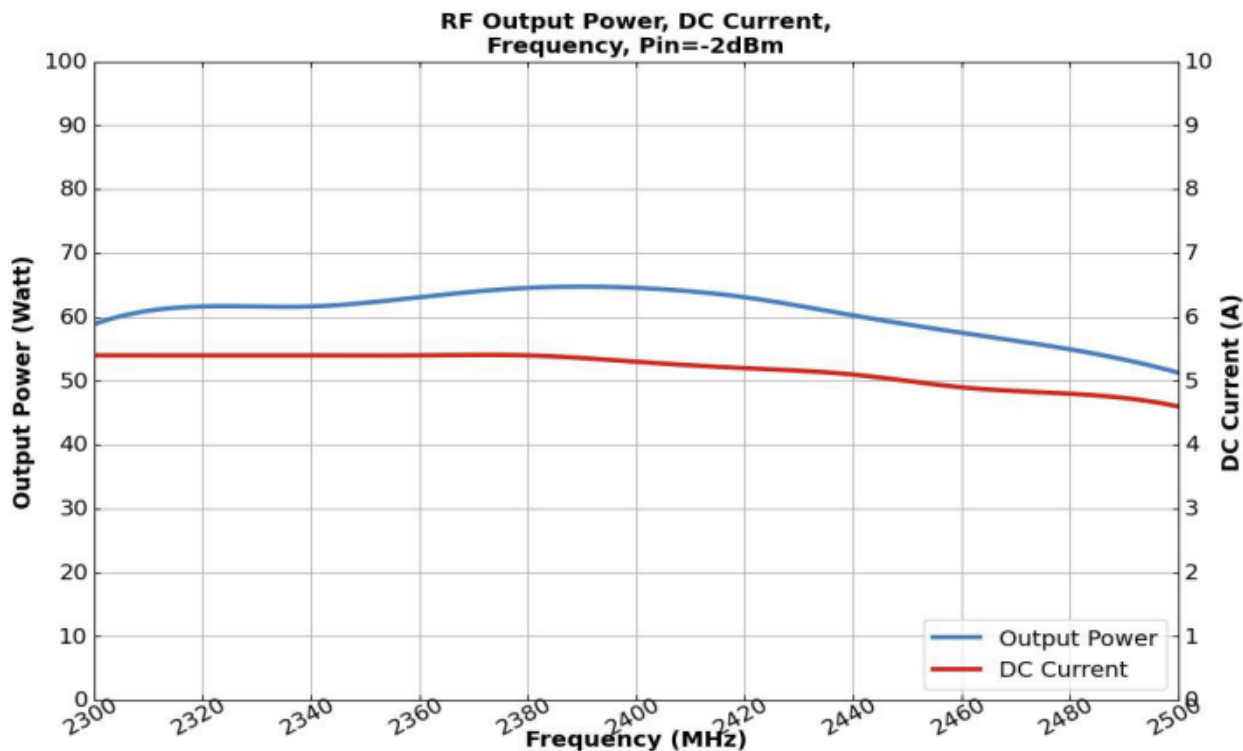
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TYPICAL PERFORMANCE PLOTS (FOR REFERENCE ONLY)



**Note:** Adequate heatsink required.

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