



**Product Features**

- 900 ~ 930MHz
- 1500W CW Peak Power @ 50V
- 63% Drain Efficiency @ 50V
- Low Cost, Light Weight, Compact
- Using GaN-on-SiC HEMT Transistor
- Excellent Thermal Stability and Ruggedness
- Externally 50Ω Matched

**Applications**

- High Power Industry
- Microwave CVD Reactor
- Plasma Generator
- Food Science
- MW Heating and Drying

**Description**

RIM091K5-20 using GaN-on-SiC transistors is designed for industrial, scientific, medical (ISM) and plasma applications at 915MHz. RIM091K5-20 is the world's highest power and efficiency SSPA with affordable price. This amplifier is suitable for use in CW, ISM applications. This high efficiency rugged device is targeted to replace industrial magnetrons and other vacuum tubes which are currently applying into high power industrial applications, artificial diamond manufacturing, semiconductor equipments, and plasma systems.

**Electrical Specifications @  $V_{DS}=50V$ ,  $T=25^{\circ}C$ , 50Ω System**

| PARAMETER                  | UNIT          | MIN    | TYP  | MAX | SYMBOL          |
|----------------------------|---------------|--------|--|-----|-----------------|
| Operating Frequency        | MHz           | 900    | -  | 930 | F <sub>o</sub>  |
| Operating Bandwidth        | MHz           | -      | 30   | -   | OBW             |
| CW Output Power            | W             | -      | 1500   | -   | P <sub>o</sub>  |
| Efficiency                 | %             | -      | 63   | -   | Eff             |
| Input Power                | dBm           | -      | 10   | -   | P <sub>i</sub>  |
| Power Gain @ Peak Power    | dB            | -      | 51.8   | -   | G <sub>p</sub>  |
| Gain Flatness              | dB            | -      | 0.5  | 1.0 | ΔG <sub>p</sub> |
| In/Out Return Loss         | dB            | -      | -  | -15 | S <sub>11</sub> |
| Operating Voltage          | V             | -      | 50   | -   | V <sub>dc</sub> |
| Operating Case Temperature |               | -      | -  | 60  | T <sub>c</sub>  |
| DC & Controls Connector    | DCM21HA4PNK87 | A1~A4  | A1~A2(50V ±1%), A3~A4(GND)                     |     | -               |
|                            |               | 1~2    | +12V±5%  |     | -               |
|                            |               | 3      | Input Power Monitor                            |     | -               |
|                            |               | 4      | RF En/Dis : Enable(Low), Disable(High or Open) |     | -               |
|                            |               | 5      | +50VDC Voltage Monitor                         |     | -               |
|                            |               | 8      | Gain Control                                   |     | -               |
|                            |               | 9      | GND  |     | -               |
|                            |               | 10~11  | 10( Current Monitor_A), 11( Current Monitor_B) |     | -               |
|                            |               | 14~15  | 14( Temp Monitor_A), 15( Temp Monitor_B)       |     | -               |
|                            |               | 16     | Reflect Power Monitor                          |     | -               |
|                            |               | 17     | Forward Power Monitor                          |     | -               |
|                            |               | Others | Reseved  |     | -               |

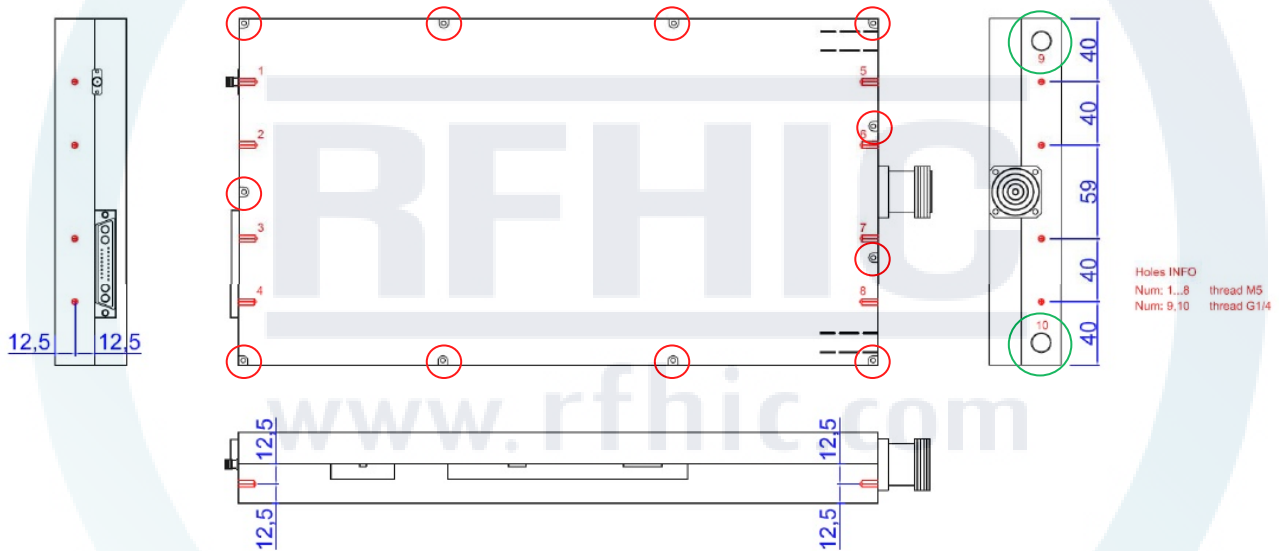
**Mechanical Specifications**

| PARAMETER              | UNIT | VALUE  |
|------------------------|------|--|
| Dimensions (L x W x H) | mm   | 400 x 219 x 45   |
| Weight                 | Kg   | 7.0 typ  |
| RF Input Connectors    | -    | SMA, Female  |
| RF Output Connectors   | -    | 7/16 DIN, Female                                       |
| DC & I/O Connector     | -    | DCM21HA4PNK87  |
| Cooling                | -    | Water cooling ( 20°C typ, 2 liter per minute, 0.2 bar) |

**Note**

Water cooling condition may be subject to change.

**Mechanical drawing**



- : Mount Hole
- : Water Inlet/Outlet

**Revision History**

| Part Number | Release Date | Version | Description                  | Data Sheet Status |
|-------------|--------------|---------|------------------------------|-------------------|
| RIM091K5-20 | Sep, 2018    | 0.1     | Initial release of datasheet | Preliminary       |
|             |              |         |                              |                   |
|             |              |         |                              |                   |



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