## ■ Features

- High Output Power: Psat=51.0dBm (Typ.)
- High Gain: Gp=10.0dB (Typ.)
- High Power Added Efficiency: PAE=41% (Typ.)
- Frequency Band: 9.3 to 9.5GHz
- Impedance Matched Zin/Zout = 50ohm
- Hermetically Sealed Package

## ■ Description

The SGC9395-100B-R is a high power GaN-HEMT that is internally matched for X-band radar bands to provide optimum power and gain in a 50ohm system.

**ABSOLUTE MAXIMUM RATING (Case Temperature $T_c$=25 deg.C)**

| Item | Symbol | Rating | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | 55 | V |
| Gate-Source Voltage | $V_{GS}$ | -15 | V |
| Storage Temperature | $T_{stg}$ | -55 to +125 | deg.C |
| Channel Temperature | $T_{ch}$ | +250 | deg.C |

**RECOMMENDED OPERATING CONDITION**

| Item | Symbol | Condition | Limit | Unit |
|---|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | | <=50 | V |
| Forward Gate Current | $I_{GF}$ | Rg=100ohm | <=61.7 | mA |
| Reverse Gate Current | $I_{GR}$ | Rg=100ohm | >=-4.5 | mA |
| Channel Temperature | $T_{ch}$ | | <+200 | deg.C |
| Output Power | $P_{out}$ | | <=P5dB | dBm |

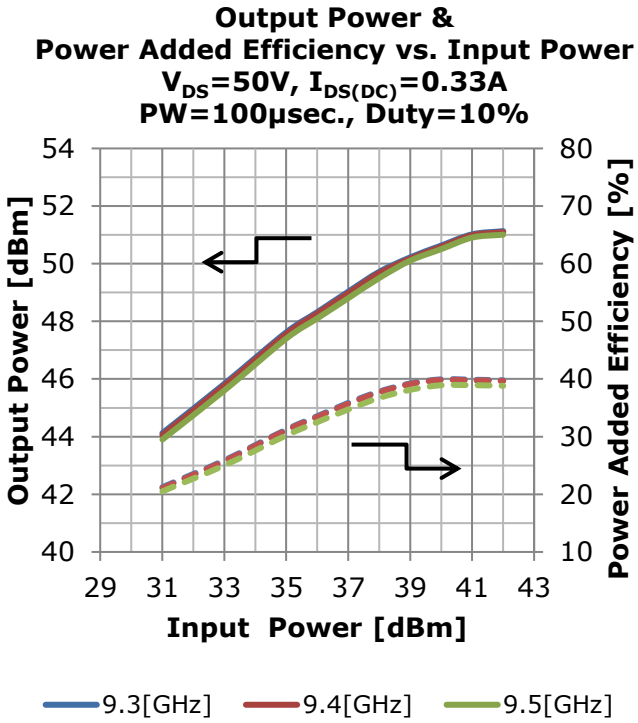
**ELECTRICAL CHARACTERISTICS (Case Temperature $T_c$=25 deg.C)**

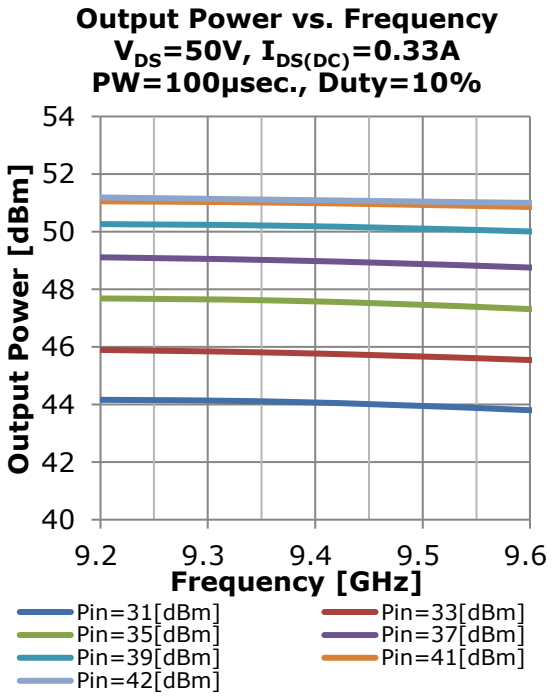
| Item | Symbol | Condition | Limit | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | |
| Pinch-off Voltage | $V_p$ | $V_{DS}$=50V, $I_{DS}$=6.5mA | - | -4.5 | - | V |
| Frequency Range | Freq. | $V_{DS}$=50V-typ.<br>$I_{DS(DC)}$=0.33A-typ.<br>Pulse Width=100µsec.<br>Duty=10% | 9.3 | - | 9.5 | GHz |
| Output Power at Pin=41dBm | $P_{sat}$ | | 50.0 | 51.0 | - | dBm |
| Power Gain at Pout=50dBm | $G_p$ | | 9.0 | 10.0 | - | dB |
| Drain Current at Pin=41dBm | $I_{DSR}$ | | - | 5.5 | 7.4 | A |
| Power Added Efficiency at Pin=41dBm | PAE | | - | 41 | - | % |
| Gain Flatness | ΔG | | - | 1.6 | - | dB |
| Thermal Resistance | $R_{th}$ | Channel to Case ($P_{diss}$=100W,CW) | - | 1.4 | 1.8 | deg.C/W |

| | | |
|---|---|---|
| CASE STYLE | IK | |
| RoHS Compliance | YES | |
| ESD | Class 2 | 2000V to <4000V |

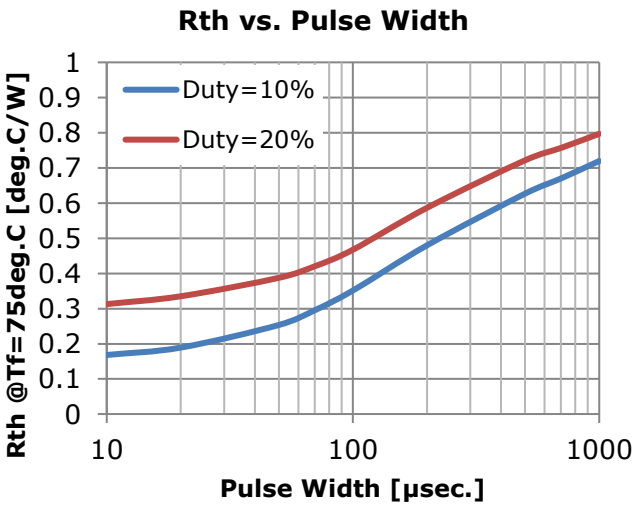
Note: Based on ANSI/ESDA/JEDEC JS-001-2012(C=100pF, R=1.5kohm)

## ● RF Characteristics



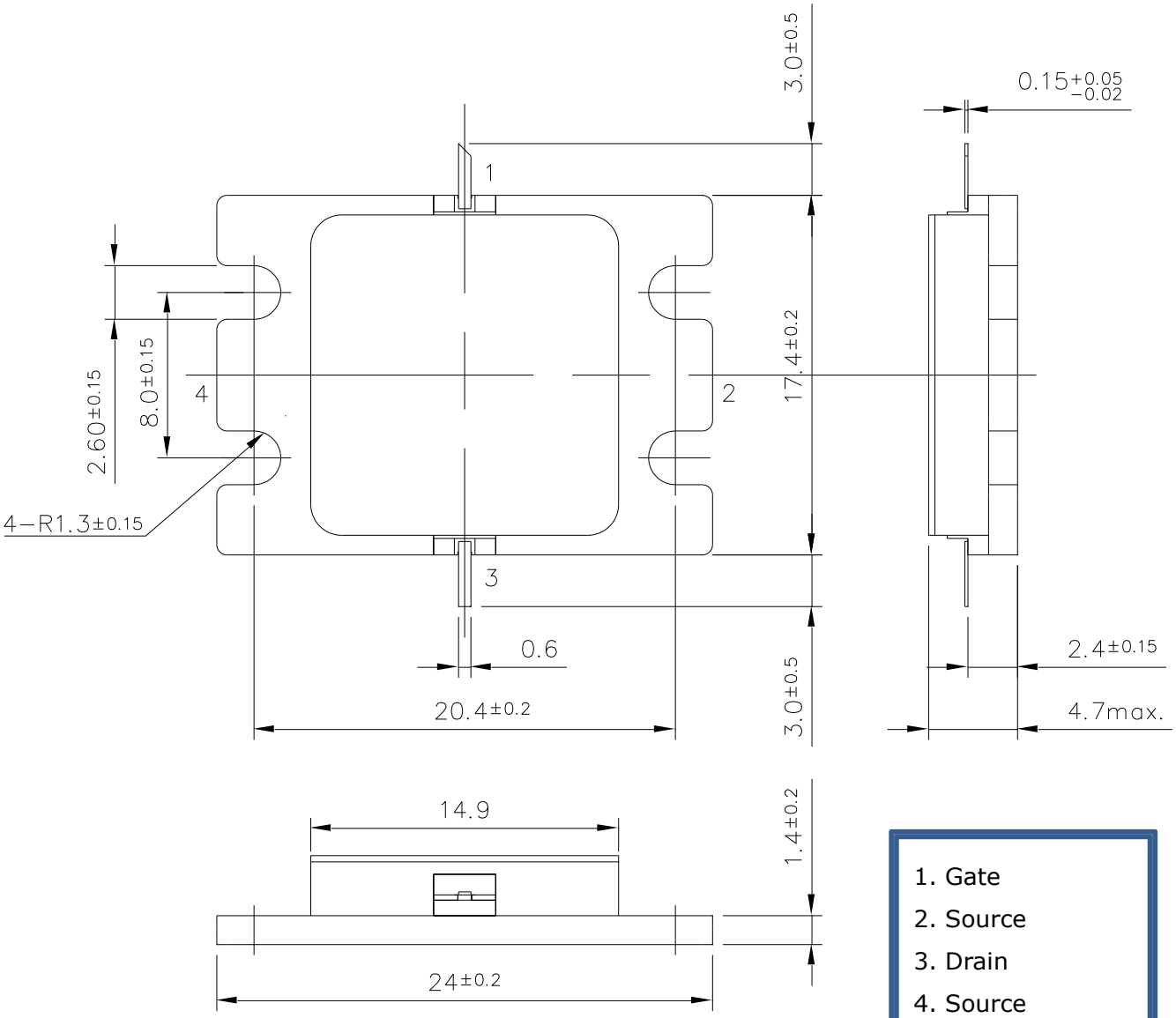




## ● Thermal Characteristics In Pulsed Operation



## ● Package Outline

**Case Style : IK**




1. Gate
2. Source
3. Drain
4. Source

Unit: mm

Tolerance: ±0.15

## For Safety, Observe the Following Procedures Environmental Management

- Do not put this product into the mouth.
- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- Respect all applicable laws of the country when discarding this product.
  This product must be disposed in accordance with methods specified by applicable hazardous waste procedures.

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