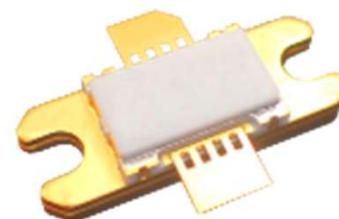


Preliminary Target Specification

■ Features

- High Power GaN HEMT for DC to 3GHz
- High Power: 110W @ 3GHz
- High Efficiency: 63% @ 3GHz
- CW Operable
- Broad Band Operation
- Small Footprint Flange-mount Package



■ Description

Sumitomo Electric's GaN-HEMT F674 offers high power, high efficiency, ease of matching and greater consistency for DC to 3GHz high power applications with 50V operation.

ABSOLUTE MAXIMUM RATINGS (Case Temperature $T_c=25\text{deg.C}$)

| Item | Symbol | Condition | Rating | Unit |
|-------------------------|-----------|----------------------|-------------|-------|
| Operating-Voltage | V_{DS} | | 55 | V |
| Drain-Source Voltage | V_{DS} | $V_{GS}=-10\text{V}$ | 200 | V |
| Gate-Source Voltage | V_{GS} | | -15 | V |
| Total Power Dissipation | P_t | | 156 | W |
| Storage Temperature | T_{sto} | | -55 to +125 | deg.C |
| Channel Temperature | T_{ch} | | +250 | deg.C |

RECOMMENDED OPERATING CONDITION

| Item | Symbol | Condition | Limit | Unit |
|----------------------|-----------|---------------------|--------------------|-------|
| DC Input Voltage | V_{DS} | | ≤ 50 | V |
| Forward Gate Current | I_{GF} | $R_G=51\text{ ohm}$ | ≤ 44.9 | mA |
| Reverse Gate Current | I_{GR} | $R_G=51\text{ ohm}$ | ≥ -4 | mA |
| Channel Temperature | T_{ch} | | $< +200$ | deg.C |
| Output Power | P_{out} | | $\leq P5\text{dB}$ | dBm |

ELECTRICAL CHARACTERISTICS (Case Temperature $T_c=25\text{deg.C}$)

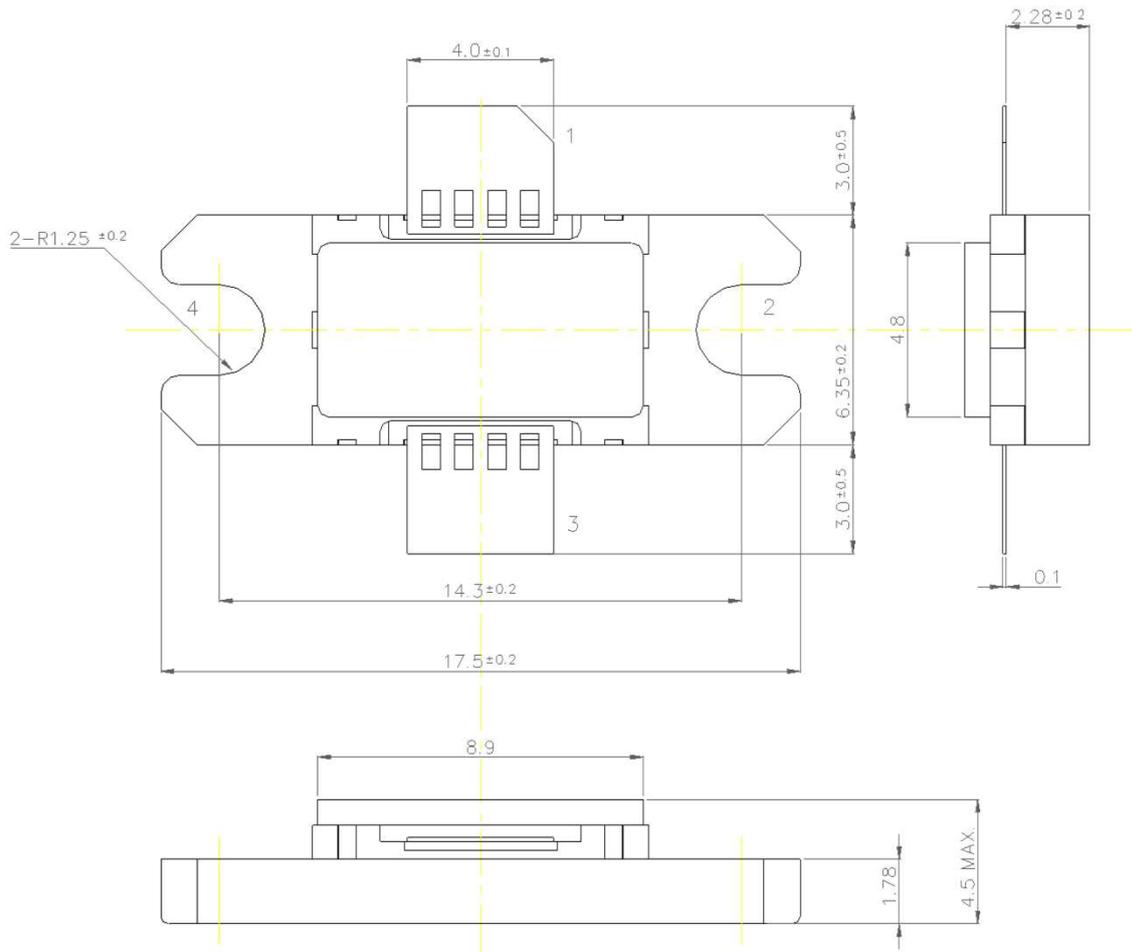
| Item | Symbol | Condition | Limit | | | Unit |
|--------------------|-----------|----------------------------------------------|-------|------|------|---------|
| | | | Min. | Typ. | Max. | |
| Pinch-off Voltage | V_p | $V_{DS}=50\text{V}, I_{DS}=5.9\text{mA}$ | - | -4.5 | - | V |
| Saturated Power | P_{sat} | $V_{DS}=50\text{V}, I_{DS(DC)}=650\text{mA}$ | TBD | 50.5 | - | dBm |
| Drain Efficiency | DE | $f=3\text{ GHz}, P_{in}=38\text{dBm}$ | TBD | 63 | - | % |
| Power Gain | Gp | $PW=200\mu\text{sec.}, \text{Duty}=10\%$ | - | 12.5 | - | dB |
| Thermal Resistance | R_{th} | Channel to Case $P_{DC}=32.7\text{W}$ | - | 1.2 | 1.44 | deg.C/W |

| | |
|-----------------|-----|
| Case Style | M1R |
| RoHS Compliance | YES |

● **Package Outline**

Preliminary Target Specification

Case Style : M1R
Metal-Ceramic Hermetic Package



- 1 : GATE
- 2 : SOURCE(Flange)
- 3 : DRAIN
- 4 : SOURCE(Flange)

Unit : mm
Tolerance : ±0.15

Preliminary Target Specification

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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