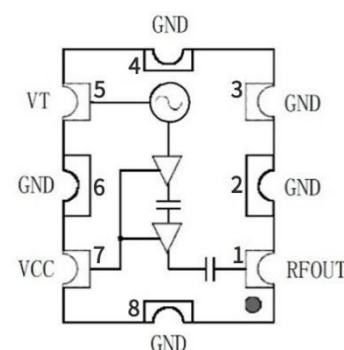
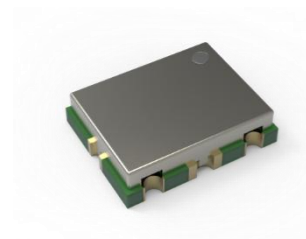


## Features

- Standard Frequency Range: 945~1250MHz@VT=0V~5V
- Output Power:  $\geq 9\text{dBm}$  @VCC=5V
- Ripple(BW $\leq 200\text{MHz}$ ):  $\pm 0.5\text{dB}$
- Supply Voltage(VCC): 4.2V~6V
- Supply Current: 18mA@VCC=5V
- Harmonic Suppression(2nd):  $\leq -20\text{dBc}$
- Harmonic Suppression(3rd):  $\leq -30\text{dBc}$
- No External Components Needed
- 50  $\Omega$  Load Impedance
- 7mm $\times$ 9mm $\times$ 2mm SMT Package



## Product Description

The YSGM101208 voltage-controlled oscillator (VCO) employs a highly stable oscillation circuit design, delivering high output power and superior isolation. It is powered by a standard 5V supply, with compatibility across a 4.2 to 6V range. Featuring an extensive tuning voltage span of 0-5V, it facilitates broadband frequency output. The built-in filter and impedance matching circuit minimizes the need for external components while ensuring consistent output power stability. The oscillator's output is readily connectable to a 50 $\Omega$  load. Encased in a compact 7mm $\times$ 9mm $\times$ 2mm package, the device is designed for ease of integration and space efficiency.

## Pin Description

| Pin | Symbol | Function  | Pin | Symbol | Function       |
|-----|--------|-----------|-----|--------|----------------|
| 1   | RFOUT  | RF output | 5   | VT     | Tune voltage   |
| 2   | GND    | Ground    | 6   | GND    | Ground         |
| 3   | GND    | Ground    | 7   | VCC    | Supply voltage |
| 4   | GND    | Ground    | 8   | GND    | Ground         |

## Absolute Maximum Ratings

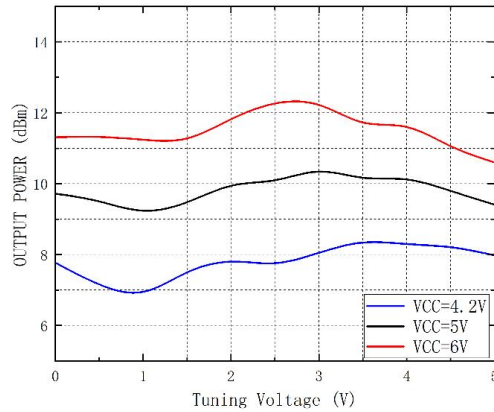
| Parameter                     | Rating    | Unit | Parameter            | Rating     | Unit |
|-------------------------------|-----------|------|----------------------|------------|------|
| Tune Voltage                  | 0 ~ 5     | V    | Storage Temperature  | -40 ~ +150 | °C   |
| Supply Voltage                | 4.2~ 6    | V    | Relative Humidity    | <80%       | RH   |
| Operating Ambient Temperature | -40 ~ +85 | °C   | Atmospheric Pressure | 85 ~ 106   | KPa  |

## Electrical Specifications (T=+25°C, VCC=5V)

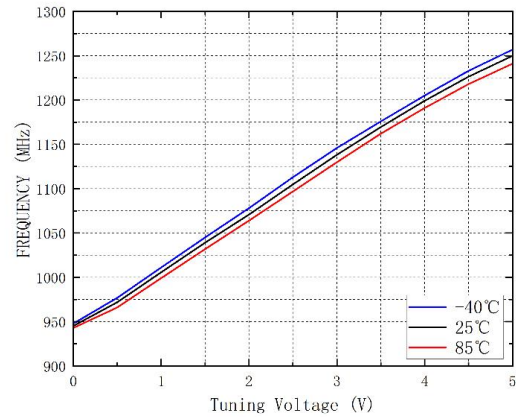
| Specification       |      |      |      | Unit   | Condition |
|---------------------|------|------|------|--------|-----------|
|                     | Min. | Typ. | Max. |        |           |
| Lower Frequency     | 935  | 945  | 955  | MHz    | VT=0V     |
| Upper Frequency     | 1240 | 1250 | 1260 | MHz    | VT=5V     |
| Power Output        |      | +9   |      | dBm    | VCC=5V    |
| Tune Voltage        | 0    |      | 5    | V      |           |
| Supply Current      |      | 18   |      | mA     | Open&Load |
| Leakage Current(VT) |      |      | 10   | μA     | VT=5V     |
| Pushing (VCC)       |      | 3    |      | MHz/V  | VT=5V     |
| Pulling (VSWR)      |      | 4    |      | MHz pp | VSWR=3:1  |
| Drift Rate          |      | 0.04 | 0.1  | MHz/°C |           |
| Load Impedance      |      | 50   |      | Ω      |           |
| Harmonic(2nd)       |      |      | -20  | dBc    |           |
| Harmonic(3rd)       |      |      | -30  | dBc    |           |

## Typical Performance

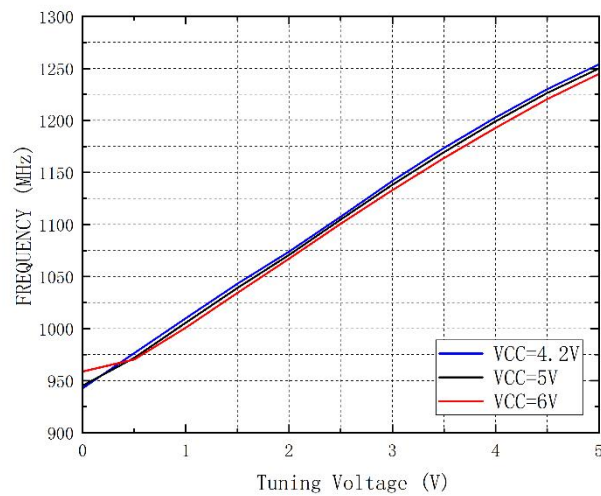
Frequency vs. Tuning Voltage vs. Operating Voltage



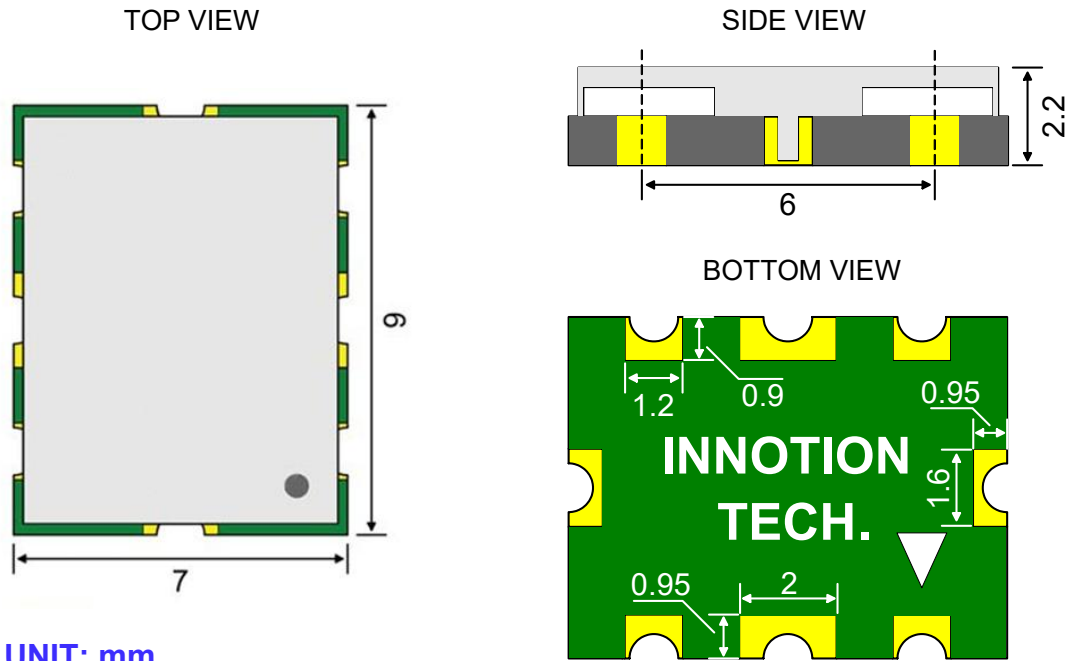
Frequency vs. Tuning Voltage vs. Temperature



Power vs. Tuning Voltage vs. Operating Voltage



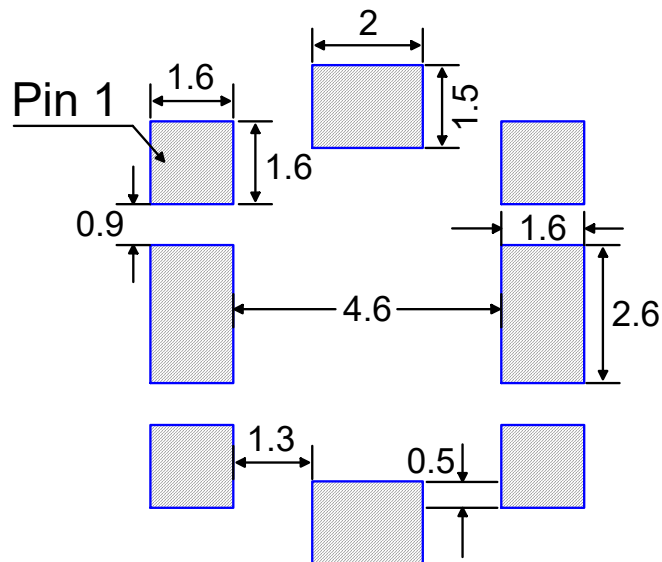
### Outline Drawing



**UNIT: mm**

**TOLERANCE:  $\pm 0.1$ mm**

### PCB Land Pattern



**UNIT: mm**