

UPC8204TK

ABSOLUTE MAXIMUM RATINGS¹ (T_A = 25°C)

| SYMBOLS | PARAMETERS | UNITS | RATINGS |
|------------------|--|-------|-------------|
| V _{CC} | Supply Voltage T _A = 25°C | V | 3.6 |
| I _{CC} | Total Circuit Current T _A = 25°C | mW | 30 |
| V _{AGC} | Gain Control Voltage T _A = 25°C | V | 3.6 |
| P _D | Power Dissipation T _A = 85°C (note) | mW | 203 |
| T _A | Operating Ambient Temperature | °C | -40 to +85 |
| T _{STG} | Storage Temperature | °C | -55 to +150 |
| P _{IN} | Input Power | dBm | +5 |

Notes:

1. Mounted on a 50 x 50 x 1.6 mm epoxy glass PWB (T_A = +85°C).

RECOMMENDED OPERATING CONDITIONS

| SYMBOLS | PARAMETERS | UNITS | MIN | TYP | MAX |
|------------------|-------------------------------|-------|-----|-----|-----|
| V _{CC} | Supply Voltage | V | 2.7 | 3.0 | 3.3 |
| T _A | Operating Ambient Temperature | °C | -40 | +25 | +85 |
| f _{in} | Operating Frequency Range | GHz | 0.8 | – | 2.5 |
| V _{AGC} | Gain Control Voltage | V | 0 | – | 3.3 |

SERIES PRODUCTS

| Parameter Part No. | I _{CC} (mA) | 0.95 GHz output port matching frequency | | | 1.44 GHz output port matching frequency | | | 1.9 GHz output port matching frequency | | | 2.4 GHz output port matching frequency | | |
|-----------------------|-------------------------|--|-------------------------|------------------------|--|-------------------------|------------------------|---|-------------------------|------------------------|---|-------------------------|------------------------|
| | | G _{PMAX} (dB) | G _{CR} (dB) | N _F (dB) | G _{PMAX} (dB) | G _{CR} (dB) | N _F (dB) | G _{PMAX} (dB) | G _{CR} (dB) | N _F (dB) | G _{PMAX} (dB) | G _{CR} (dB) | N _F (dB) |
| UPC8119T | 11.0 | 12.5 | 50 | 8.5 | 13.0 | 45 | 7.5 | (12.5) | (22) | (7.2) | – | – | – |
| UPC8120T | 11.0 | 13.0 | 50 | 9.0 | 13.5 | 45 | 7.5 | (13.0) | (22) | (7.3) | – | – | – |
| UPC8204TK | 11.5 | – | – | – | – | – | – | 14.0 | 40 | 7.5 | 14.0 | 35 | 7.5 |

Note:

1. Typical performance. Please refer to Electrical Characteristics in detail.

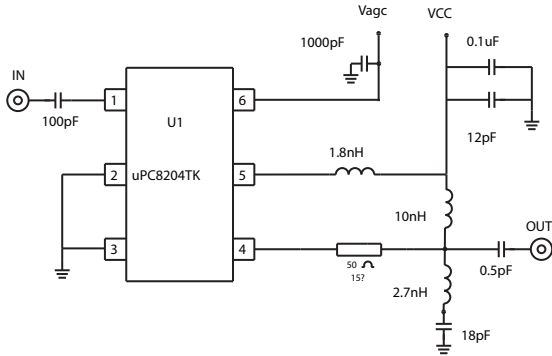
(.): Reference

PIN FUNCTIONS

| Pin No. | Symbol | Applied Voltage | Pin Voltage | Description | Equivalent Circuit |
|---------|------------------|--|-------------|--|--------------------|
| 1 | INPUT | — | 1.2 | RF input pin This pin should be coupled with capacitor (eg 1000 pF) for DC cut. Input return loss can be improved with external impedance matching circuit. | |
| 2 3 | GND | 0 | — | Ground pin. This pin should be connected to system ground with minimum inductance. Ground pattern on the board should be formed as wide as possible. Ground pins must be connected together with wide ground pattern to decrease impedance difference. | |
| 4 | OUTPUT | Voltage as same as V _{CC} through external inductor | — | RF output pin. This pin is designed as open collector of high impedance. This pin must be externally equipped with matching circuits. | |
| 5 | V _{CC} | 2.7~3.3 | — | Supply voltage pin. this pin must be equipped with bypass capacitor (eg 1000 pF) to minimize its RF impedance. | |
| 6 | V _{AGC} | 0~3.3 | — | Gain control pin. | |

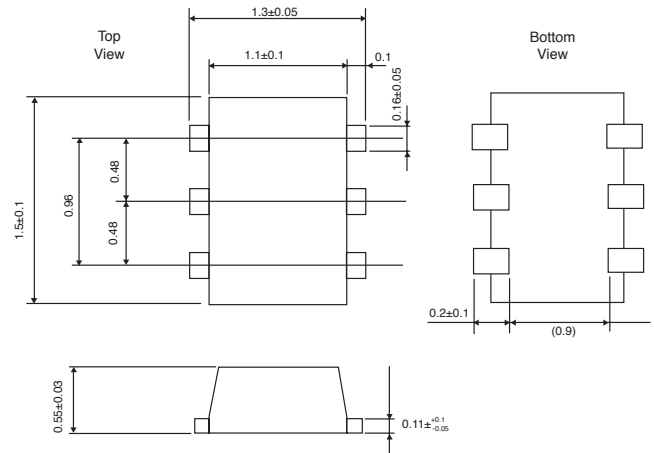
APPLICATION CIRCUIT

f = 2.4 GHz

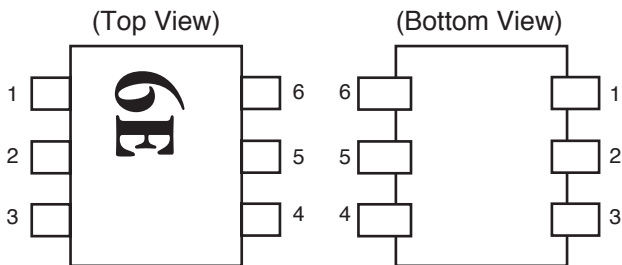


OUTLINE DIMENSIONS (Units in mm)

6-PIN LEAD-LESS MINIMOLD



PIN CONNECTIONS



| PIN NO. | PIN NAME |
|---------|----------|
| 1 | INPUT |
| 2 | GND |
| 3 | GND |
| 4 | OUTPUT |
| 5 | VCC |
| 6 | VAGC |

ORDERING INFORMATION

| PART NUMBER | PACKAGE | PACKING INFORMATION |
|----------------|---------|--------------------------|
| UPC8204TK-E2-A | TK | 6-pin lead-less minimold |

Note:
To order evaluation samples, contact sales office
(p/n: UPC8204TK).

Life Support Applications

These NEC products are not intended for use in life support devices, appliances, or systems where the malfunction of these products can reasonably be expected to result in personal injury. The customers of CEL using or selling these products for use in such applications do so at their own risk and agree to fully indemnify CEL for all damages resulting from such improper use or sale.

Subject: Compliance with EU Directives

CEL certifies, to its knowledge, that semiconductor and laser products detailed below are compliant with the requirements of European Union (EU) Directive 2002/95/EC Restriction on Use of Hazardous Substances in electrical and electronic equipment (RoHS) and the requirements of EU Directive 2003/11/EC Restriction on Penta and Octa BDE.

CEL Pb-free products have the same base part number with a suffix added. The suffix –A indicates that the device is Pb-free. The –AZ suffix is used to designate devices containing Pb which are exempted from the requirement of RoHS directive (*). In all cases the devices have Pb-free terminals. All devices with these suffixes meet the requirements of the RoHS directive.

This status is based on CEL’s understanding of the EU Directives and knowledge of the materials that go into its products as of the date of disclosure of this information.

| Restricted Substance per RoHS | Concentration Limit per RoHS (values are not yet fixed) | Concentration contained in CEL devices | |
|-------------------------------|---|--|-----|
| | | -A | -AZ |
| Lead (Pb) | < 1000 PPM | Not Detected | (*) |
| Mercury | < 1000 PPM | Not Detected | |
| Cadmium | < 100 PPM | Not Detected | |
| Hexavalent Chromium | < 1000 PPM | Not Detected | |
| PBB | < 1000 PPM | Not Detected | |
| PBDE | < 1000 PPM | Not Detected | |

If you should have any additional questions regarding our devices and compliance to environmental standards, please do not hesitate to contact your local representative.

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