



RBA5104

Preliminary

LINEAR INTEGRATED CIRCUIT

FAN REMOTE CONTROL ENCODER

DESCRIPTION

UTC RBA5104 is a remote control encoder mainly used for Fan remote control, air cleaner, humidifier, heater and other electrical home appliance remote control application. 2 bits custom code options and maximum 8 input channels offers great freedom in application. UTC RBA5104 uses a special coding technique to increase noise immunity to a very great extent.

FEATURES

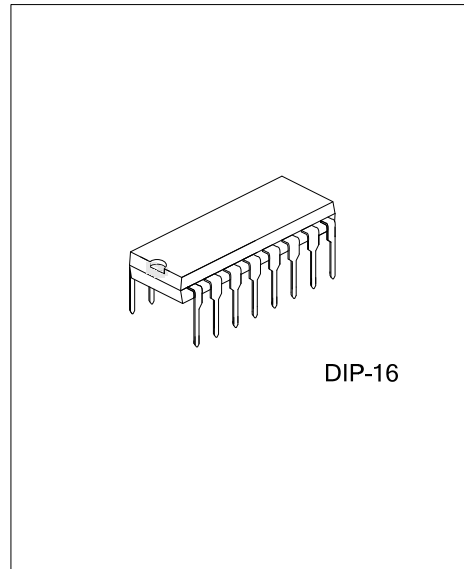
- * Wide operation voltage: $V_{CC}=2.2\sim 4.0V$
- * Noise immunity technique
- * 2 bits custom code
- * 8 input channels maximum
- * Uses 455kHz crystal oscillator
- * Key-in oscillation, reduce static current dissipation.
- * 38kHz carrier transmits output.
- * LED indicates work state

ORDERING INFORMATION

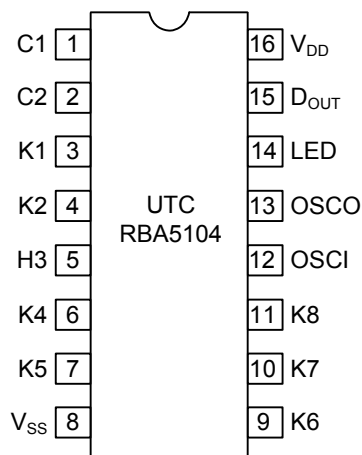
| Ordering Number | | Package | Packing |
|-----------------|----------------|---------|---------|
| Lead Free | Halogen Free | | |
| RBA5104L-D16-T | RBA5104G-D16-T | DIP-16 | Tube |

Note: xx: Output Voltage, refer to Marking Information.

| | |
|-----------------------|------------------------------------------------------------------------------------|
| <p>RBA5104G-D16-T</p> | <p>(1) T: Tube</p> <p>(2) D16: DIP-16</p> <p>(3) L: Lead Free, G: Halogen Free</p> |
|-----------------------|------------------------------------------------------------------------------------|



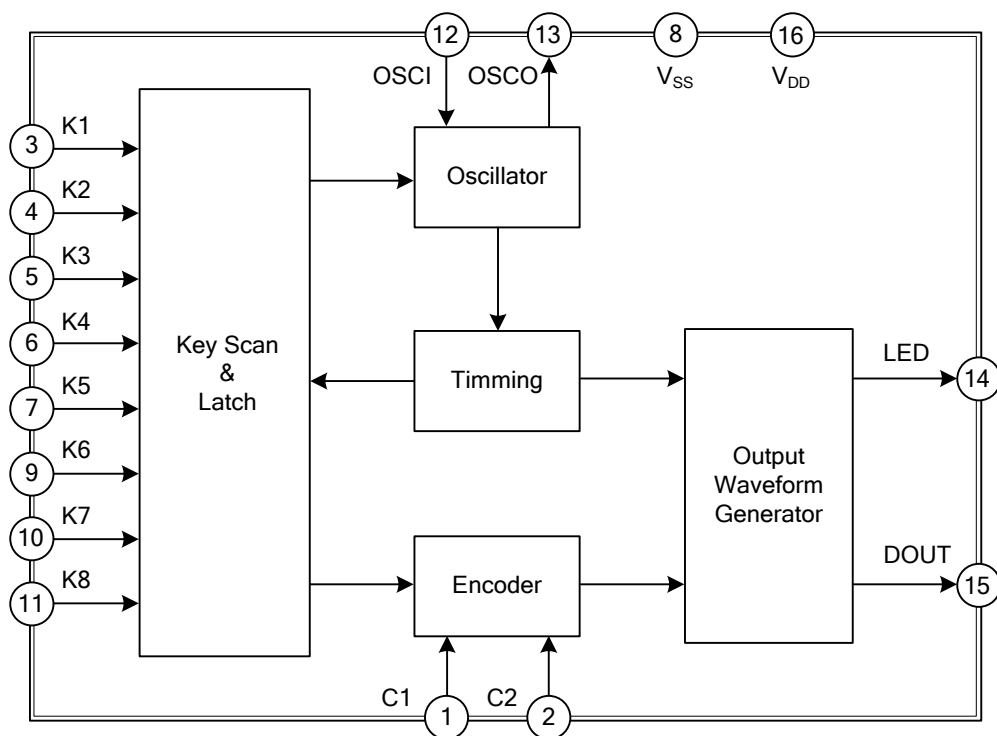
PIN CONFIGURATION



PIN DESCRIPTION

| PIN NO. | PIN NAME | DESCRIPTION |
|---------|-----------------|-------------------------------------------------------------------------------------------|
| 1~2 | C1, C2 | Custom Code Option: Built In Pull-Up Resistor, Grounding Denote "0", Floating Denote "1". |
| 3~7 | K1~K5 | Key Input Pins, Built In Pull-Up Resistor. |
| 8 | V _{SS} | Negative Power Supply. |
| 9~11 | K6~K8 | Key Input Pins, Built In Pull-Up Resistor. |
| 12 | OSCI | 455kHz Oscillator Input Pin. |
| 13 | OSCO | 455kHz Oscillator Output Pin. |
| 14 | LED | LED Driver Output Indication |
| 15 | DOUT | Code Data Output (Contain 38kHz Carrier Signal) |
| 16 | V _{DD} | Positive Power Supply. |

BLOCK DIAGRAM



■ **ABSOLUTE MAXIMUM RATING** ($T_A=25^\circ\text{C}$)

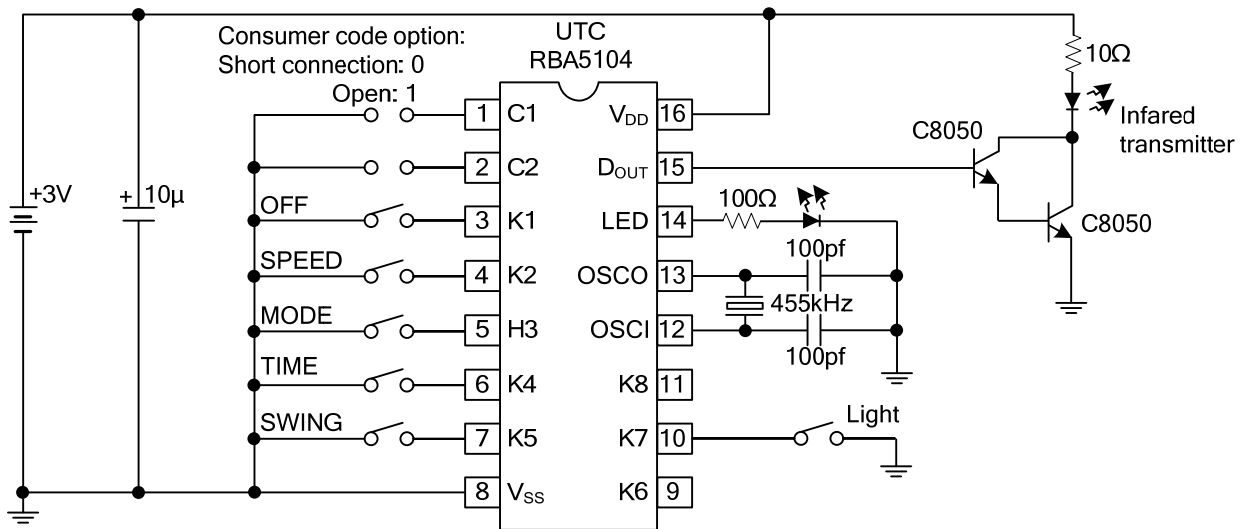
| PARAMETER | SYMBOL | RATINGS | UNIT |
|-----------------------|-----------|-------------------------------|------------------|
| Supply Voltage | V_{DD} | -0.3~6.0 | V |
| Input/Output Voltage | V_{IN} | $V_{SS}-0.3V\sim V_{DD}+0.3V$ | V |
| Power Dissipation | P_D | 500 | mW |
| Operating Temperature | T_{OPR} | -10 ~ +70 | $^\circ\text{C}$ |
| Storage Temperature | T_{STG} | -40~+125 | $^\circ\text{C}$ |

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ **DC ELECTRICAL CHARACTERISTICS** ($T_A=25^\circ\text{C}$, $V_{DD}=3V$, unless other specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|----------------------------|-----------|-----------------------------------------------|-------------|-------|-------------|---------------|
| Supply Voltage | V_{DD} | | 2.0 | 3.0 | 4.0 | V |
| Static Power Dissipation | I_{SB} | no load, oscillation is stopped, $C1=C2=1$ | | 0.1 | | μA |
| | | no load, oscillation is stopped, $C1=C2=0$ | | 1.8 | | μA |
| DOUT Output High Current | I_{OH} | $V_{OH}=2.7V$ | | 2.5 | | mA |
| DOUT Output Low Current | I_{OL} | $V_{OL}=0.3V$ | | -0.74 | | mA |
| High Input Voltage | V_{IH} | | $0.7V_{DD}$ | | V_{DD} | V |
| Low Input Voltage | V_{IL} | | 0 | | $0.3V_{DD}$ | V |
| LED High Output Current | I_{OH} | $V_{OH}=2.7V$ | | 2.5 | 10 | mA |
| LED Low Output Current | I_{OL} | $V_{OL}=0.3V$ | | -1.0 | | mA |
| Oscillation Frequency | f_{OSC} | | | 455 | | kHz |
| Pull-up resistor at C1, C2 | R_C | $V_{IN}=0V$ | | 4 | | M Ω |
| Pull-up resistor at K1~K8 | R_i | $V_{IN}=0V$ | | 250 | | K Ω |

■ TYPICAL APPLICATION CIRCUIT



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