



## 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

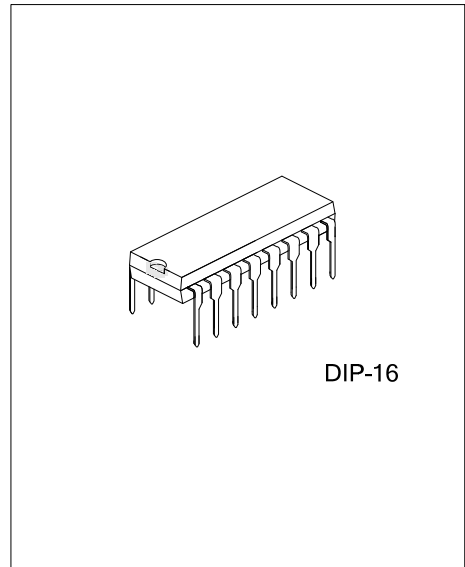
- \* Wide operation voltage:  $V_{CC}=2.2\sim 4.0V$
- \* Noise immunity technique
- \* 2 bits custom code
- \* 8 input channels maximum
- \* Uses 455kHz crystal oscillator
- \* Key-in oscillation, reduce static current dissipation.
- \* 38kHz carrier transmits output.
- \* LED indicates work state

#### ORDERING INFORMATION

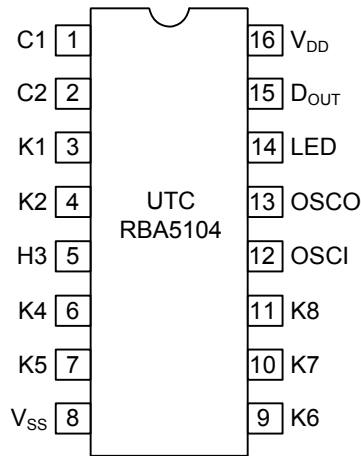
Ordering Number		Package	Packing
Lead Free	Halogen Free		
RBA5104L-D16-T	RBA5104G-D16-T	DIP-16	Tube

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

<p>RBA5104G-D16-T</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Halogen Free</p>	<p>(1) T: Tube</p> <p>(2) D16: DIP-16</p> <p>(3) L: Lead Free, G: Halogen Free</p>
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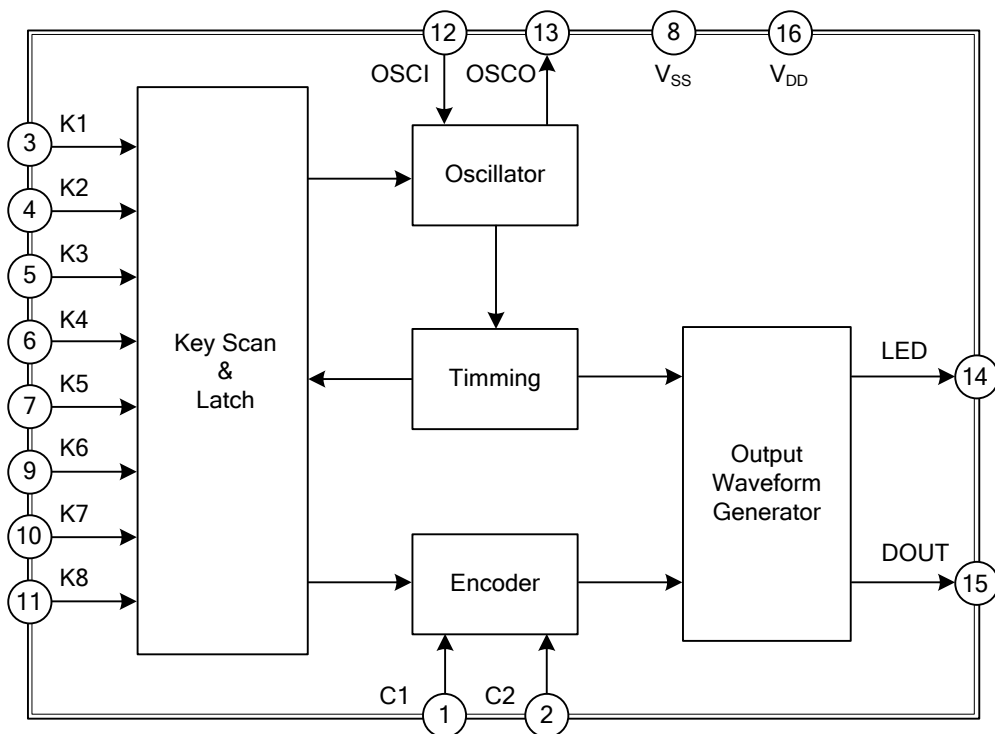
■ PIN CONFIGURATION



■ 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 <sub>SS</sub>	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 <sub>DD</sub>	Positive Power Supply.

■ BLOCK DIAGRAM



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

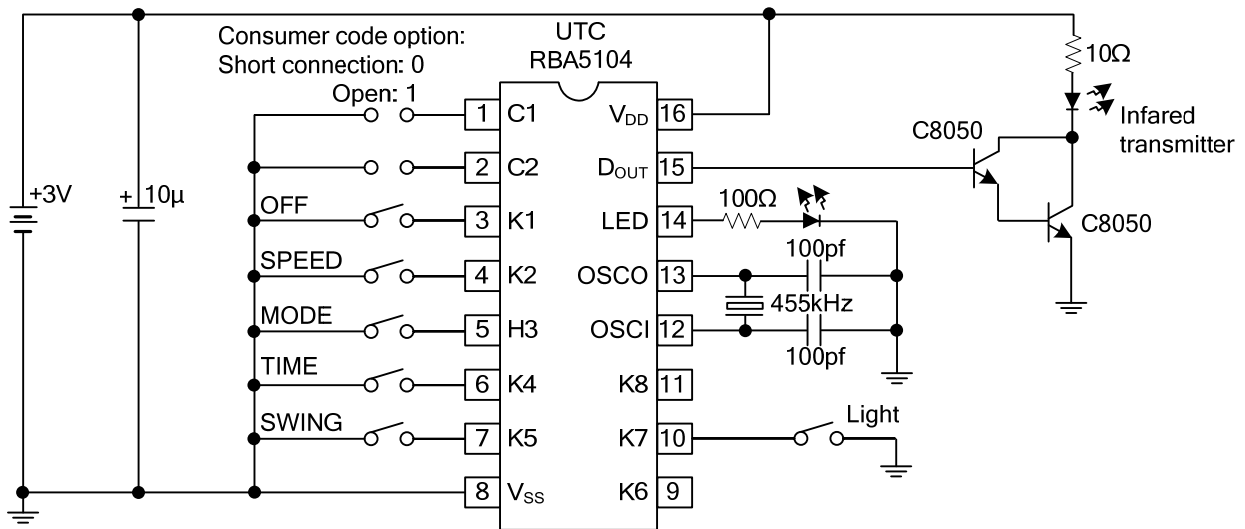
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V_{DD}$	-0.3~6.0	V
Input/Output Voltage	$V_{IN}$	$V_{SS}-0.3V\sim V_{DD}+0.3V$	V
Power Dissipation	$P_D$	500	mW
Operating Temperature	$T_{OPR}$	-10 ~ +70	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-40~+125	$^{\circ}\text{C}$

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 ( $T_A=25^{\circ}\text{C}$ ,  $V_{DD}=3\text{V}$ , 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		$\mu\text{A}$
		no load, oscillation is stopped, $C1=C2=0$		1.8		$\mu\text{A}$
DOUT Output High Current	$I_{OH}$	$V_{OH}=2.7\text{V}$		2.5		mA
DOUT Output Low Current	$I_{OL}$	$V_{OL}=0.3\text{V}$		-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	$I_{OH}$	$V_{OH}=2.7\text{V}$		2.5	10	mA
LED Low Output Current	$I_{OL}$	$V_{OL}=0.3\text{V}$		-1.0		mA
Oscillation Frequency	$f_{OSC}$			455		kHz
Pull-up resistor at C1, C2	$R_C$	$V_{IN}=0\text{V}$		4		$\text{M}\Omega$
Pull-up resistor at K1~K8	$R_i$	$V_{IN}=0\text{V}$		250		$\text{K}\Omega$

■ TYPICAL APPLICATION CIRCUIT



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