

AN5026K

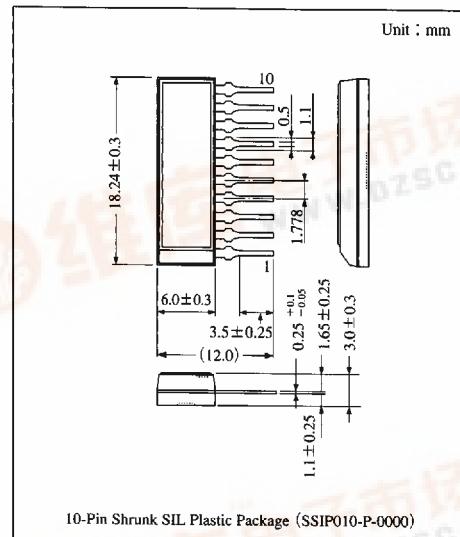
Remote Control Receiving IC

■ Overview

The AN5026K is an integrated circuit for preamplifier of infrared remote control system. It consists of a first amplifier, a limiter amplifier, BPF, a signal waveform detector, a wave shaping circuit, and etc.

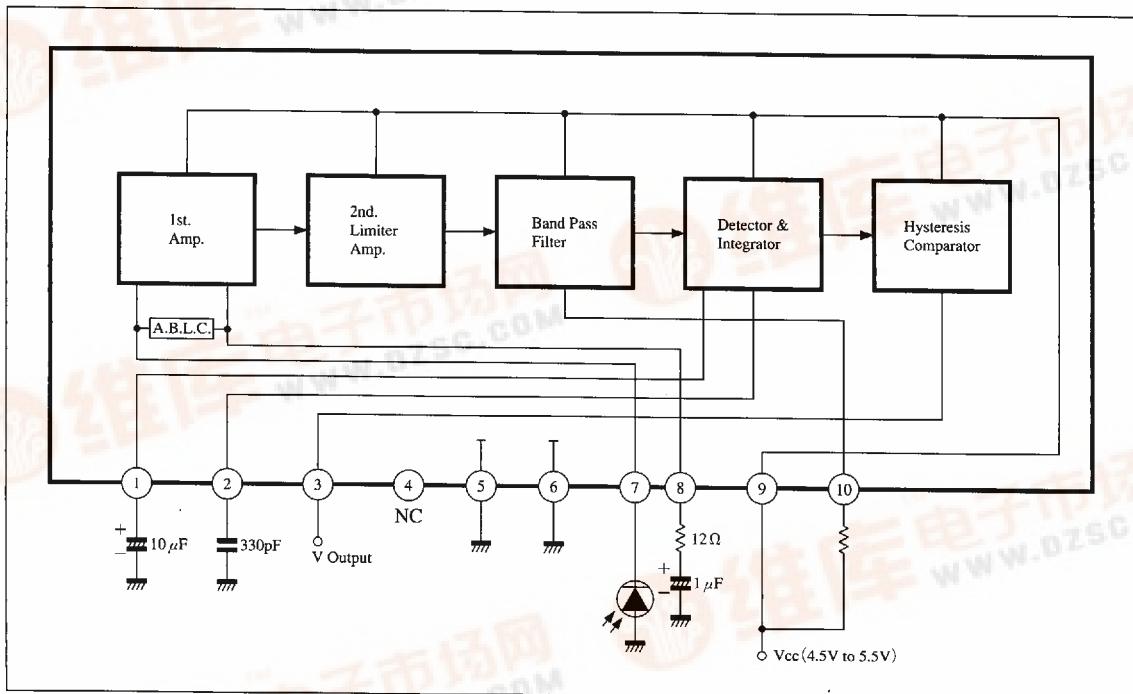
■ Features

- Incorporating band-pass filter
(possible of resonant frequency-adjustment, 30 to 60kHz, by external resistor)
- Possible of direct connection of LED to input.
- Possible of direct connection of TTL or CMOS to output.
- Output logic is active "Low"



ICs for
TV

■ Block Diagram



■ Pin Descriptions

| Pin No. | Pin name | Pin No. | Pin name |
|---------|-----------------|---------|-----------------------|
| 1 | Detector cap. | 6 | Input GND |
| 2 | Integrator cap. | 7 | Input |
| 3 | Output | 8 | 1st amp. gain control |
| 4 | NC | 9 | Supply voltage |
| 5 | Output GND | 10 | Freq. control |

■ Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

| Parameter | Symbol | Rating | Unit |
|-------------------------------|-----------|------------------|------|
| Supply voltage | V_{CC} | 6.0 | V |
| | V_{1-6} | 0 to V_{9-6} | V |
| Circuit voltage | V_{2-6} | 0.5 to V_{9-6} | V |
| | V_{7-6} | 0 to V_{9-6} | V |
| | V_{8-6} | 0 to V_{9-6} | V |
| | I_{CC} | 10 | mA |
| Supply current | I_3 | -0.05 to +2.0 | mA |
| | I_{10} | 0 to 0.1 | mA |
| Power dissipation | P_D | 60 | mW |
| Operating ambient temperature | T_{opr} | -20 to +70 | °C |
| Storage temperature | T_{sig} | -55 to +150 | °C |

■ Electrical Characteristics ($T_a=25^\circ\text{C}$)

| Parameter | Symbol | Condition | min | typ | max | Unit |
|---------------------------|----------------|---|------|------|------|------|
| Circuit current | I_9 * | $V_{9-6}=5.0\text{V}$ | 1.2 | 1.6 | 2.2 | mA |
| Pin② terminal voltage | V_{2-6} * | $V_{1-6}=2.6\text{V}$ | 0.6 | 0.9 | 1.2 | V |
| Pin⑦ terminal voltage | V_{7-6} * | $V_{9-6}=5.5\text{V}$ | 2.2 | 2.5 | 2.8 | V |
| Output voltage low level | $V_{3-6(1)}$ * | $V_{9-6}=5.5\text{V}$, $V_{2-6}=3.4\text{V}$ | — | 50 | 400 | mV |
| Output voltage high level | $V_{3-6(2)}$ * | $V_{9-6}=5.5\text{V}$, $V_{2-6}=1.4\text{V}$ | 5.3 | 5.5 | — | V |
| Voltage gain | A_v | $v_{in}=20\ \mu\text{V}_{\text{p-p}}$, $f_{in}=f_0 : 56.9\text{kHz}$ | 81 | 86 | 91 | dB |
| Selectivity | A_{pQ} | $v_{in}=20\ \mu\text{V}_{\text{p-p}}$, $f_{in}=f_0 \pm 4\text{kHz}$ | -8.0 | -5.0 | -2.0 | dB |

* Test Conditions

| Parameter | Symbol | Test pin No. | Pin No. | | | | | | | | | |
|---------------------------|--------------|--------------|---------|------|---|----|----|----|------|------|------|--------------------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Circuit current | I_9 | 9 | to ⑨ | — | — | 0V | 0V | 0V | 2.3V | 2.0V | 5V | $150\text{k}\Omega$ to ⑨ |
| Pin② terminal voltage | V_{2-6} | 2 | 2.6V | — | — | 0V | 0V | 0V | 2.3V | 2.0V | 5.5V | $150\text{k}\Omega$ to ⑨ |
| Pin⑦ terminal voltage | V_{7-6} | 7 | to ⑨ | 3.5V | — | 0V | 0V | 0V | — | 2.0V | 5.5V | 0V |
| Output voltage low level | $V_{3-6(1)}$ | 3 | to ⑨ | 3.4V | — | 0V | 0V | 0V | 2.3V | 2.0V | 5.5V | 0V |
| Output voltage high level | $V_{3-6(2)}$ | 3 | to ⑨ | 1.4V | — | 0V | 0V | 0V | 2.3V | 2.0V | 5.5V | 0V |