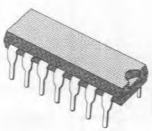
SGS-THOMSON MICROELECTRONICS

TDA8162

INFRARED REMOTE CONTROL RECEIVER

ADVANCE DATA

- LOW SUPPLY VOLTAGE (V_S = 5V)
- LOW CURRENT CONSUMPTION (I_S = 4mA)
- INTERNAL 5.5V SHUNT REGULATOR
- INPUT STAGE WITH GOOD REJECTION AT LOW FREQUENCY
- SELECTIVE AMPLIFIER
- LARGE INPUT DYNAMIC RANGE
- HIGH INPUT SENSITIVITY
- A.G.C. FACILITY



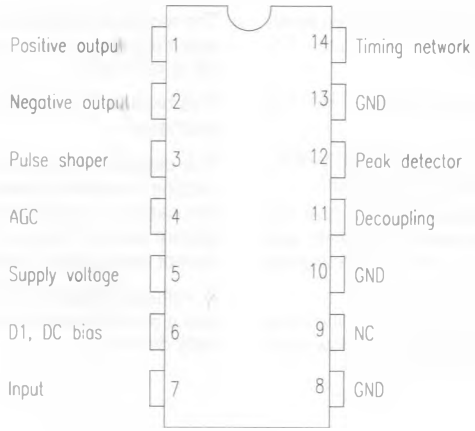
DIP14
(Plastic Package)

ORDER CODE : TDA8162

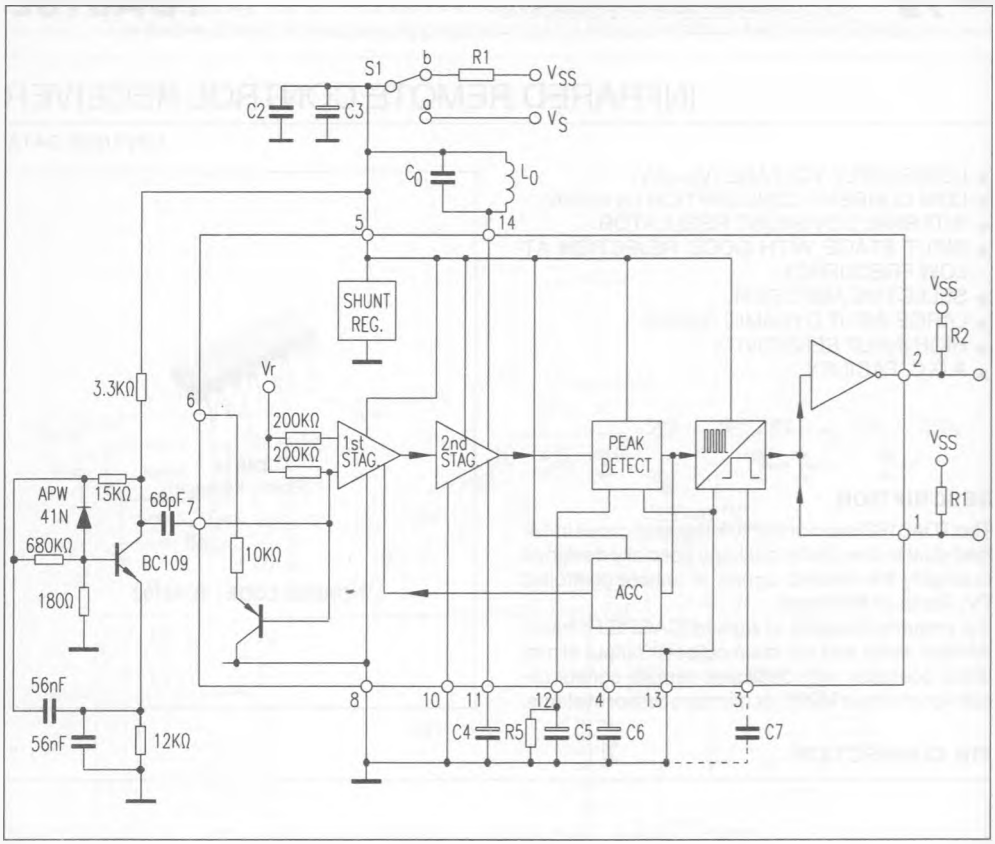
DESCRIPTION

The TDA8162 is a monolithic integrated circuit in 14-lead dual in line plastic package specially designed to amplify the infrared signals in remote controlled TV, Radio or VCR sets.
It is properly designed to work in "CARRIER" transmission mode and the open collector output allows direct operation with dedicated remote control circuit (for example M206) or microprocessor systems.

PIN CONNECTION



BLOCK DIAGRAM



The infrared light received from D1 generates an alternate current that, through the transistor T1, comes into the device at pin 7.

The capacitor C1 and an internal network filter out the low frequency noise.

The first stage, the gain of which is controlled by AGC, shows a maximum voltage gain of about 30dB.

The second stage is a selective amplifier (the frequency is generally included between 30kHz and 40kHz), with an voltage gain of about 50dB, loaded by Lo, Co.

A sensitive peak detector detects the amplified signal, two open collector outputs (pin 1, 2) allow positive and negative signals respectively.

The recovered signal drives the AGC block that controls the gain of the first stage when too strong signal is received.

This block (AGC) is a block at fast charge and slow discharge.

The detected information can be reshaped by connecting a suitable capacitor at pin 3 ; in such a way the carrier is integrated and the outputs become square wawes that can directly drive one microprocessor (avoiding a digital filter otherwise needed).

A voltage Regulator is also integrated, when you use a 5V of alimentation, this regulator is automatically disabled.

ELECTRICAL CHARACTERISTICS

Refer to the test circuit ; S1 to "a" ; V_{ss} = 12V ; V_s = 5V ; fo = 38.43kHz, T_{amb} = 25°C (unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_s	Supply Voltage	Applied between Pin 5 and 8	4	5	5.25	V
I_s	Supply Current (pin 5)	V_s = 5V V_i = 0V		4	8	mA
V_5	Stabilized Voltage at Pin 5	I_5 = 8mA S_1 to "b" ;		5.5		V
	First Stage Voltage Gain	Pin 4 to GND		30		dB
	2nd Stage Voltage Gain	V_{14} = 500mV$_{PP}$		50		dB
	2nd Stage Bandwidth	Co = 9.53nF Lo : L_s = 1.8mH ; R_s = 24.5Ω		2.2		KHZ
	Input Voltage Sensitivity (pin 7)	For 500mV$_{PP}$ at Pin 14		100		μV$_{PP}$
	Input Current Sensitivity (pin 7)	For 500mV$_{PP}$ at Pin 14		1		nA$_{PP}$
	Input Impedance			100		kΩ
	AGC Range		80			dB
	Low Frequency Rejection at the Input Stage	C_1 = 2.2nF, f = 100Hz ;		30		dB
	Peak Detector Sensitivity (pin 12)	Full Swing at Pin 1 and at Pin 2		150		mV
	Noise Signal at Pin 14	V_{in} = 0		150		mV$_{PP}$
	Threshold Comparator			500		mV$_{PP}$

TYPICAL APPLICATION