

**INFRARED REMOTE CONTROL RECEIVER**

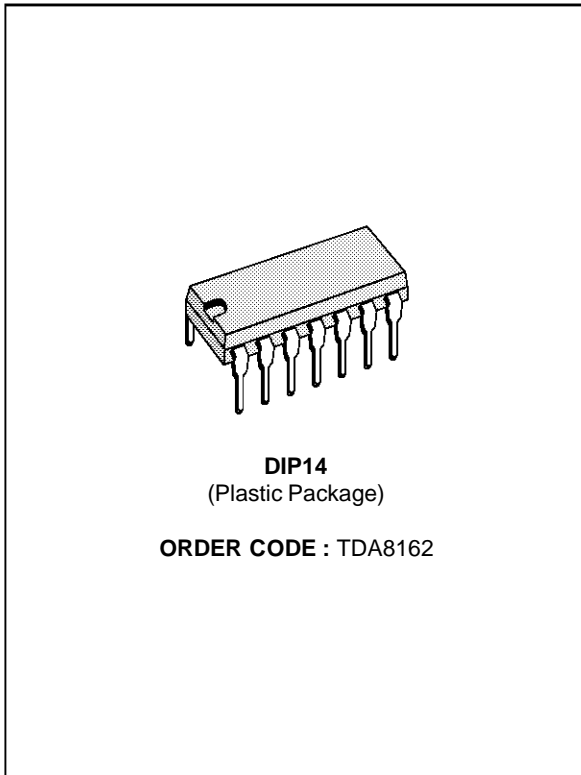
ADVANCE DATA

- 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

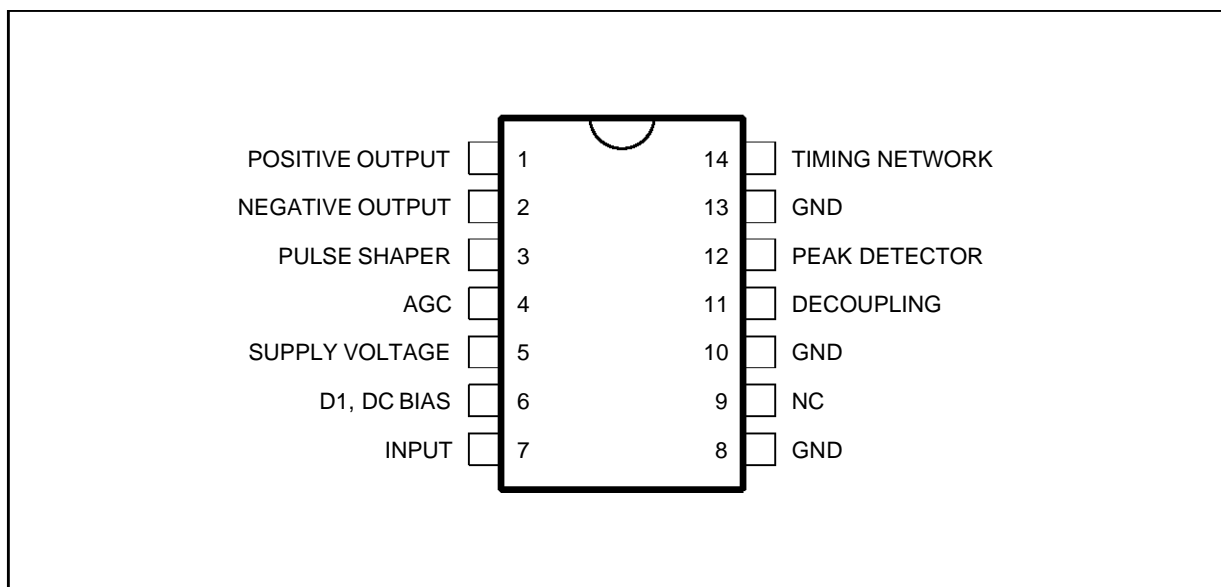
**DESCRIPTION**

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 ST6 Family).

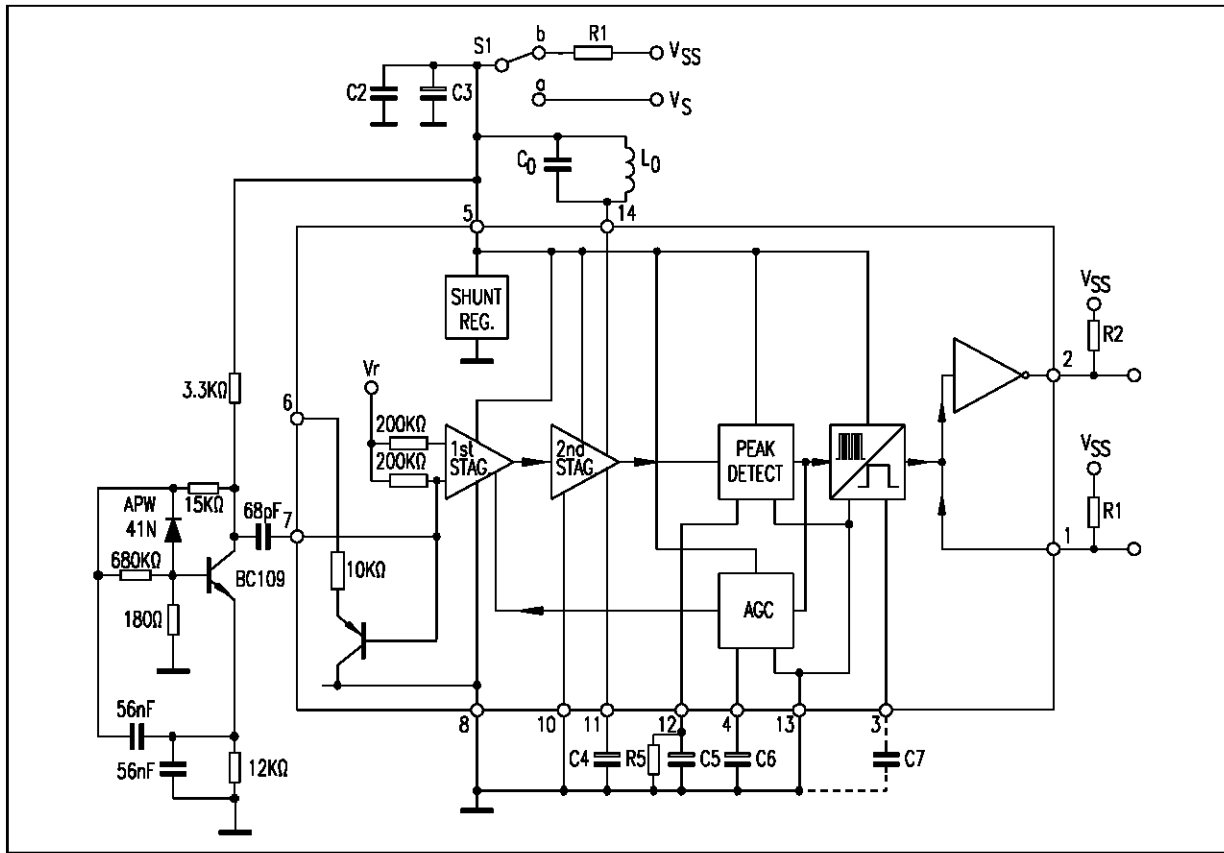


**PIN CONNECTION**



8162-01.EPS

BLOCK DIAGRAM



8162-02.EPS

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  $L_0$ ,  $C_0$ .

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 waves that can directly drive one micro-processor (avoiding a digital filter otherwise needed).

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

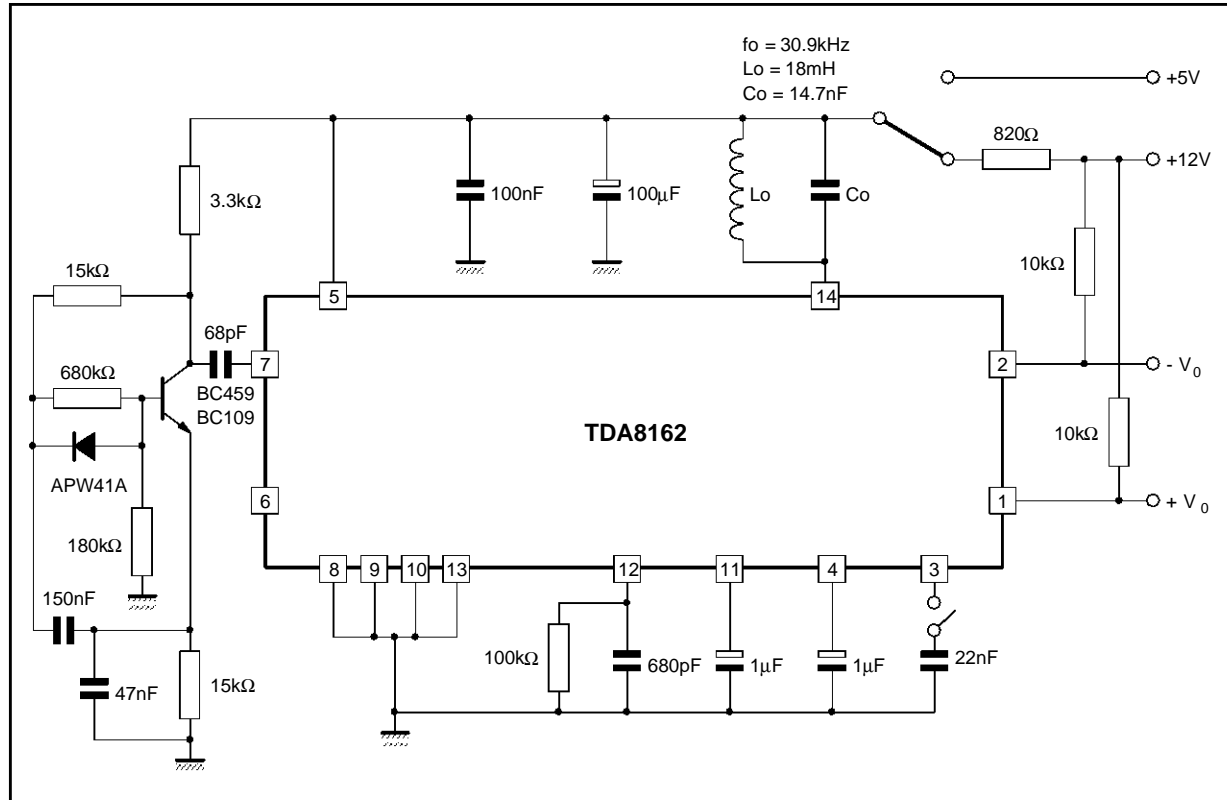
**ELECTRICAL CHARACTERISTICS**

(Refer to the test circuit ; S1 to "a" ;  $V_{SS} = 12V$  ;  $V_S = 5V$  ;  $f_o = 38.43kHz$ ,  
 $T_{amb} = 25^\circ C$ , 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	$C_o = 9.53nF$ $L_o : L_s = 1.8mH, R_s = 24.5\Omega$		2.2		kHz
	Input Voltage Sensitivity (Pin 7)	For $500mV_{PP}$ at Pin 14		100		$\mu V_{PP}$
	Input Current Sensitivity (Pin 7)	For $500mV_{PP}$ at Pin 14		1		$nA_{PP}$
	Input Impedance			100		$k\Omega$
	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		$mV_{PP}$

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**TYPICAL APPLICATION**

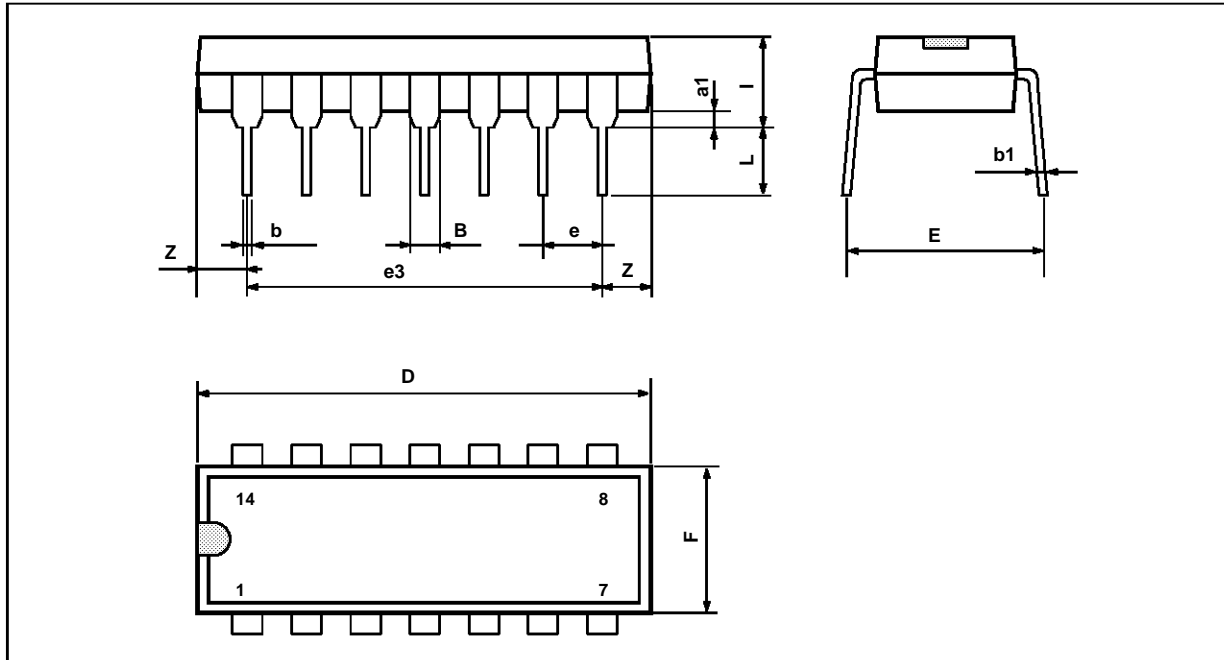


8162-03.EPS

# TDA8162

## PACKAGE MECHANICAL DATA

14 PINS - PLASTIC DIP



PM-DIP14.EPS

Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
a1	0.51			0.020		
B	1.39		1.65	0.055		0.065
b		0.5			0.020	
b1		0.25			0.010	
D			20			0.787
E		8.5			0.335	
e		2.54			0.100	
e3		15.24			0.600	
F			7.1			0.280
i			5.1			0.201
L		3.3			0.130	
Z	1.27		2.54	0.050		0.100

DIP14.TBL

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