

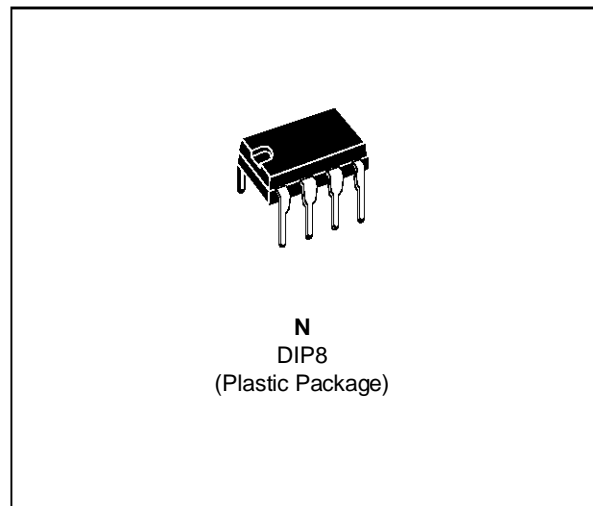
**PREAMPLIFIER FOR INFRARED  
REMOTE CONTROL SYSTEMS**

**DESCRIPTION**

The TDA2320 is a monolithic integrated circuit in Dip package especially designed to amplify the IR signal in remote controlled TV or radio sets. It directly interfaces the digital control circuitry.

The TDA2320 incorporates a two-stage amplifier with excellent sensitivity and high noise immunity. It can work with a single 5V supply voltage and flash or carrier transmission modes as provided for example by the M709A/M710A/MOS transmitters.

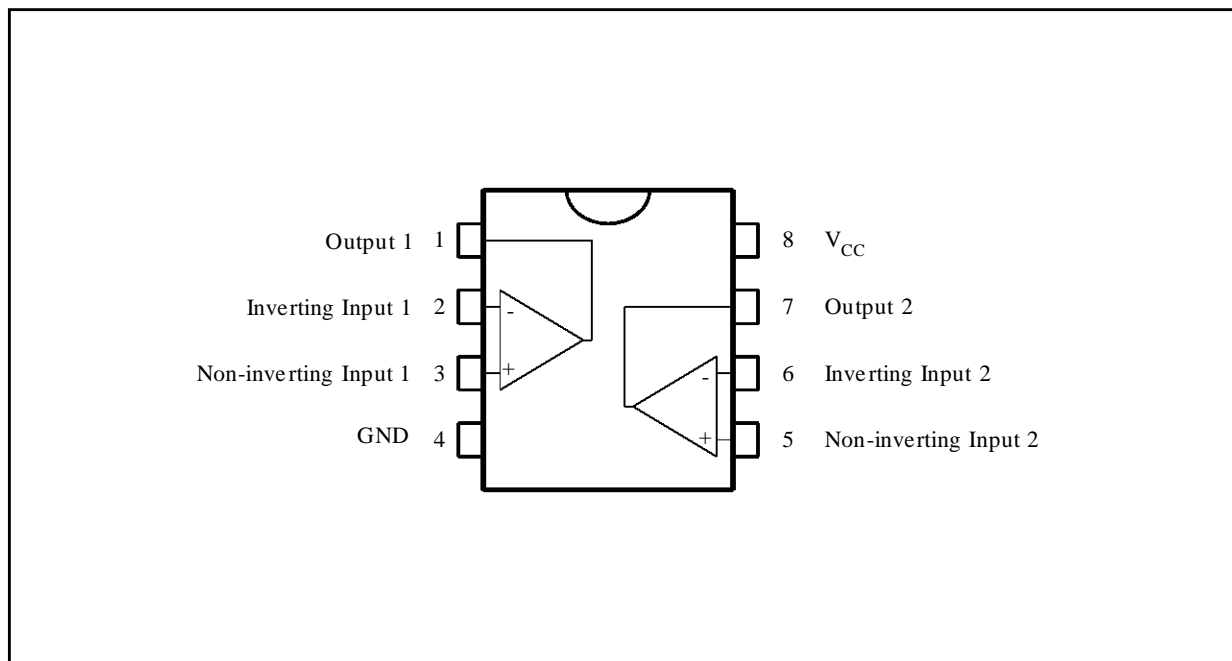
The TDA2320 is particularly intended to be used in conjunction with the M104 and M206 + M3870 remote control receivers.



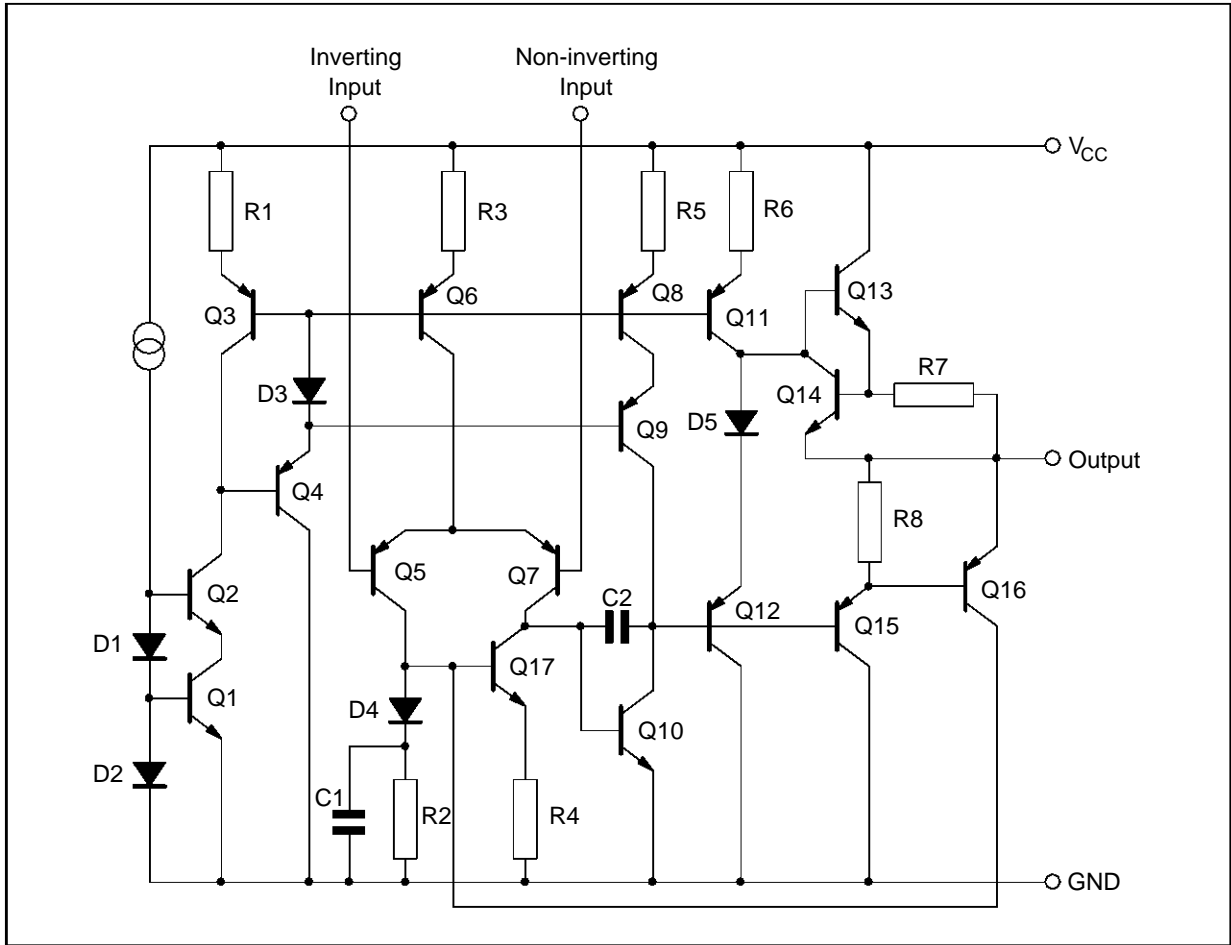
**ORDER CODES**

| Part Number | Temperature Range | Package  |
|-------------|-------------------|----------|
|             |                   | <b>N</b> |
| TDA2320     | -40°C, +105°C     | •        |

**PIN CONNECTIONS (top view)**



**SCHEMATIC DIAGRAM (1/2 TDA2320)**



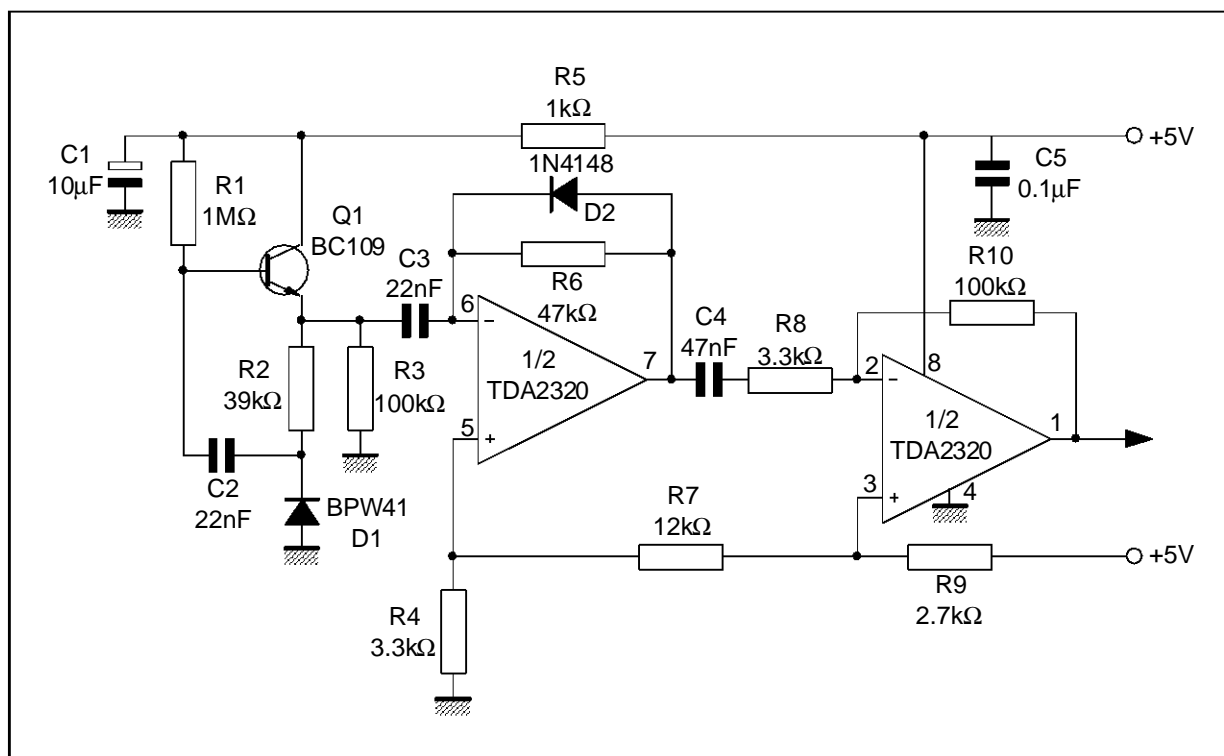
**ABSOLUTE MAXIMUM RATINGS**

| Symbol                            | Parameter  | Value      | Unit |
|-----------------------------------|--|------------|------|
| V <sub>CC</sub>                   | Supply Voltage                                     | 20         | V    |
| P <sub>tot</sub>                  | Total Power Dissipation at T <sub>amb</sub> = 70°C | 400        | mW   |
| T <sub>stg</sub> , T <sub>j</sub> | Storage and Junction Temperature                   | -40 to 150 | °C   |

**ELECTRICAL CHARACTERISTICS**

$V_{CC} = 5V$ ,  $T_{amb} = 25^{\circ}C$  (unless otherwise specified) (refer to the test circuits)

| Symbol    | Parameter  | Min. | Typ.     | Max. | Unit                   |
|-----------|--|------|----------|------|------------------------|
| $V_{CC}$  | Supply Voltage   | 4    |          | 20   | V                      |
| $I_{CC}$  | Supply Current<br>$V_{CC} = 20V$                                   |      | 0.8      | 2    | mA                     |
| $I_{ib}$  | Input Bias Current   |      | 100      | 500  | nA                     |
| $V_{io}$  | Input Offset Voltage<br>$R_s < 10k\Omega$                          |      | 0.5      |      | mV                     |
| $I_{io}$  | Input Offset Current   |      | 15       |      | nA                     |
| $A_{vd}$  | Large Signal Voltage Gain<br>$f = 1kHz$<br>$f = 100kHz$            | 64   | 70<br>30 |      | dB                     |
| $V_{OPP}$ | DC Output Voltage Swing  |      | 2.5      |      | V                      |
| GBP       | Gain-bandwidth Product<br>$f = 100kHz$                             | 1.5  | 3        |      | MHz                    |
| SR        | Slew Rate<br>$R_L = 2k\Omega$                                      |      | 1.5      |      | V/ $\mu s$             |
| $e_n$     | Equivalent Input Noise Voltage<br>$f = 40kHz$<br>$R_s = 10k\Omega$ |      | 20       |      | $\frac{nV}{\sqrt{Hz}}$ |
| SVR       | Supply Voltage Rejection Ratio<br>$f = 100Hz$                      |      | 80       |      | dB                     |

**APPLICATION CIRCUIT****FLASH MODE PREAMPLIFIER**

APPLICATION INFORMATION

Figure 1 : Application Circuit for Carrier Transmission Mode

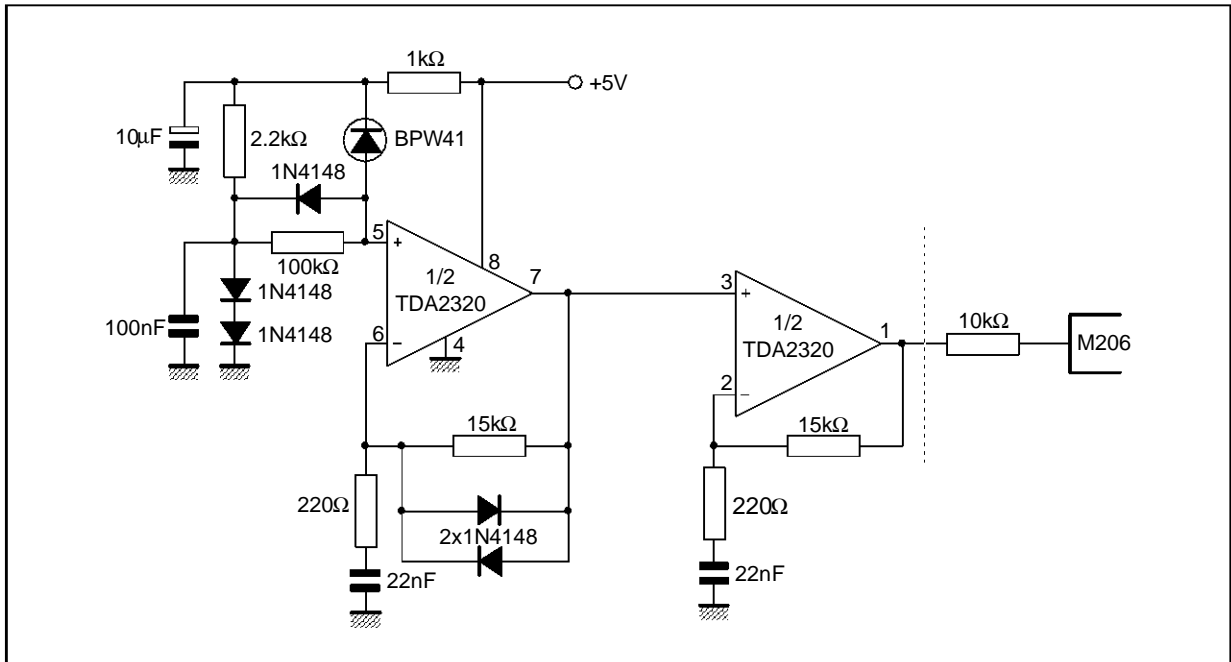


Figure 2 : IR Transmitter Using M709 or M710

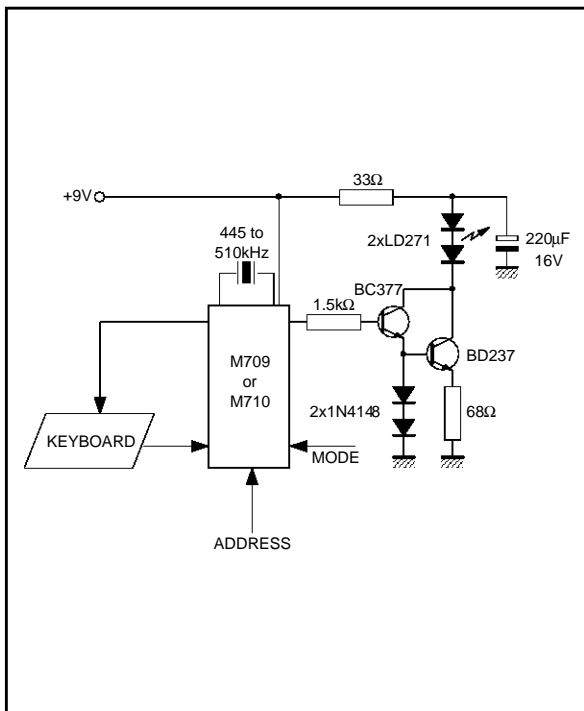
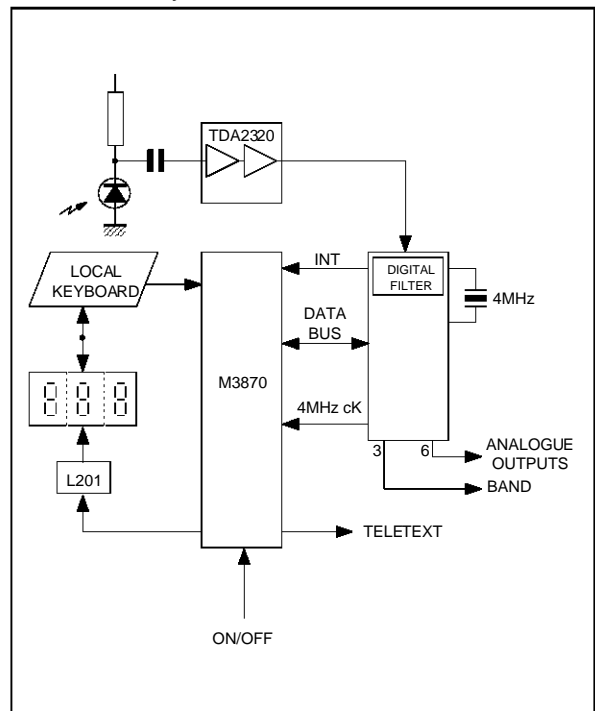
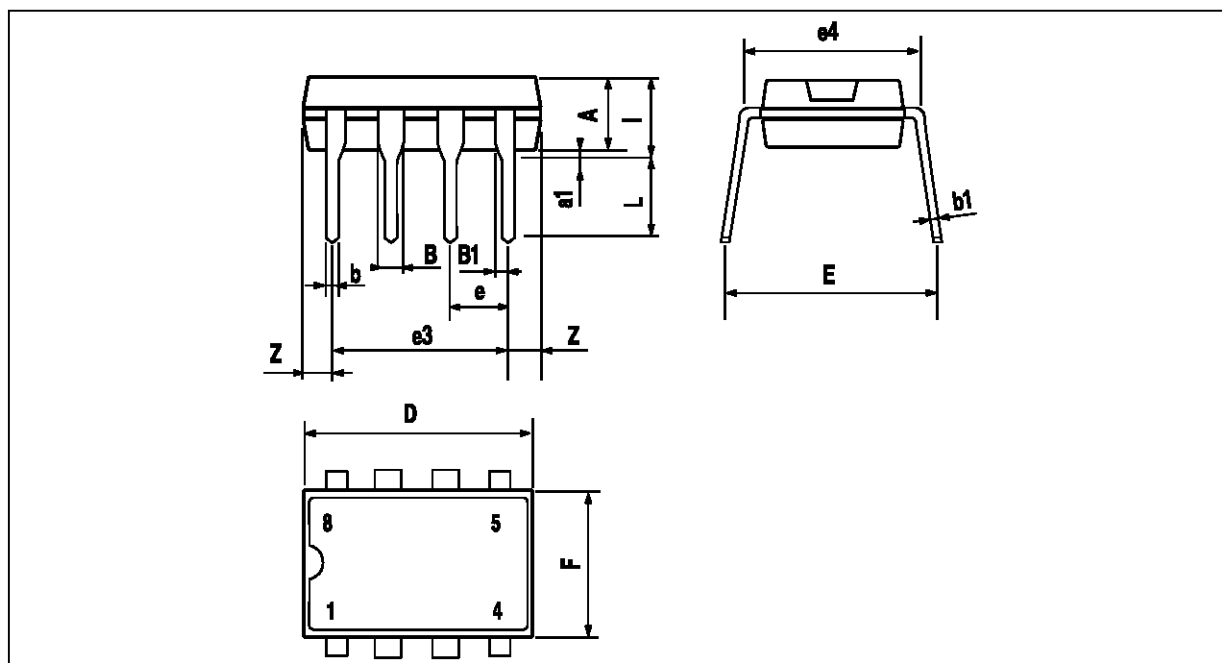


Figure 3 : MMC II - PLL TV Frequency Synthesizer



## PACKAGE MECHANICAL DATA

8 PINS -PLASTIC DIP



PM-DIP8.EPS

| Dimensions | Millimeters |      |       | Inches |       |       |
|------------|-------------|------|-------|--------|-------|-------|
|            | Min.        | Typ. | Max.  | Min.   | Typ.  | Max.  |
| A          |             | 3.32 |       |        | 0.131 |       |
| a1         | 0.51        |      |       | 0.020  |       |       |
| B          | 1.15        |      | 1.65  | 0.045  |       | 0.065 |
| b          | 0.356       |      | 0.55  | 0.014  |       | 0.022 |
| b1         | 0.204       |      | 0.304 | 0.008  |       | 0.012 |
| D          |             |      | 10.92 |        |       | 0.430 |
| E          | 7.95        |      | 9.75  | 0.313  |       | 0.384 |
| e          |             | 2.54 |       |        | 0.100 |       |
| e3         |             | 7.62 |       |        | 0.300 |       |
| e4         |             | 7.62 |       |        | 0.300 |       |
| F          |             |      | 6.6   |        |       | 0.260 |
| i          |             |      | 5.08  |        |       | 0.200 |
| L          | 3.18        |      | 3.81  | 0.125  |       | 0.150 |
| Z          |             |      | 1.52  |        |       | 0.060 |

DIP8.TBL

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