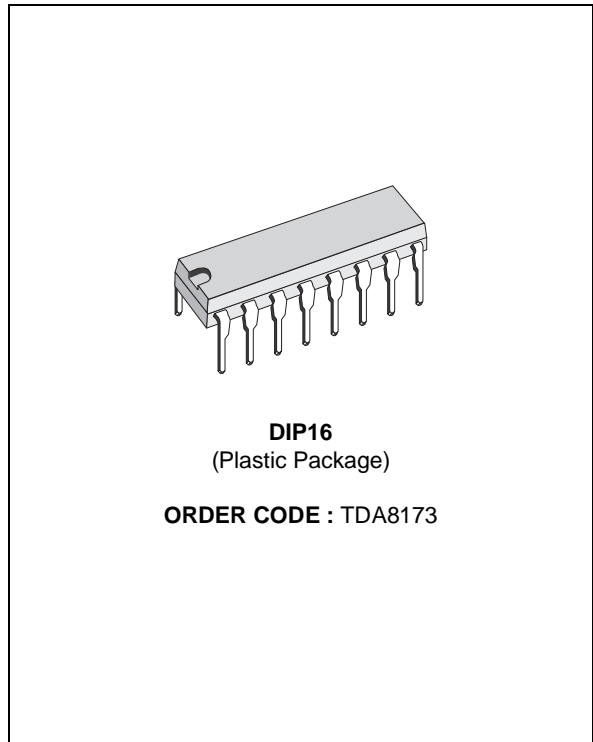


TV VERTICAL DEFLECTION OUTPUT CIRCUIT

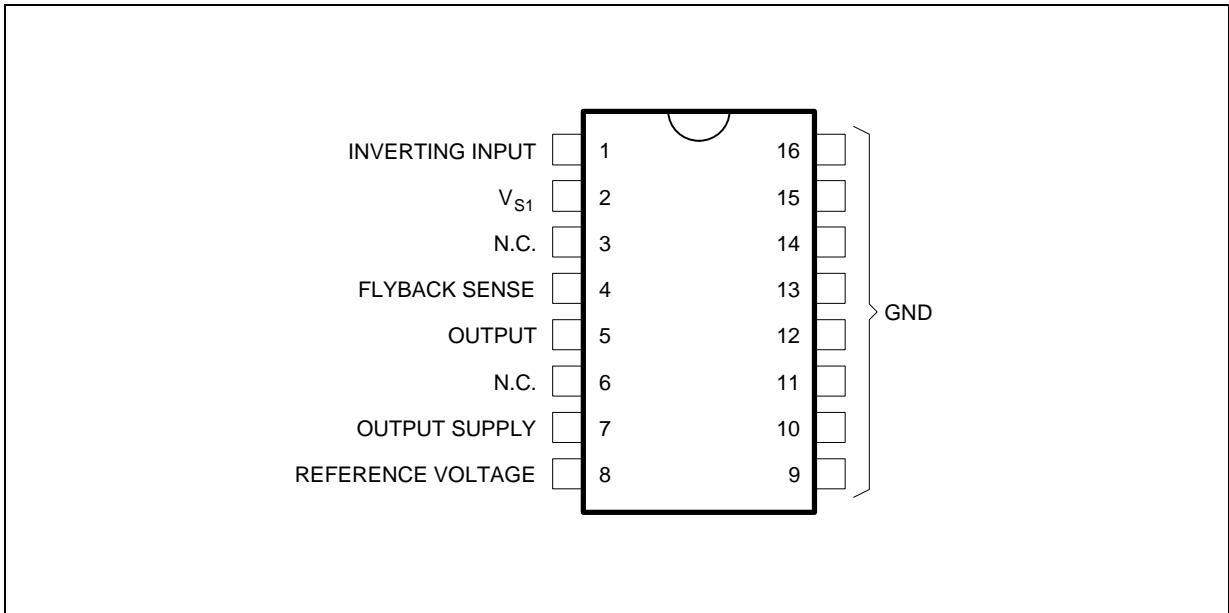
- POWER AMPLIFIER
- FLYBACK GENERATOR
- THERMAL PROTECTION
- REFERENCE VOLTAGE



DESCRIPTION

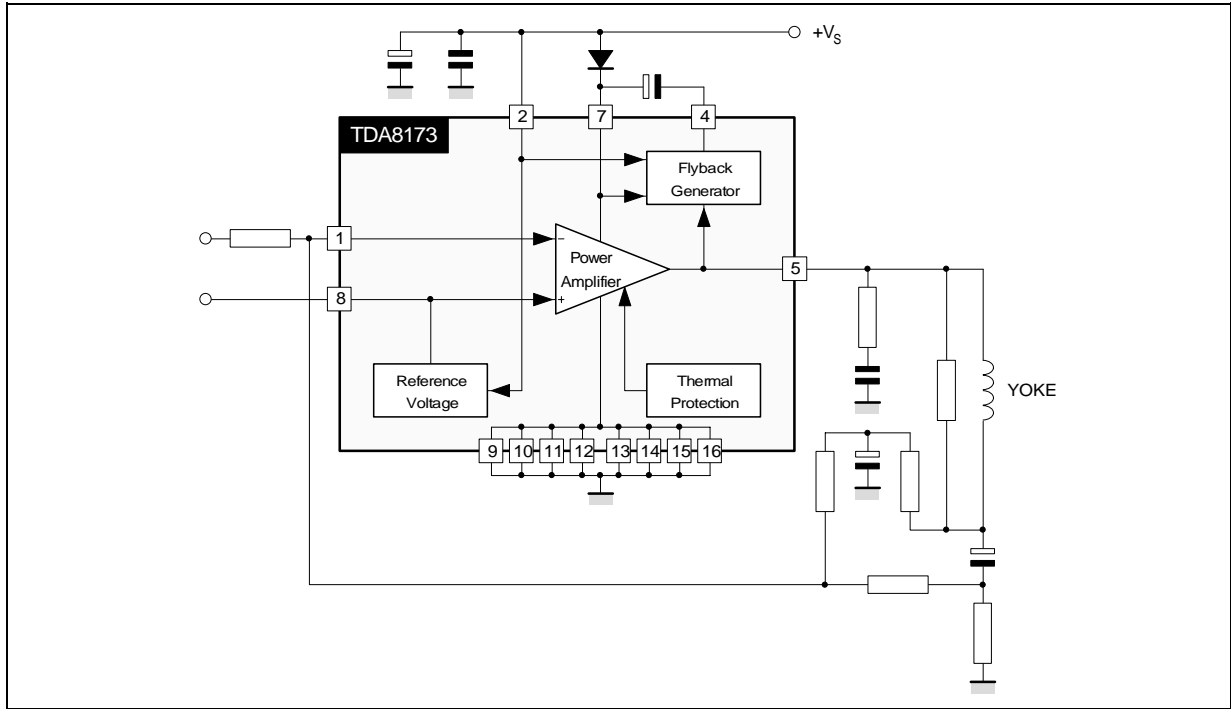
The TDA8173 is a monolithic integrated circuit in POWERDIP package. It is a high efficiency power booster for direct driving of vertical windings of TV yokes. It is intended for use in Color and B & W television sets as well as in monitors, and displays.

PIN CONNECTIONS (top view)



8173-01EPS

BLOCK DIAGRAM



8173-02.EPS

ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|----------------|--|------------------|--------------|
| V_S | Supply Voltage (pin 2) | 35 | V |
| V_5 | Flyback Peak Voltage | 60 | V |
| V_4 | Voltage at Pin 4 | + V_S | |
| V_1, V_8 | Amplifier Input Voltage | + V_S - 0.5 | V |
| I_o | Output Peak Current (non repetitive, $t = 2$ ms) | 2.5 | A |
| I_o | Output Peak Current at $f = 50$ or 60 Hz, $t \leq 10$ μ s | 3 | A |
| I_o | Output Peak Current at $f = 50$ or 60 Hz, $t > 10$ μ s | 2 | A |
| I_4 | Pin 4 DC Current at $V_5 < V_2$ | 100 | mA |
| I_4 | Pin 4 Peak to Peak Flyback Current at $f = 50$ or 60 Hz, $t_{fly} \leq 1.5$ ms | 3 | A |
| P_{tot} | Total Power Dissipation at $T_{case} = 60$ $^{\circ}$ C | 6 | W |
| T_{stg}, T_j | Storage and Junction Temperature | - 40 to 150 | $^{\circ}$ C |

8173-01.TBL

THERMAL DATA

| Symbol | Parameter | Value | Unit |
|---------------|-------------------------------------|---------|----------------|
| $R_{th(j-c)}$ | Thermal Resistance Junction-case | Max. 15 | $^{\circ}$ C/W |
| $R_{th(j-a)}$ | Thermal Resistance Junction-ambient | Max. 70 | $^{\circ}$ C/W |

8173-02.TBL

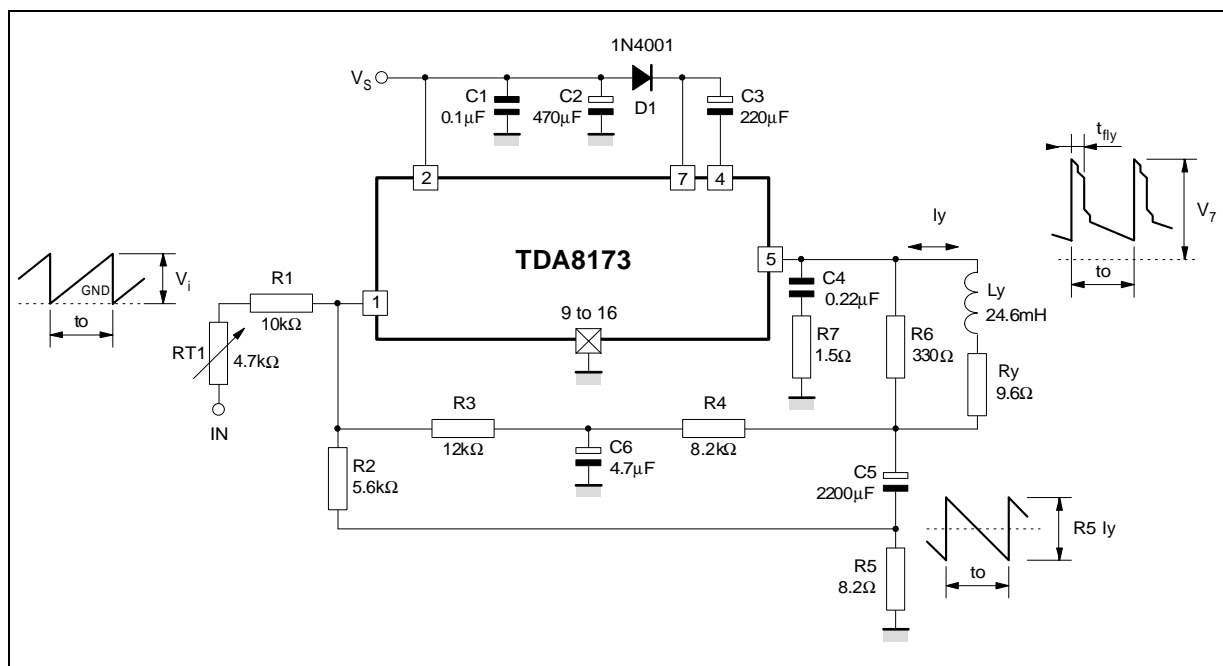
ELECTRICAL CHARACTERISTICS

(refer to the test circuits, $V_s = 35V$, $T_{amb} = 25^{\circ}C$ unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|---------------------------------|---|--------------------------------|------|-------|------|-------------|
| I_2 | Pin 2 Quiescent Current | $I = 0, I_5 = 0$ | | 8 | 16 | mA |
| I_7 | Pin 7 Quiescent Current | $I = 0, I_5 = 0$ | | 16 | 36 | mA |
| I_1 | Amplifier Input Bias Current | $V_1 = 1 V$ | | - 0.1 | - 1 | μA |
| V_{4L} | Pin 4 Saturation Voltage to GND | $I_4 = 20 mA$ | | 1 | | V |
| V_5 | Quiescent Output Voltage | $V_s = 35 V, R_a = 39 k\Omega$ | | 18 | | V |
| V_{5L} | Output Saturation Voltage to GND | $I_5 = 1.2 A$ | | 1 | 1.4 | V |
| | | $I_5 = 0.7 A$ | | 0.7 | 1 | V |
| V_{5H} | Output Saturation Voltage to Supply | $- I_5 = 1.2 A$ | | 1.6 | 2.2 | V |
| | | $- I_5 = 0.7 A$ | | 1.3 | 1.8 | V |
| T_j | Junction Temperature for Thermal Shut Down | | | 140 | | $^{\circ}C$ |
| V_8 | Reference Voltage | | | 2.2 | | V |
| $\frac{\Delta V_8}{\Delta V_s}$ | Reference Voltage Drift versus Supply Voltage | $V_s = 15 \text{ to } 30 V$ | | 1 | 2 | mV |

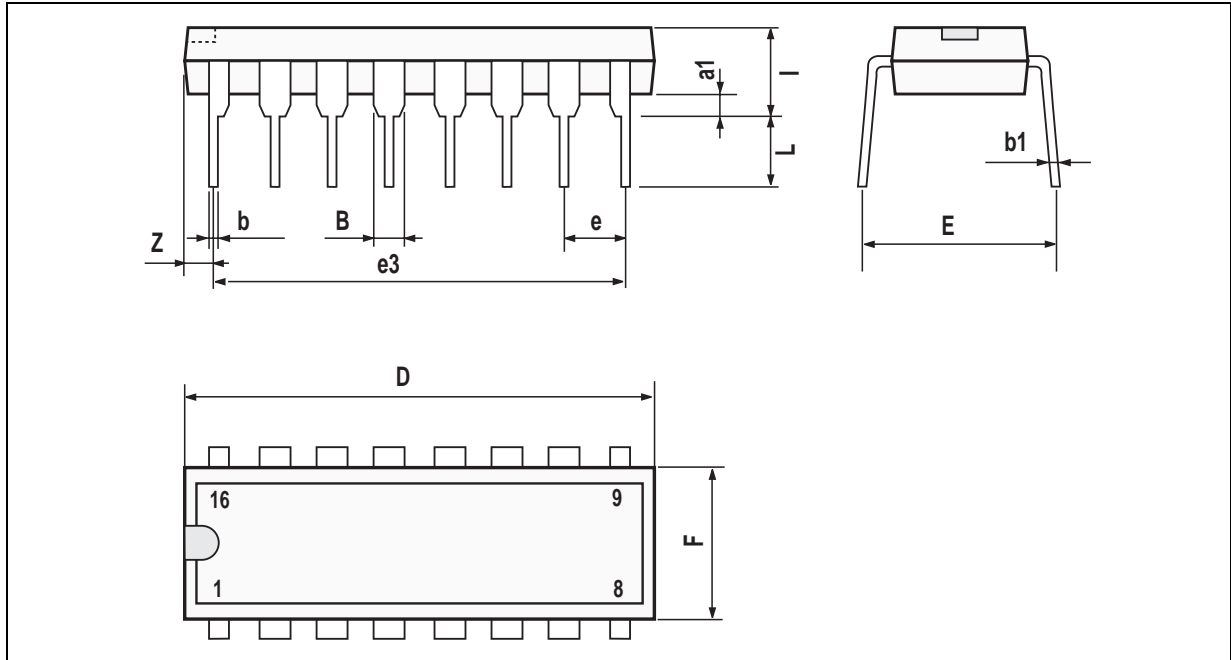
8173-03.TBL

TEST CIRCUITS



8173-03.EPS

PACKAGE MECHANICAL DATA
16 PINS - PLASTIC DIP



PM-DIP16.EPS

| Dimensions | Millimeters | | | Inches | | |
|------------|-------------|-------|------|--------|-------|-------|
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| a1 | 0.51 | | | 0.020 | | |
| B | 0.77 | | 1.65 | 0.030 | | 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 | | 17.78 | | | 0.700 | |
| F | | | 7.1 | | | 0.280 |
| i | | | 5.1 | | | 0.201 |
| L | | 3.3 | | | 0.130 | |
| Z | | | 1.27 | | | 0.050 |

DIP16.TBL

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