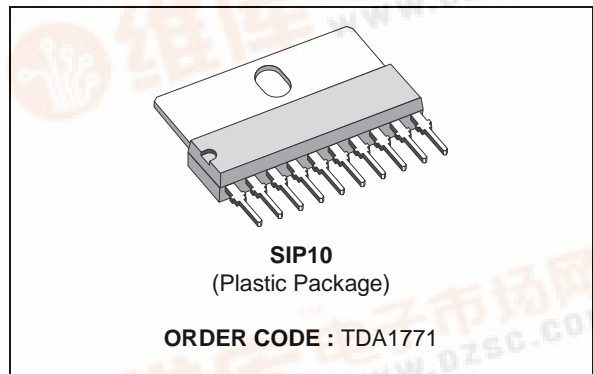


VERTICAL DEFLECTION CIRCUIT

- RAMP GENERATOR
- INDEPENDENT AMPLITUDE ADJUSTEMENT
- BUFFER STAGE
- POWER AMPLIFIER
- FLYBACK GENERATOR
- INTERNAL REFERENCE VOLTAGE
- THERMAL PROTECTION

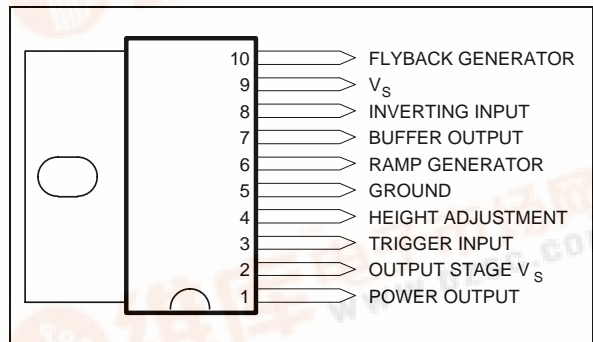


DESCRIPTION

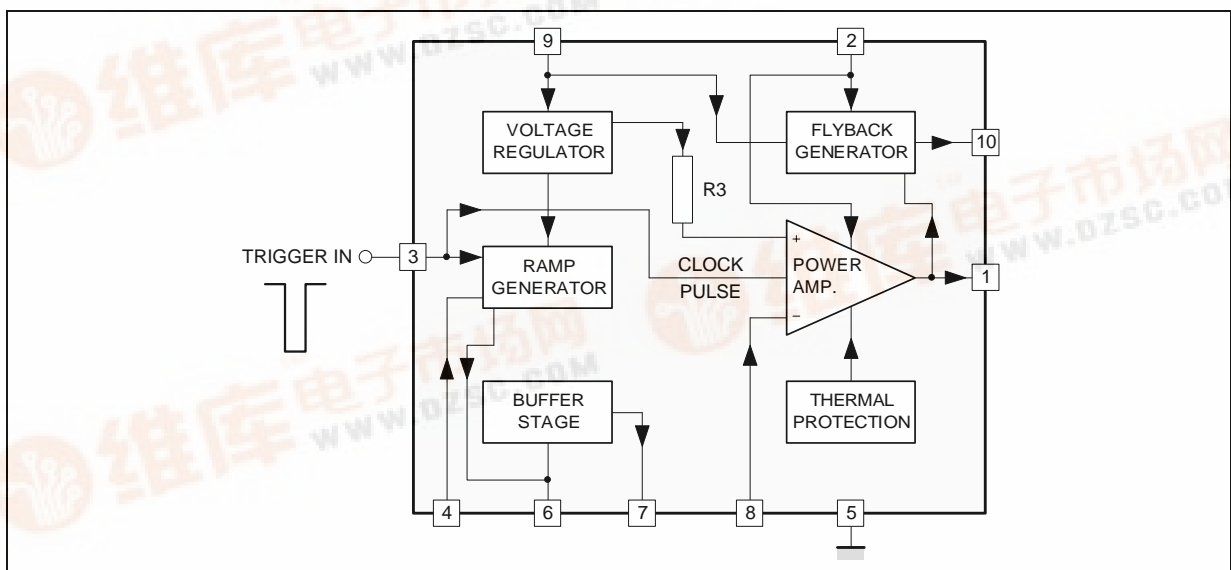
The TDA1771 is a monolithic integrated circuit in SIP10 package.

It is a full performance and very efficient vertical deflection circuit intended for direct drive of a TV picture tube in Color and B & W television as well as in Monitor and Data displays.

PIN CONNECTIONS (top view)



BLOCK DIAGRAM



TDA1771

ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|---------------------------------|---|-----------------------|------|
| V _S | Supply Voltage | 30 | V |
| V ₁ , V ₂ | Flyback Peak Voltage | 65 | V |
| V ₃ | Trigger Input Voltage | 20 | V |
| V ₈ | Amplifier Input Voltage | GND to V _S | V |
| I _o | Output Peak to Peak Current (non repetitive t = 2ms) | 6 | A |
| I _o | Output Peak to Peak Current t > 10μs | 4 | A |
| I ₁₀ | Pin 10 DC Current at V ₁ < V ₉ | 100 | mA |
| I ₁₀ | Pin 10 Peak to Peak Current @ t _{tr} < 1.5ms | 3 | A |
| P _{tot} | Total Power Dissipation @ T _{tab} = 60°C | 9 | W |
| T _S , T _J | Storage and Junction Temperature | - 40, + 150 | °C |

1771-01.TBL

THERMAL DATA

| Symbol | Parameter | Value | Unit |
|------------------------|-------------------------------------|---------|------|
| R _{th(j-tab)} | Thermal Resistance Junction-tab | Max. 10 | °C/W |
| R _{th(j-a)} | Thermal Resistance Junction-ambient | Max. 70 | °C/W |

1771-02.TBL

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|----------------------------------|---|---|------|------|------|-------|
| DC (V _S = 30V) | | | | | | |
| I ₂ | Pin 2 Quiescent Current | I ₁ = 0, I ₁₀ = 0 | | 16 | 36 | mA |
| I ₉ | Pin 9 Quiescent Current | I ₁ = 0, I ₁₀ = 0 | | 15 | 30 | mA |
| - I ₆ | Ramp Generator Bias Current | V ₆ = 0 | | | 0.5 | μA |
| - I ₆ | Ramp Generator Current | V ₆ = 0, - I ₄ = 20μA | 18.5 | 20 | 21.5 | μA |
| dI ₆ /I ₆ | Ramp Gener. Linearity | V ₆ = 0 to 15V, - I ₄ = 20μA | | 0.2 | 1 | % |
| V ₁ | Quiescent Output Voltage | R _a = 30kΩ, R _b = 10kΩ, V _S = 30V | 17.0 | 17.8 | 18.6 | V |
| | | R _a = 6.8kΩ, R _b = 10kΩ, V _S = 15V | 7.2 | 7.5 | 7.8 | V |
| V _{1L} | Out Saturation Voltage to GND | I ₁ = 0.5A | | 0.5 | 1 | V |
| | | I ₁ = 1.2A | | 1 | 1.4 | V |
| V _{1H} | Out Saturation Voltage to V _S | - I ₁ = 0.5A | | 1.1 | 1.6 | V |
| | | - I ₁ = 1.2A | | 1.6 | 2.2 | V |
| V ₄ | Reference Voltage | - I ₄ = 20μA | 6.3 | 6.6 | 6.9 | V |
| dV ₄ /V _S | Reference Voltage Drift Versus V _S | V _S = 10V to 30V | | 1 | 2 | mV/V |
| dV ₄ /dI ₄ | Reference Voltage Drift Versus I ₄ | I ₄ = 10μA to 30μA | | 1.5 | 2 | mV/μA |
| V _r | Internal Ref. Voltage | | 4.26 | 4.40 | 4.54 | V |
| G _v | Output Stage Open Loop Gain | f = 100Hz | | 60 | | dB |
| V _{fs} | V ₉₋₁₀ Saturation Voltage | - I ₁₀ = 1.2A | | 1.5 | 2.5 | V |
| V ₁₀ | Pin 10 Scanning Voltage | I ₁₀ = 20mA | | 1.7 | 3 | V |
| V ₃ | Trigger Input Threshold | (see note 1) | 2.6 | 3.0 | 3.4 | V |
| I ₃ | Trigger Input Bias Current | V _{IN} = V ₃ - 0.2V | | | 30 | μA |
| t ₃ | Trigger Input Width | (see note 2) | 20 | 60 | th | μS |

1771-03.TBL

Notes : 1. The trigger input circuit can accept, with a metal option, positive and negative going input pulses.

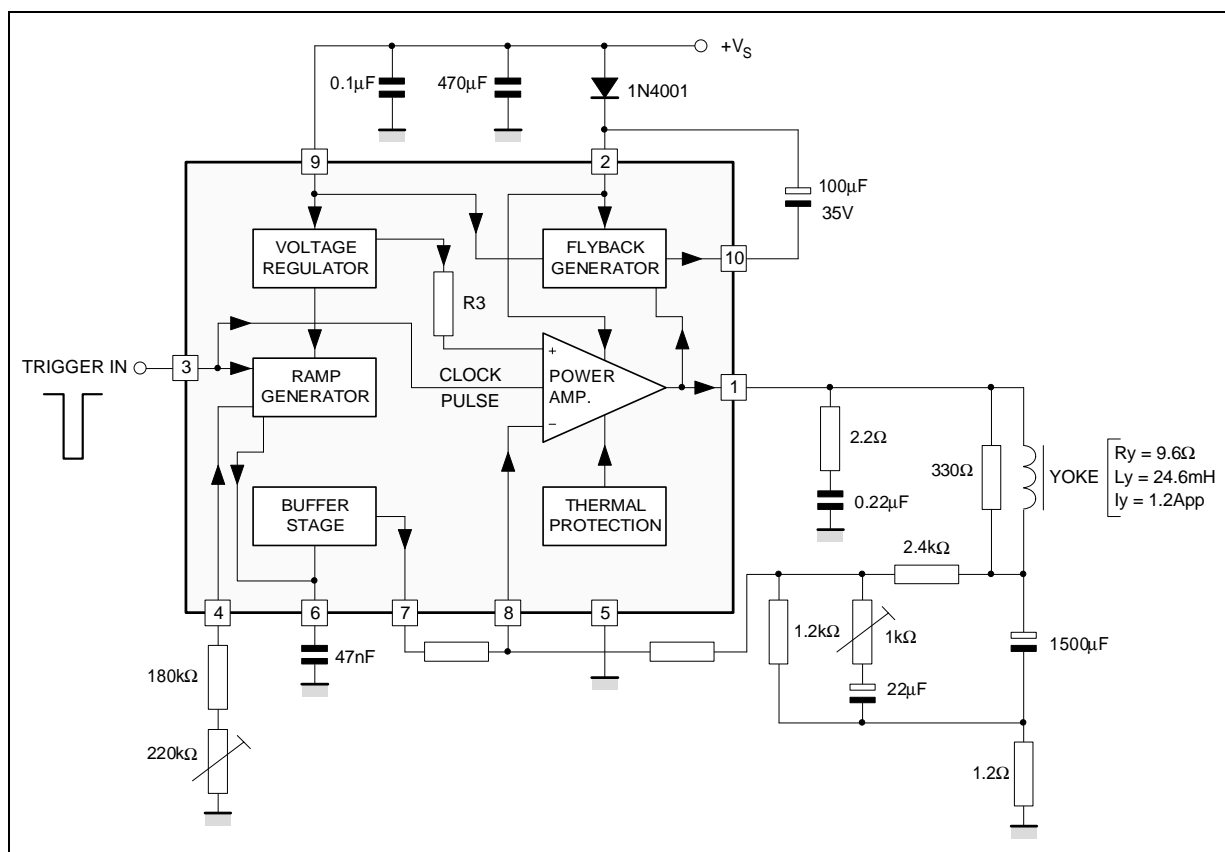
2. $th = \frac{1.2 \cdot t_s}{V_{PP}}$ where t_s is the vertical period and V_{PP} is ramp amplitude at Pin 6

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$ unless otherwise specified) (continued)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|---------------------------|--------------------------------------|--------------------------|------|------|------|--------------------|
| DC ($V_S = 24\text{V}$) | | | | | | |
| V_S | Operating Supply Voltage Range | | 10 | | 30 | V |
| I_1 | Peak-to-peak Operating Current Range | | 0.4 | | 2.5 | A |
| I_S | Supply Current | $I_Y = 2.4\text{A}_{pp}$ | | 315 | | mA |
| V_1 | Flyback Voltage | $I_Y = 2.4\text{A}_{pp}$ | | 51 | | V |
| V_7 | Sawtooth Pedestall Voltage | | | 1.85 | | V |
| T_{JS} | Junction Temp. for Thermal Shutdown | | | 145 | | $^{\circ}\text{C}$ |

1771-04.TBL

APPLICATION CIRCUIT

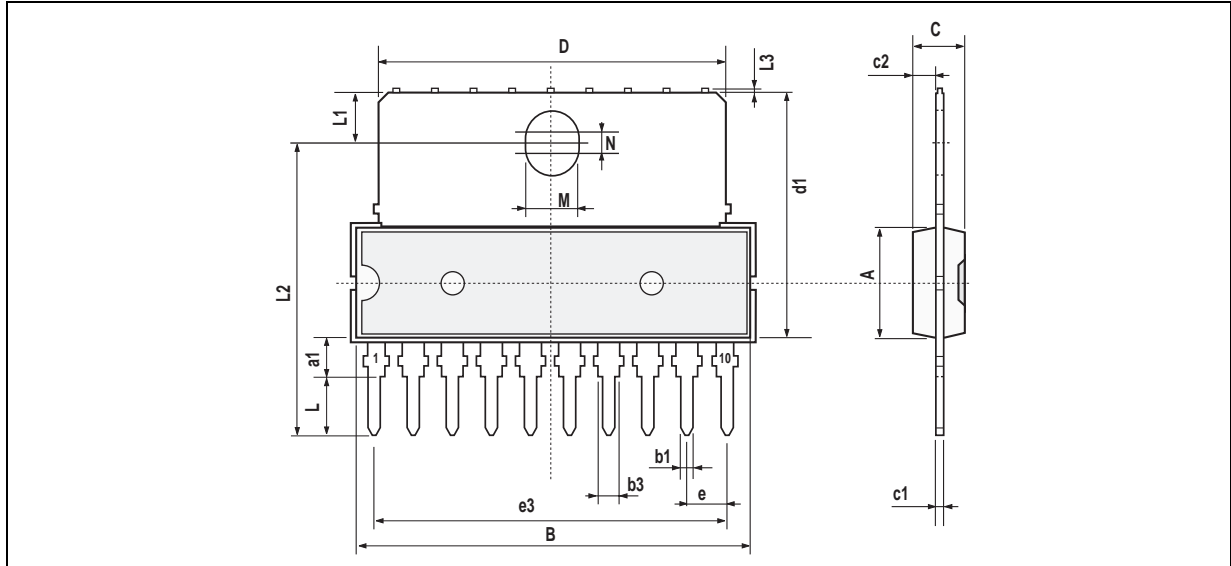


1771-03.EPS

TDA1771

PACKAGE MECHANICAL DATA

10 PINS - PLASTIC SIP



PM-SIP10.EPS

| Dimensions | Millimeters | | | Inches | | |
|------------|-------------|-------|------|--------|-------|-------|
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | | | 7.1 | | | 0.280 |
| a1 | 2.7 | | 3 | 0.106 | | 0.118 |
| B | | | 24.8 | | | 0.976 |
| b1 | | 0.5 | | | 0.020 | |
| b3 | 0.85 | | 1.6 | 0.033 | | 0.063 |
| C | | 3.3 | | | 0.130 | |
| c1 | | 0.43 | | | 0.017 | |
| c2 | | 1.32 | | | 0.052 | |
| D | | | 23.7 | | | 0.933 |
| d1 | | 14.5 | | | 0.571 | |
| e | | 2.54 | | | 0.100 | |
| e3 | | 22.86 | | | 0.900 | |
| L | 3.1 | | | 0.122 | | |
| L1 | | 3 | | | 0.118 | |
| L2 | | 17.6 | | | 0.693 | |
| L3 | | | 0.25 | | | 0.010 |
| M | | 3.2 | | | 0.126 | |
| N | | 1 | | | 0.039 | |

SIP10.TBL

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