

VERTICAL DEFLECTION BOOSTER

ADVANCE DATA

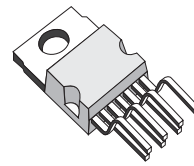
- POWER AMPLIFIER
- FLYBACK GENERATOR
- THERMAL PROTECTION
- OUTPUT CURRENT UP TO 3.0A_{PP}
- FLYBACK VOLTAGE UP TO 70V (on Pin 5)
- INTERNAL REFERENCE VOLTAGE

DESCRIPTION

Designed for monitors and high performance TVs, the TDA8171 vertical deflection booster delivers flyback voltages up to 70V.

The TDA8171 operates with supplies up to 35V and provides up to 3A_{pp} output current to drive the yoke.

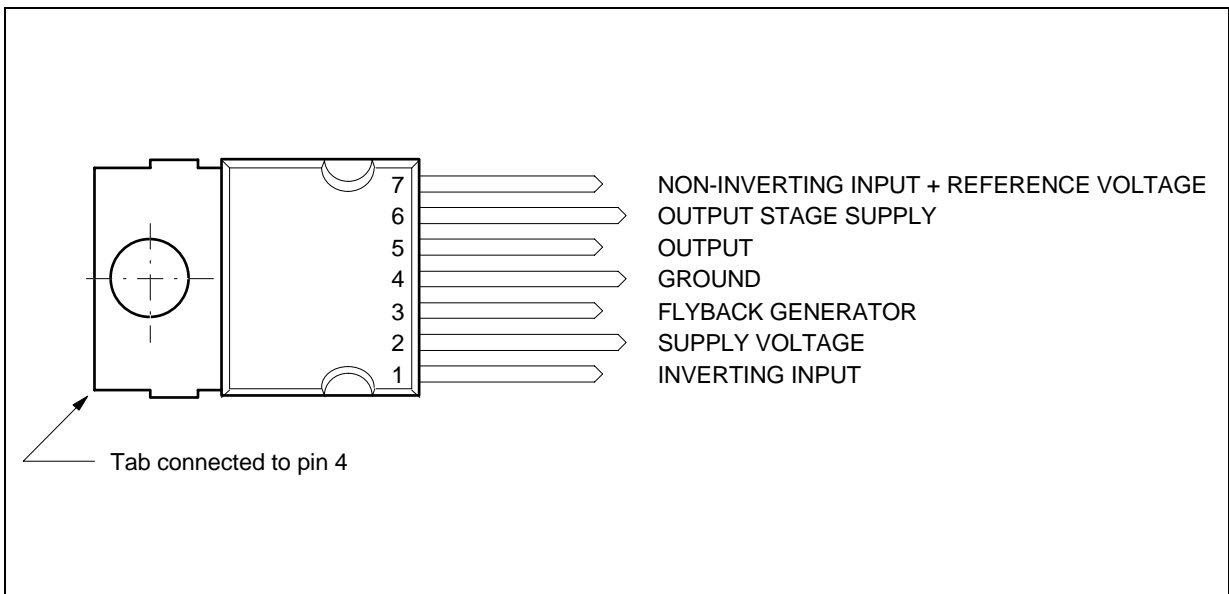
The TDA8171 is offered in HEPTAWATT package.



HEPTAWATT
(Plastic Package)

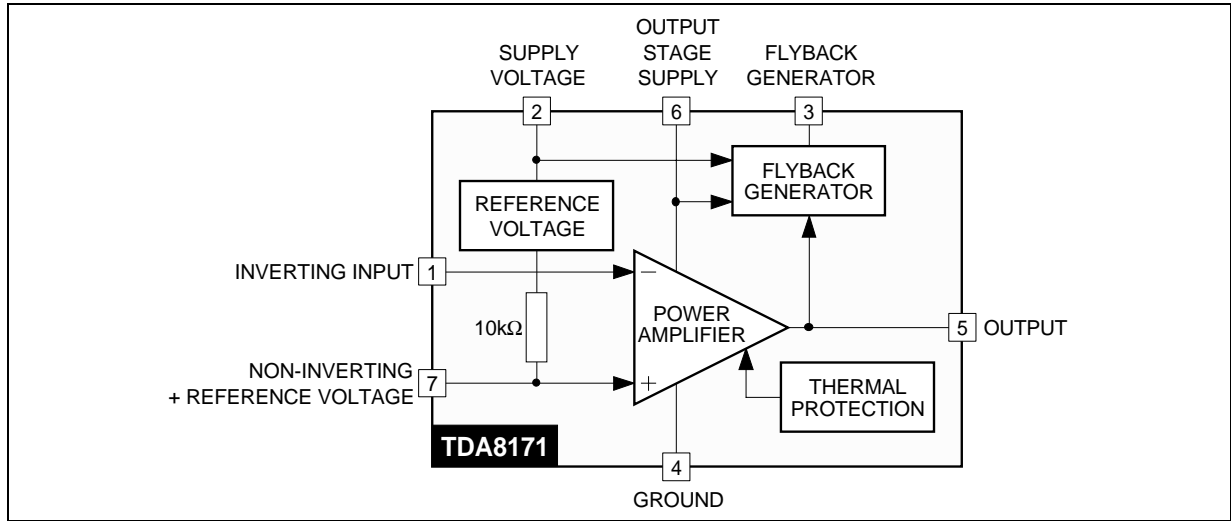
ORDER CODE : TDA8171

PIN CONNECTIONS



8171-01.EPS

BLOCK DIAGRAM



8171-02.EPS

ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|------------|--|----------------|------|
| V_S | Supply Voltage (Pin 2) (see note 1) | 40 | V |
| V_6 | Flyback Peak Voltage (Pin 6) (see note 1) | 75 | V |
| V_1, V_7 | Amplifier Input Voltage (Pins 1-7) (see note 1) | - 0.3, + V_S | V |
| I_O | Maximum Output Peak Current (see notes 2 and 3) | 2.5 | A |
| I_3 | Maximum Sink Current (first part of flyback) ($t < 1ms$) | 2.5 | A |
| I_3 | Maximum Source Current ($t < 1ms$) | 2.5 | A |
| V_{ESD} | Electrostatic Handling for all pins (see note 4) | 2000 | V |
| T_{oper} | Operating Ambient Temperature | - 20, + 75 | °C |
| T_{stg} | Storage Temperature | - 40, + 150 | °C |
| T_j | Junction Temperature | +150 | °C |

8171-01.TBL

- Notes :**
1. Versus GND.
 2. The output current can reach 4A peak for $t \leq 10\mu s$ (up to 120Hz).
 3. Provided SOAR is respected (see Figures 1 and 2).
 4. Equivalent to discharging a 100pF capacitor through a 1.5kΩ series resistor.

THERMAL DATA

| Symbol | Parameter | Value | Unit |
|---------------|---------------------------------------|--------|------|
| $R_{th(j-c)}$ | Junction-case Thermal Resistance | Max. 3 | °C/W |
| T_t | Temperature for Thermal Shutdown | 150 | °C |
| T_{jr} | Recommended Max. Junction Temperature | 120 | °C |

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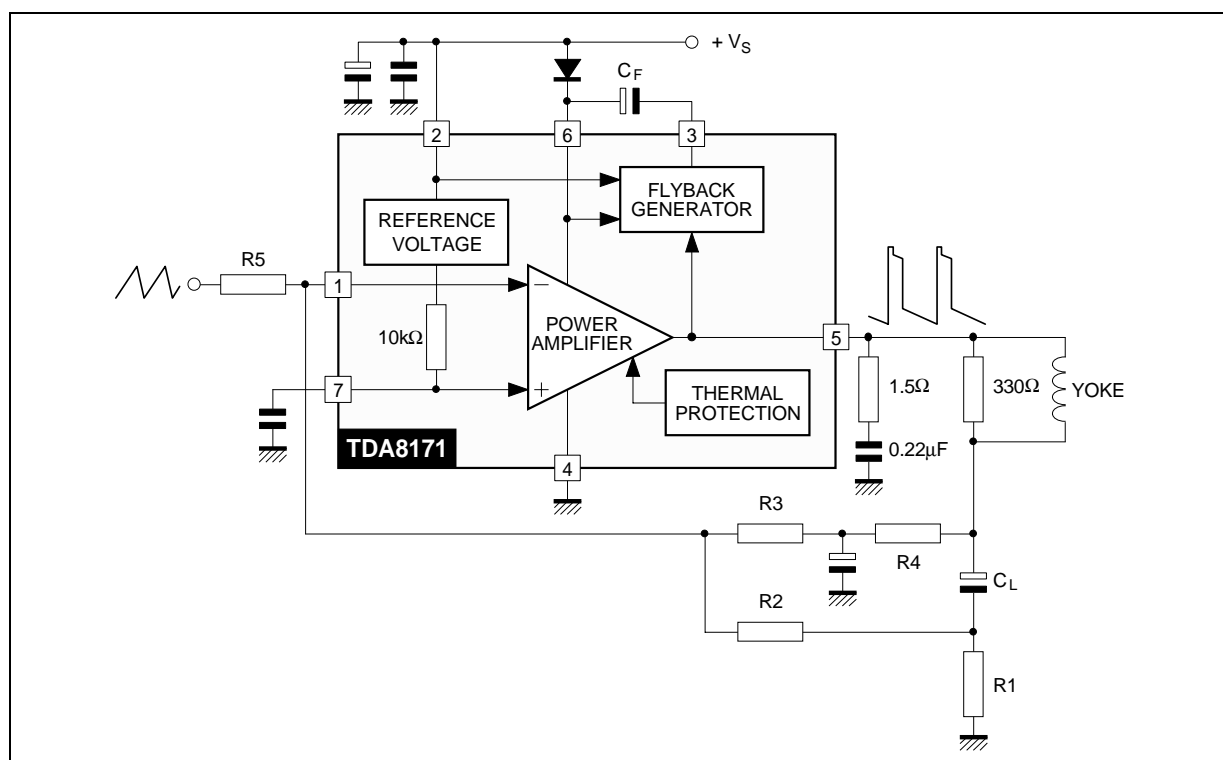
ELECTRICAL CHARACTERISTICS

($V_S = 35V$, $T_A = 25^\circ C$, unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|-------------------------|---|-------------------------------|------|------|------|----------------|
| V_S | Operating Supply Voltage Range | | 10 | | 35 | V |
| I_2 | Pin 2 Quiescent Current | $I_3 = 0, I_5 = 0$ | | 9 | 20 | mA |
| I_6 | Pin 6 Quiescent Current | $I_3 = 0, I_5 = 0, V_6 = 35V$ | 8 | 15 | 30 | mA |
| I_O | Max. Peak Output Current | | | | 1.5 | A |
| I_1 | Amplifier Bias Current | $V_1 = 1V$ | | | - 1 | μA |
| V_7 | Reference Voltage | | | 2.35 | | V |
| $\Delta V_7/\Delta V_S$ | Reference Voltage Drift versus Supply Voltage | | | 1 | 2 | mV/V |
| $\Delta V_7/\Delta t$ | Reference Voltage Drift versus Temperature | | | 0.15 | | mV/ $^\circ C$ |
| GV | Voltage Gain | | 80 | | | dB |
| V_{5L} | Output Saturation Voltage to GND (Pin 4) | $I_5 = 1.5A$ | | 1 | 1.7 | V |
| V_{5H} | Output Saturation Voltage to Supply (Pin 6) | $I_5 = - 1.5A$ | | 1.8 | 2.3 | V |
| V_{D5-6} | Diode Forward Voltage between Pins 5-6 | $I_5 = 1.5A$ | | 1.8 | 2.3 | V |
| V_{D3-2} | Diode Forward Voltage between Pins 3-2 | $I_3 = 1.5A$ | | 1.6 | 2.2 | V |
| V_{3SL} | Saturation Voltage on Pin 3 | $I_3 = 20mA$ | | 0.4 | 1 | V |
| V_{3SH} | Saturation Voltage to Pin 2 (2nd part of flyback) | $I_3 = - 1.5A$ | | 2.1 | 2.8 | V |

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APPLICATION CIRCUIT



8171-03.EPS

Figure 1 : Output Transistors SOA
(for secondary breakdown)

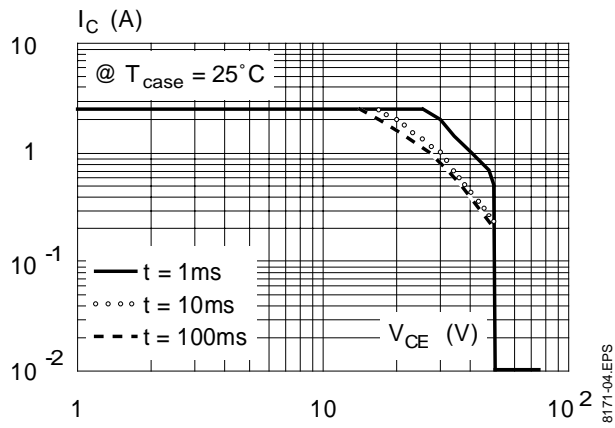
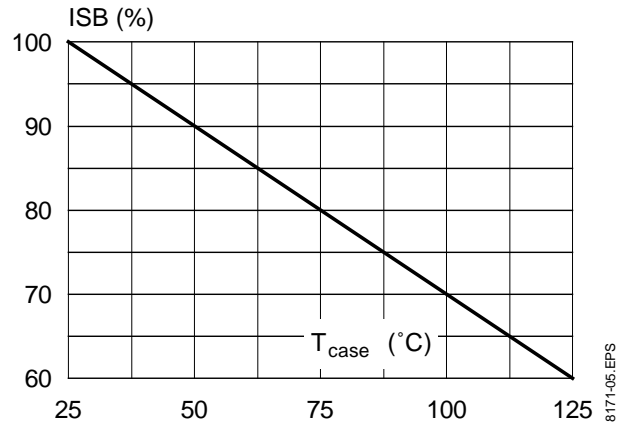
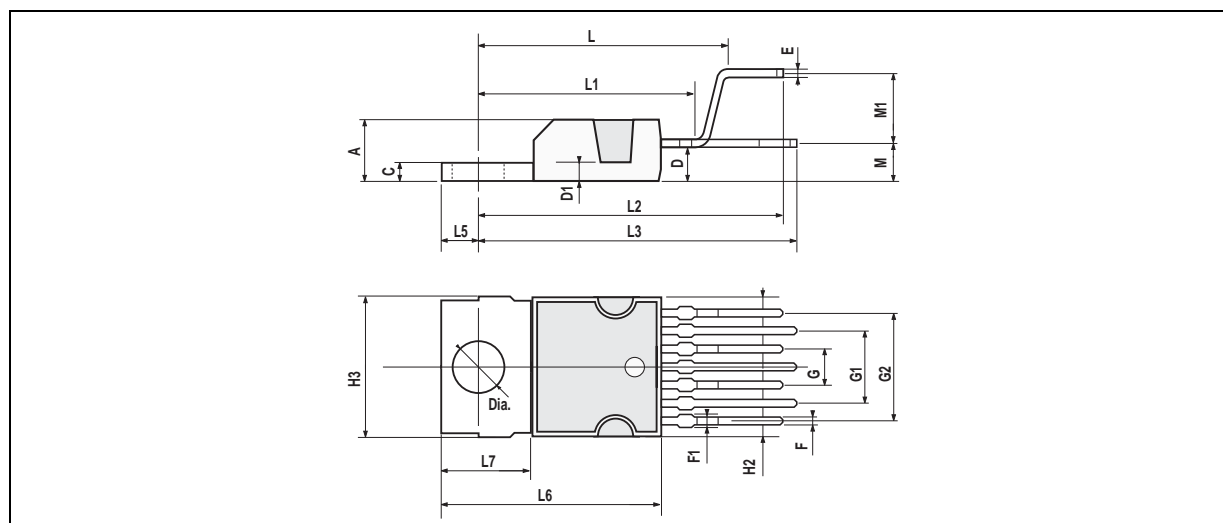


Figure 2 : Secondary Breakdown Temperature Derating Curve
(ISB = secondary breakdown current)



PACKAGE MECHANICAL DATA : HEPTAWAT



PM-HEPTVEPS

| Dimensions | Millimeters | | | Inches | | |
|------------|-------------|-------|------|--------|-------|-------|
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | | | 4.8 | | | 0.189 |
| C | | | 1.37 | | | 0.054 |
| D | 2.4 | | 2.8 | 0.094 | | 0.110 |
| D1 | 1.2 | | 1.35 | 0.047 | | 0.053 |
| E | 0.35 | | 0.55 | 0.014 | | 0.022 |
| F | 0.6 | | 0.8 | 0.024 | | 0.031 |
| F1 | | | 0.9 | | | 0.035 |
| G | 2.41 | 2.54 | 2.67 | 0.095 | 0.100 | 0.105 |
| G1 | 4.91 | 5.08 | 5.21 | 0.193 | 0.200 | 0.205 |
| G2 | 7.49 | 7.62 | 7.8 | 0.295 | 0.300 | 0.307 |
| H2 | | | 10.4 | | | 0.409 |
| H3 | 10.05 | | 10.4 | 0.396 | | 0.409 |
| L | | 16.97 | | | 0.668 | |
| L1 | | 14.92 | | | 0.587 | |
| L2 | | 21.54 | | | 0.848 | |
| L3 | | 22.62 | | | 0.891 | |
| L5 | 2.6 | | 3 | 0.102 | | 0.118 |
| L6 | 15.1 | | 15.8 | 0.594 | | 0.622 |
| L7 | 6 | | 6.6 | 0.236 | | 0.260 |
| M | | 2.8 | | | 0.110 | |
| M1 | | 5.08 | | | 0.200 | |
| Dia. | 3.65 | | 3.85 | 0.144 | | 0.152 |

HEPTV.TBL

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