

**VERTICAL DEFLECTION BOOSTER**

ADVANCE DATA

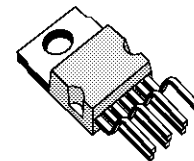
- POWER AMPLIFIER
- FLYBACK GENERATOR
- THERMAL PROTECTION
- OUTPUT CURRENT UP TO 3.0A<sub>PP</sub>
- FLYBACK VOLTAGE UP TO 70V (on Pin 5)
- INTERNAL REFERENCE VOLTAGE

**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<sub>pp</sub> output current to drive the yoke.

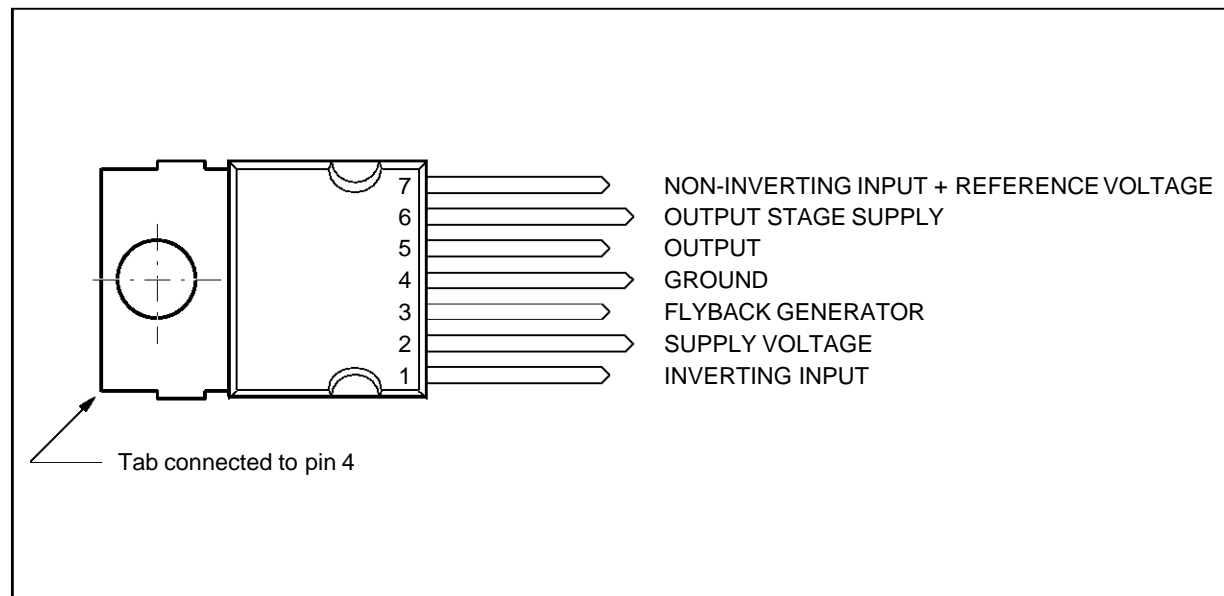
The TDA8171 is offered in HEPTAWATT package.



**HEPTAWATT**  
(Plastic Package)

**ORDER CODE : TDA8171**

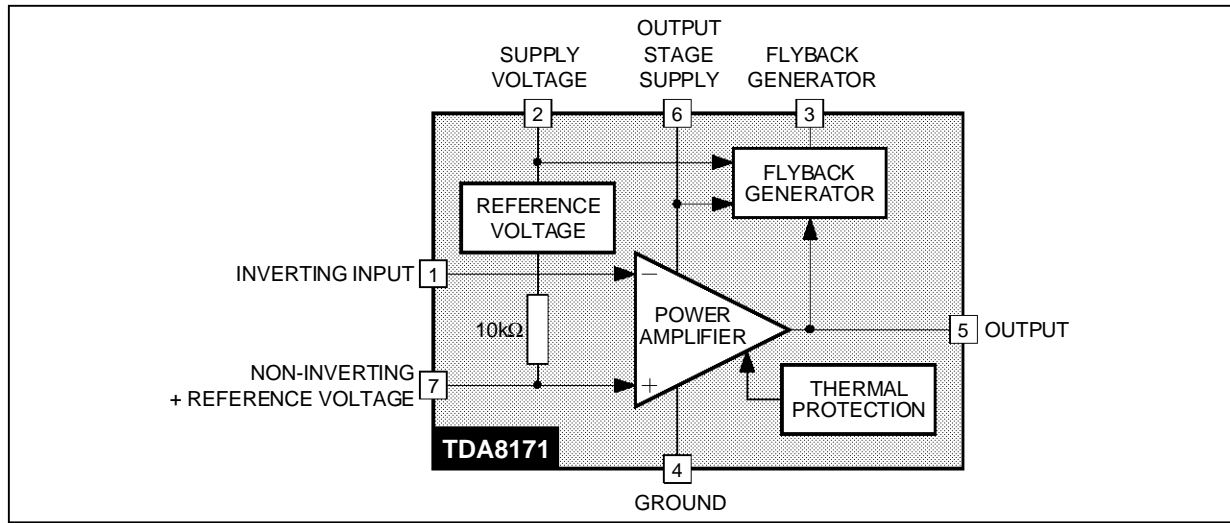
**PIN CONNECTIONS**



8171-01.EPS

# TDA8171

## BLOCK DIAGRAM



## 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) ( $t < 1\text{ms}$ )	2.5	A
$I_3$	Maximum Source Current ( $t < 1\text{ms}$ )	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

- Notes :
1. Versus GND.
  2. The output current can reach 4A peak for  $t \leq 10\mu\text{s}$  (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

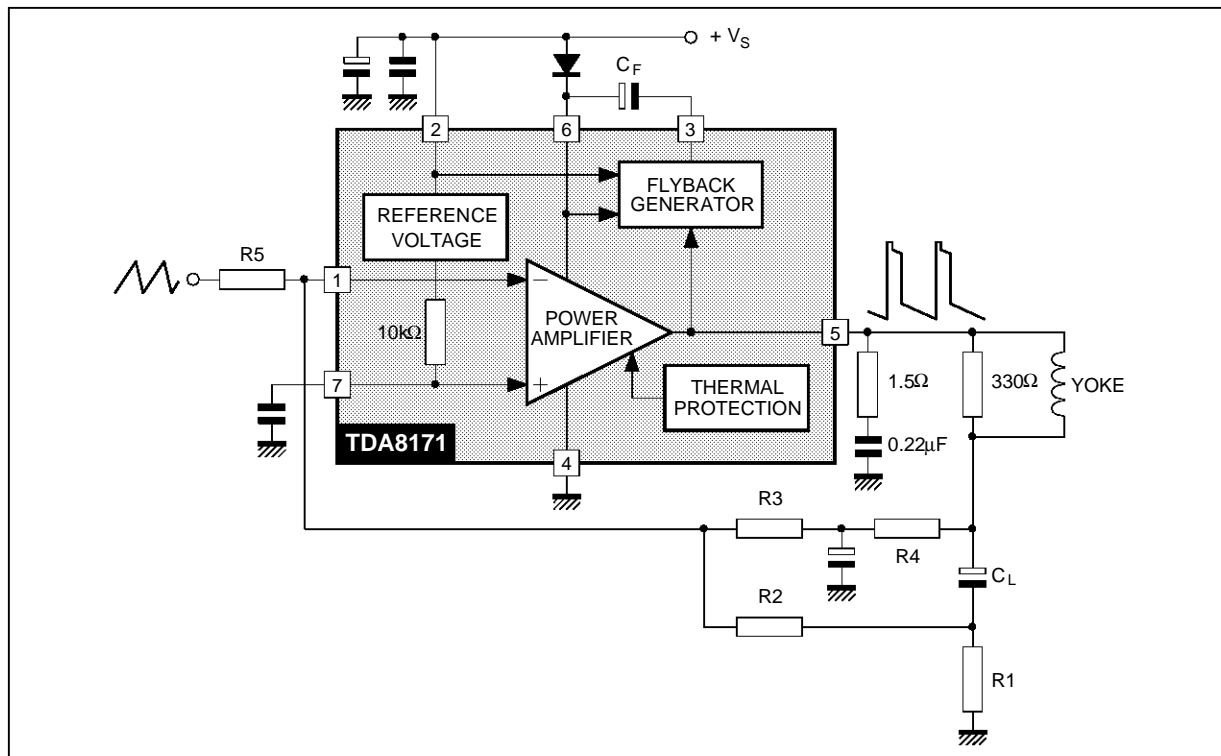
**ELECTRICAL CHARACTERISTICS**

( $V_S = 35V$ ,  $T_A = 25^\circ C$ , 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	$\mu A$
$V_7$	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

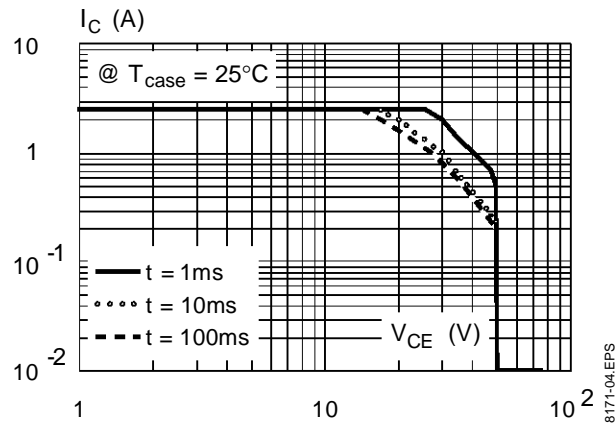
8171-03.TBL

**APPLICATION CIRCUIT**

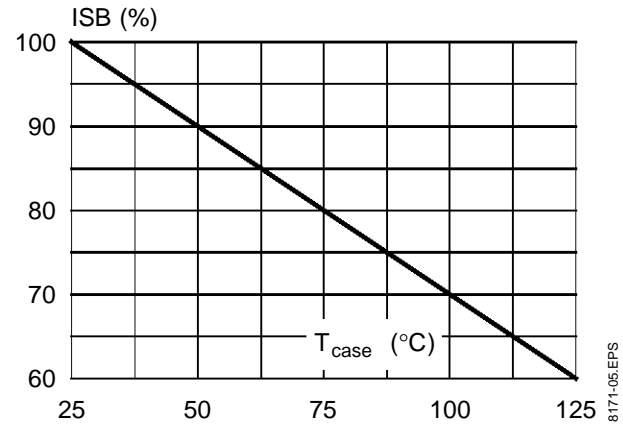


8171-03.EPS

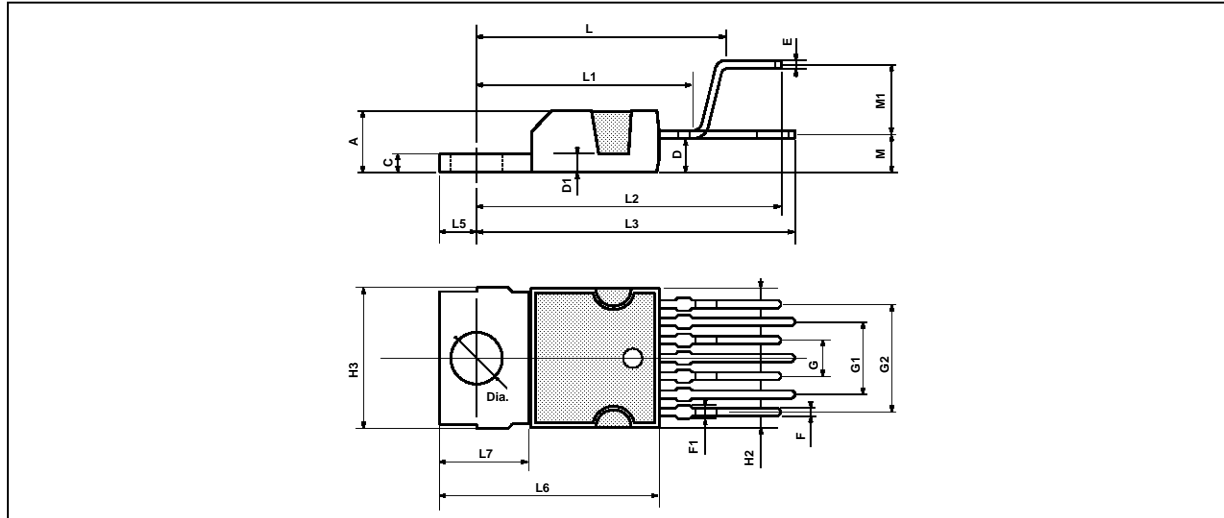
**Figure 1 :** Output Transistors SOA  
(for secondary breakdown)



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



## PACKAGE MECHANICAL DATA : HEPTAWAT



PM-HEPTV.EPS

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

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No licence is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1994 SGS-THOMSON Microelectronics - All Rights Reserved

Purchase of I<sup>2</sup>C Components of SGS-THOMSON Microelectronics, conveys a license under the Philips I<sup>2</sup>C Patent. Rights to use these components in a I<sup>2</sup>C system, is granted provided that the system conforms to the I<sup>2</sup>C Standard Specifications as defined by Philips.

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - China - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco  
The Netherlands - Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A.