

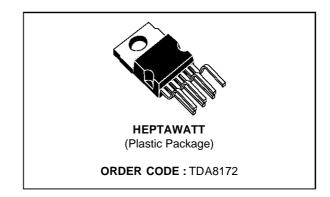


TV VERTICAL DEFLECTION OUTPUT CIRCUIT

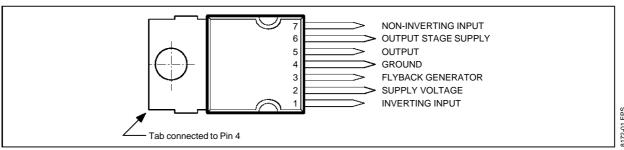
- POWER AMPLIFIER
- FLYBACK GENERATOR
- THERMAL PROTECTION

DESCRIPTION

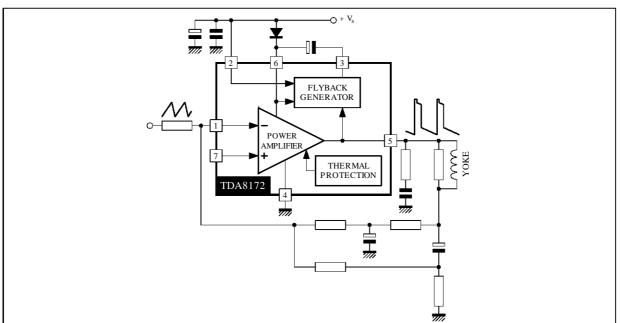
The TDA8172 is a monolithic integrated circuit in HEPTAWATTTM package. It is a high efficiency power booster for direct driving of vertical windings of TV yokes. It is intended for use in Color and B & W television as well as in monitors and displays.



PIN CONNECTIONS (top view)



BLOCK DIAGRAM



May 1996 1/5

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
Vs	Supply Voltage (pin 2)	35	V
V ₅ , V ₆	Flyback Peak Voltage	60	V
V ₃	Voltage at Pin 3	+ Vs	
V ₁ , V ₇	Amplifier Input Voltage	+ V _s - 0.5	V
lo	Output Peak Current (non repetitive, t = 2 ms)	2.5	Α
lo	Output Peak Current at f = 50 or 60 Hz, t ≤ 10 μs	3	Α
lo	Output Peak Current at f = 50 or 60 Hz, t > 10 μs	2	Α
l ₃	Pin 3 DC Current at V ₅ < V ₂	100	mA
l ₃	Pin 3 Peak to Peak Flyback Current at f = 50 or 60 Hz, t _{fly} ≤ 1.5 ms	3	Α
P _{tot}	Total Power Dissipation at T _{case} = 90 °C	20	W
T _{stg} , T _j	Storage and Junction Temperature	- 40, + 150	°C

THERMAL DATA

Symbol	Parameter	Value	Unit
R _{th (j-c)}	Thermal Resistance Junction-case Max.	3	°C/W

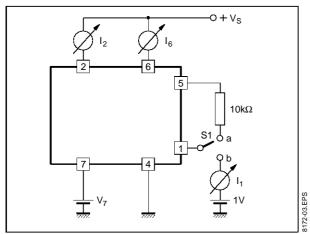
ELECTRICAL CHARACTERISTICS

(refer to the test circuits, $V_S = 35V$, $T_{amb} = 25$ °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Unit	Fig.
l ₂	Pin 2 Quiescent Current	$I_3 = 0, I_5 = 0$		8	16	mΑ	1a
l ₆	Pin 6 Quiescent Current	$I_3 = 0, I_5 = 0$		16	36	mΑ	1a
I ₁	Amplifier Input Bias Current	$V_1 = 1 \text{ V}, V_7 = 2 \text{ V}$		- 0.1	– 1	μΑ	1a
		$V_1 = 2 V, V_7 = 1 V$		- 0.1	– 1	μΑ	1a
V _{3L}	Pin 3 Saturation Voltage to GND	I ₃ = 20 mA		1	1.5	V	1c
V_5	Quiescent Output Voltage	$V_s = 35V, R_a = 39 k\Omega$		18		V	1d
V_{5L}	Output Saturation Voltage to GND	I ₅ = 1.2 A		1	1.4	V	1c
		I ₅ = 0.7 A		0.7	1	V	1c
V _{5H}	Output Saturation Voltage to Supply	- I ₅ = 1.2 A		1.6	2.2	V	1b
		$-I_5 = 0.7 A$		1.3	1.8	V	1b
Tj	Junction Temperature for Thermal Shut Down			140		°C	

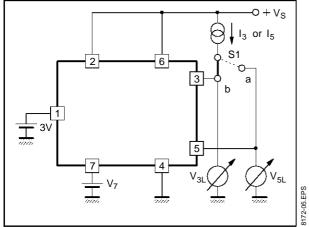
Figure 1 : DC Test Circuits.

Figure 1 a: Measurement of I_1 ; I_2 ; I_6



S₁: (a) I₂ and I₆; (b) I₁

Figure 1 c : Measurement of V_{3L} ; V_{5L}



S₁: (a) V_{3L}; (b) V_{5L}

Figure 1 b: Measurement of V_{5H}

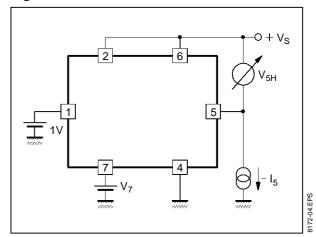


Figure 1 d: Measurement of V₅

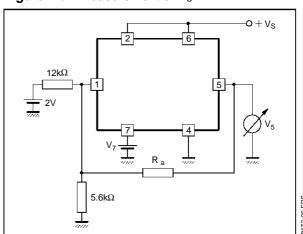
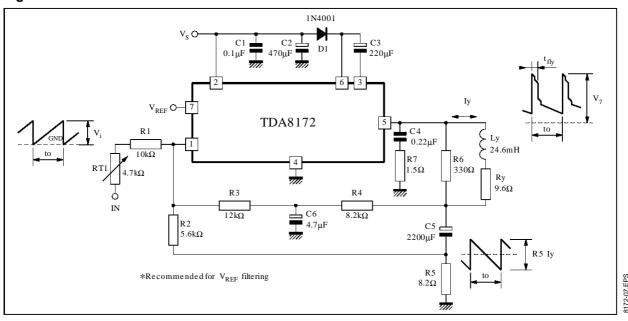


Figure 2: AC Test Circuit



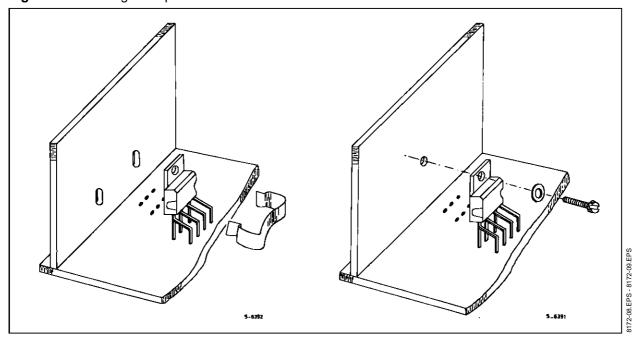
MOUNTING INSTRUCTIONS

The power dissipated in the circuit must be removed by adding an external heatsink. Thanks to the $\mathsf{HEPTAWATT}^\mathsf{TM}$ package attaching

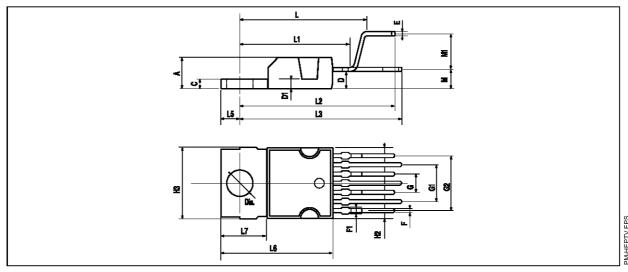
Thanks to the HEPTAWATT^{T INT} package attaching the heatsink is very simple, a screw or a compression spring (clip) being sufficient.

Between the heatsink and the package it is better to insert a layer of silicon grease, to optimize the thermal contact; no electrical isolation is needed between the two surfaces, since the tab is connected to Pin 4 which is ground.

Figure 3: Mounting Examples



PACKAGE MECHANICAL DATA: 9 PINS - PLASTIC HEPTAWATT



Dimensions		Millimeters			Inches	
Dimensions	Min.	Тур.	Max.	Min.	Тур.	Max.
Α			4.8			0.189
С			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		08	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

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