

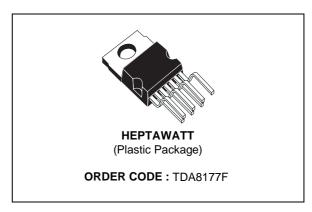
TDA8177F

VERTICAL DEFLECTION BOOSTER

- POWER AMPLIFIER
- THERMAL PROTECTION
- OUTPUT CURRENT UP TO 3.0APP
- FLYBACK VOLTAGE UP TO 70V (on Pin 5)
- SUITABLE FOR DC COUPLING APPLICATION
- EXTERNAL FLYBACK SUPPLY

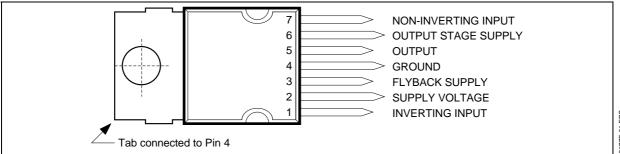
DESCRIPTION

Designed for monitors and high performance TVs, the TDA8177F vertical deflection booster can handle flyback voltage up to 70V. More than this it is possible to have a flyback voltage which is more than the double of the supply (Pin 2). This allows to decrease the power consumption or to decrease the flyback time for a given supply voltage.

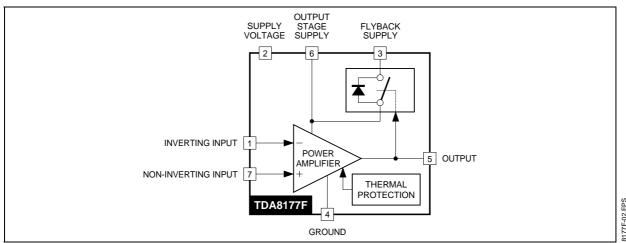


The TDA8177F operates with supplies up to 35V and provides up to 3APP output current to drive the yoke. The TDA8177F is offered in HEPTAWATT package.

PIN CONNECTIONS



BLOCK DIAGRAM



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ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
Vs	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
lo	Maximum Output Peak Current (see notes 2 and 3)	2.5	Α
l ₃	Maximum Sink Current (t < 1ms)	2.5	Α
l ₃	Maximum Source Current (t < 1ms) (in the diode, see Block Diagram)	2.5	Α
$V_{ESD1} \ V_{ESD2}$	ESD Susceptibility Tool Model (see note 4) Human Model (see note 5)	300 2	V kV
V ₃ - V ₂	Voltage Difference between Flyback Supply and Supply Voltage	50	V
V ₃ , V ₅ , V ₆	Min. Voltage (see note 1)	-0.4	V
T _{oper}	Operating Ambient Temperature	- 20, + 75	°C
T _{stg}	Storage Temperature	- 40, + 150	°C
Tj	Junction Temperature	+150	°C

Notes: 1. Versus Pin 4.

- Versus First.
 The output current can reach 4A peak for t ≤ 10μs (up to 120Hz).
 Provided SOAR is respected (see Figures 1 and 2).
 Equivalent to discharging a 200pF capacitor through a 0Ω series resistor.
 Equivalent to discharging a 150pF 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
Tt	Temperature for Thermal Shutdown	150	°C
ΔT_t	Hysteresis on T _t	10	°C
T _{jr}	Recommended Max. Junction Temperature	120	°C

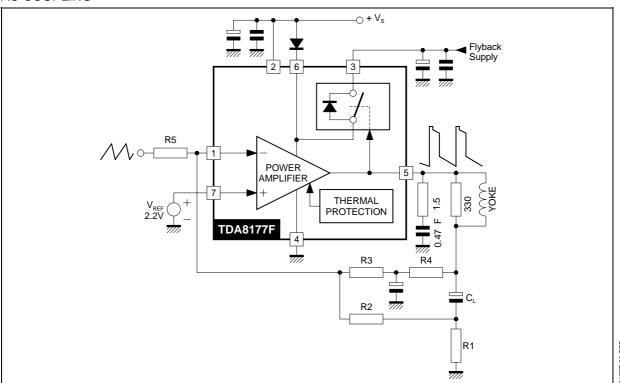
ELECTRICAL CHARACTERISTICS

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

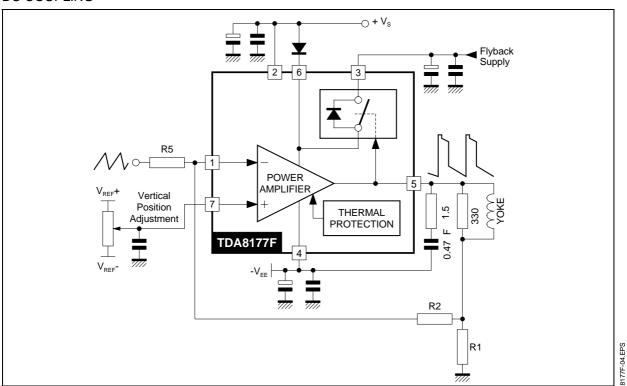
Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Unit
Vs	Operating Supply Voltage Range		10		35	V
V _{3M}	Operating Flyback Supply Voltage		Vs		70	V
l ₂	Pin 2 Quiescent Current	$I_3 = 0, I_5 = 0$		10	20	mA
I ₆	Pin 6 Quiescent Current	$I_3 = 0, I_5 = 0$		25	35	mA
Ιο	Max. Scanning Peak Output Current				1.5	Α
l ₁	Amplifier Bias Current	$V_1 = 20V, V_7 = 21V$		- 0.4	- 2	μΑ
l ₇	Amplifier Bias Current	$V_1 = 21V, V_7 = 20V$		- 0.4	- 2	μΑ
V _{IO}	Offset Voltage			0	7	mV
$\Delta V_{IO}/dt$	Offset Drift versus Temperature			- 10		μV/°C
GV	Voltage Gain		80			dB
V _{5L}	Output Saturation Voltage to GND (Pin 4)	I ₅ = 1.5A		1.0	2	V
V _{5H}	Output Saturation Voltage to Supply (Pin 6)	I ₅ = - 1.5A		1.7	2.5	V
V _{D5 - 6}	Diode Forward Voltage between Pins 5-6	I ₅ = 1.5A		1.5	2.1	V
V _{D3 - 6}	Diode Forward Voltage between Pins 3-6	I ₃ = 1.5A		2.3	3	V
V ₃₋₆	Voltage Drop between Pins 3-6 (2nd part of flyback)	I ₃ = - 1.5A		4	5	V

APPLICATION CIRCUITS

AC COUPLING



DC COUPLING



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Figure 1: Output Transistors SOA (for secondary breakdown)

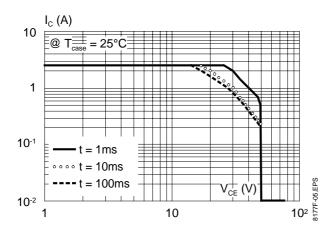
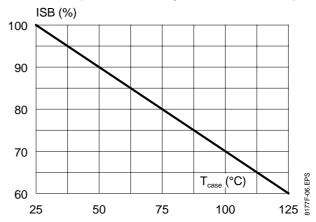
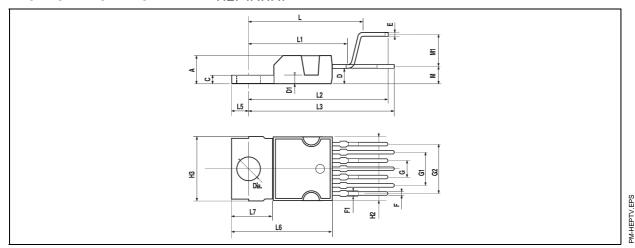


Figure 2: Secondary Breakdown Temperature
Derating Curve
(ISB = secondary breakdown current)



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PACKAGE MECHANICAL DATA: HEPTAWAT



Dimonolono		Millimeters			Inches	
Dimensions	Min.	Тур.	Max.	Min.	Тур.	Max.
А			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
Е	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
М		2.8			0.110	
M1		5.08			0.200	
Dia.	3.65		3.85	0.144		0.152

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