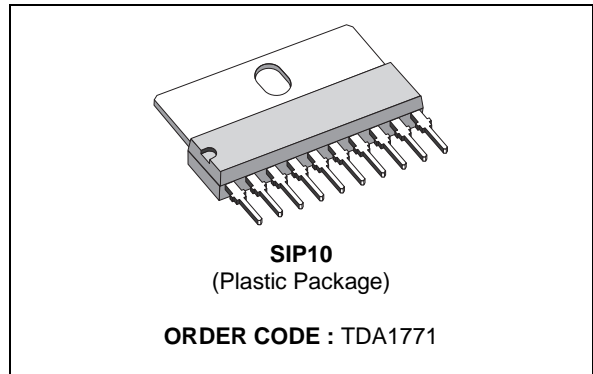


VERTICAL DEFLECTION CIRCUIT

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

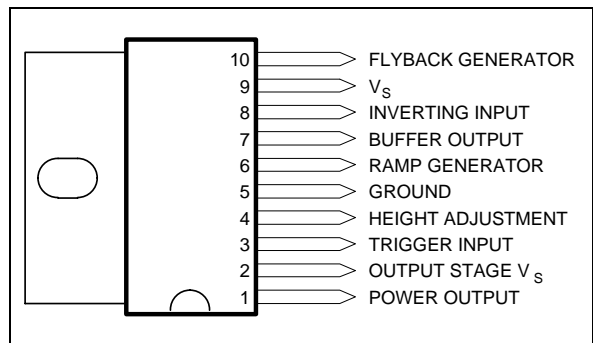


DESCRIPTION

The TDA1771 is a monolithic integrated circuit in SIP10 package.

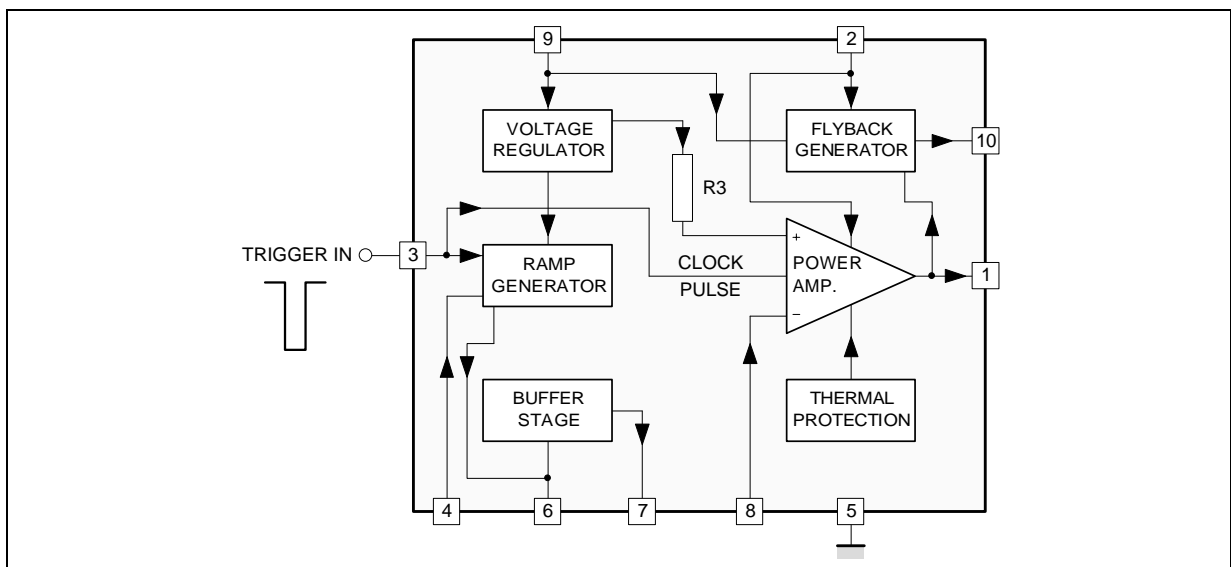
It is a full performance and very efficient vertical deflection circuit intended for direct drive of a TV picture tube in Color and B & W television as well as in Monitor and Data displays.

PIN CONNECTIONS (top view)



1771-01.EPS

BLOCK DIAGRAM



1771-02.EPS

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 ₀	Output Peak to Peak Current (non repetitive t = 2ms)	6	A
I ₀	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 _{fly} < 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 _{f5}	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

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

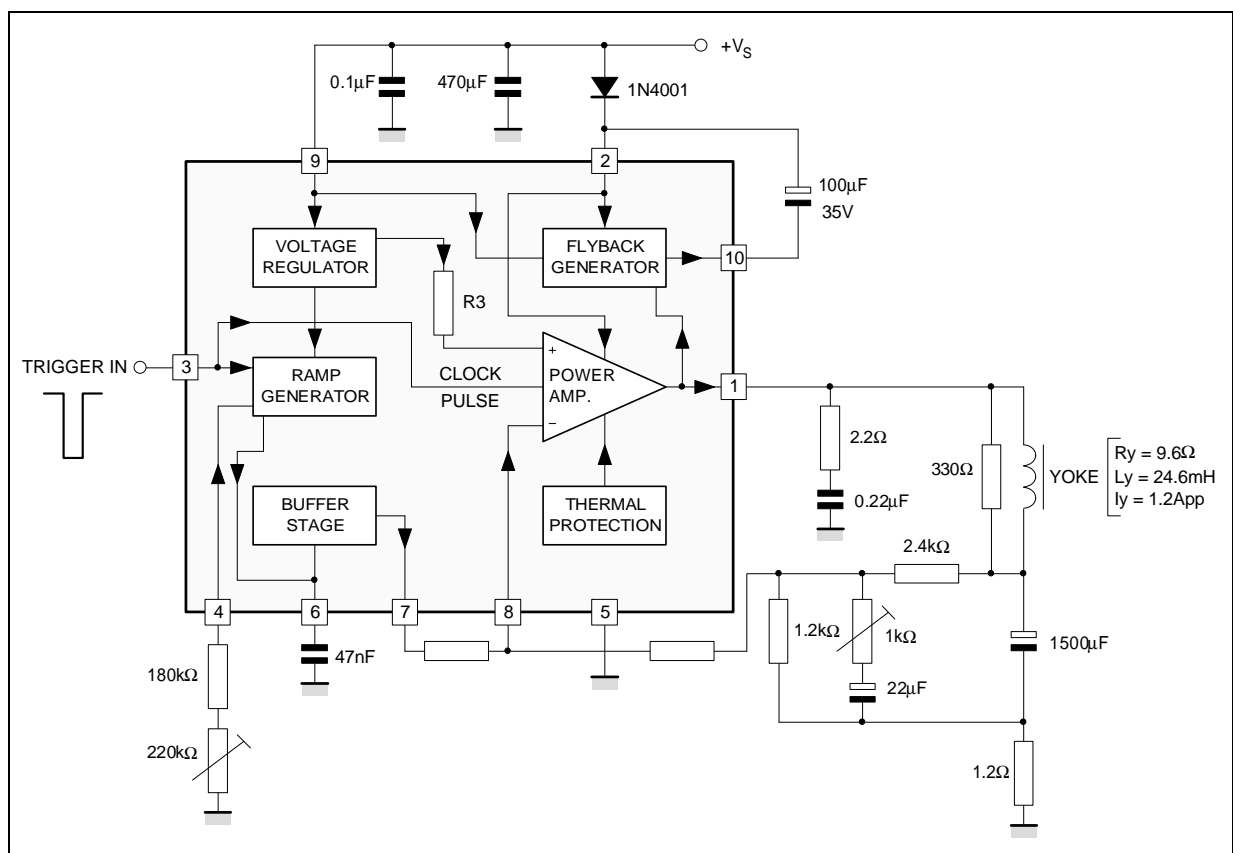
2. $th = \frac{1.2 \cdot t_s}{V_{PP}}$ where t_s is the vertical period and V_{PP} is ramp amplitude at Pin 6

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	$I_Y = 2.4A_{pp}$		315		mA
V_1	Flyback Voltage	$I_Y = 2.4A_{pp}$		51		V
V_7	Sawtooth Pedestall Voltage			1.85		V
T_{JS}	Junction Temp. for Thermal Shutdown			145		$^{\circ}\text{C}$

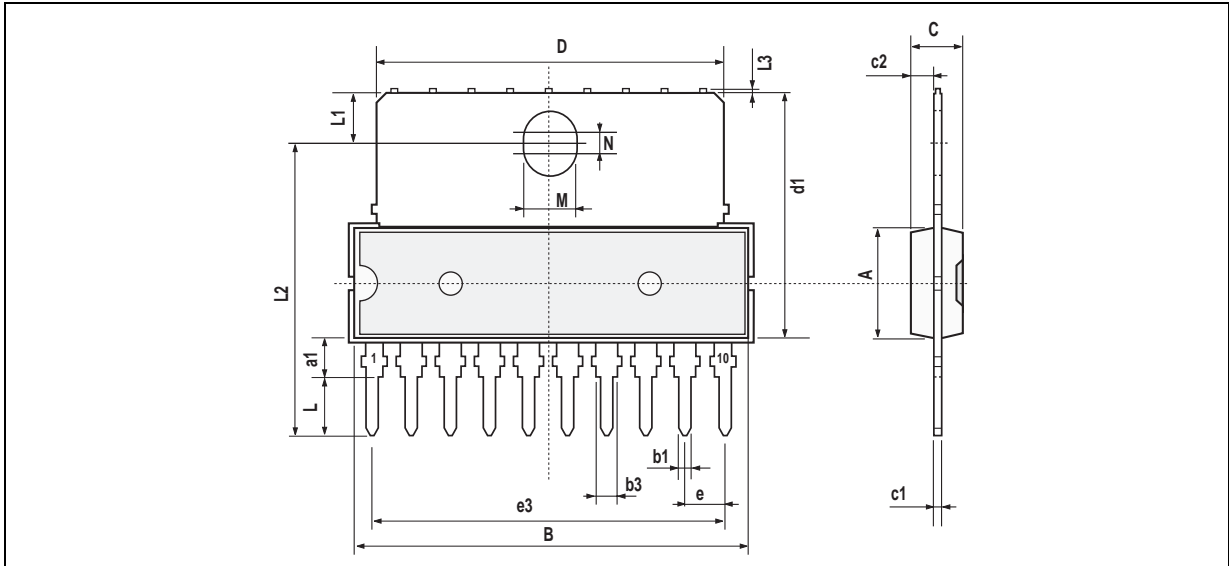
1771-04.TBL

APPLICATION CIRCUIT



1771-03.EPS

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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