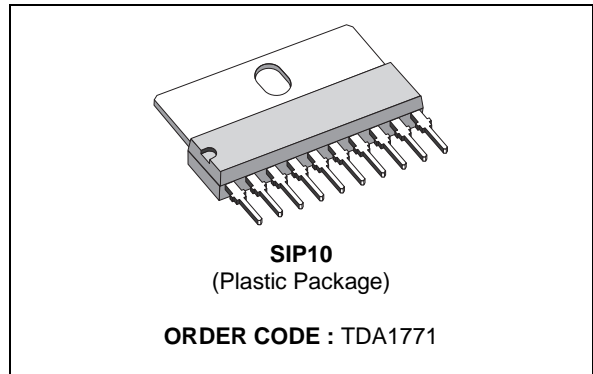
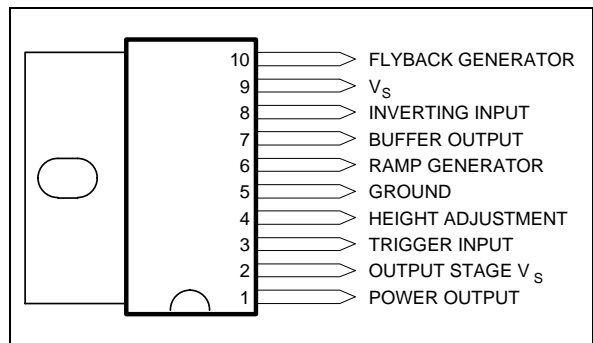


**VERTICAL DEFLECTION CIRCUIT**

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



**PIN CONNECTIONS (top view)**

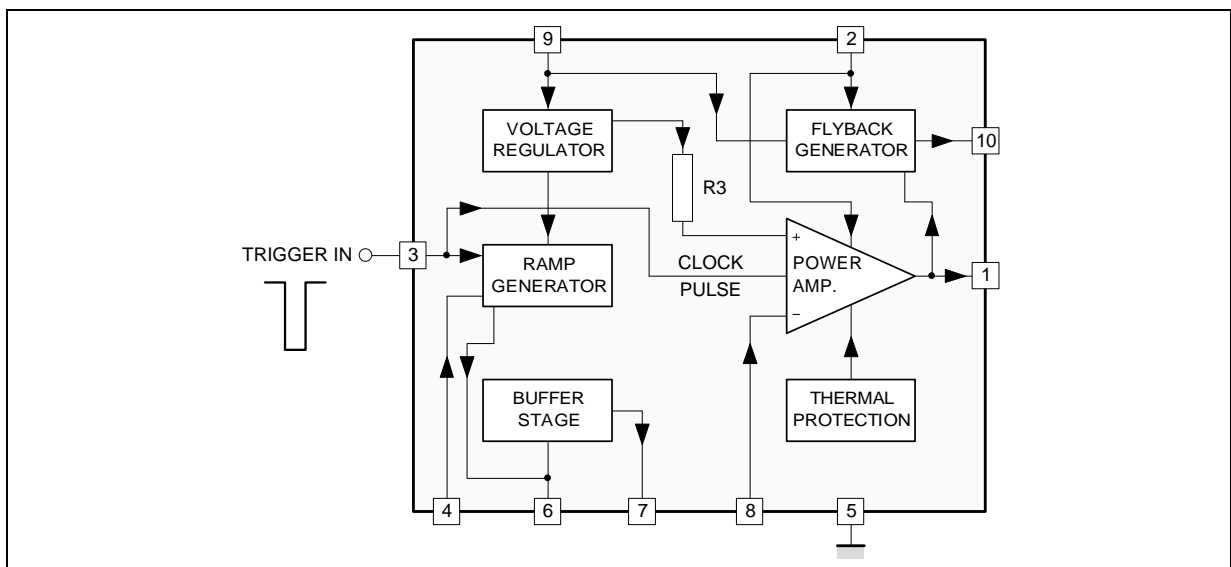


**DESCRIPTION**

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.

**BLOCK DIAGRAM**



## ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V <sub>S</sub>	Supply Voltage	30	V
V <sub>1</sub> , V <sub>2</sub>	Flyback Peak Voltage	65	V
V <sub>3</sub>	Trigger Input Voltage	20	V
V <sub>8</sub>	Amplifier Input Voltage	GND to V <sub>S</sub>	V
I <sub>0</sub>	Output Peak to Peak Current (non repetitive t = 2ms)	6	A
I <sub>0</sub>	Output Peak to Peak Current t > 10μs	4	A
I <sub>10</sub>	Pin 10 DC Current at V <sub>1</sub> < V <sub>9</sub>	100	mA
I <sub>10</sub>	Pin 10 Peak to Peak Current @ t <sub>fly</sub> < 1.5ms	3	A
P <sub>tot</sub>	Total Power Dissipation @ T <sub>tab</sub> = 60°C	9	W
T <sub>S</sub> , T <sub>J</sub>	Storage and Junction Temperature	- 40, + 150	°C

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## THERMAL DATA

Symbol	Parameter	Value	Unit
R <sub>th(j-tab)</sub>	Thermal Resistance Junction-tab	Max. 10	°C/W
R <sub>th(j-a)</sub>	Thermal Resistance Junction-ambient	Max. 70	°C/W

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ELECTRICAL CHARACTERISTICS (T<sub>amb</sub> = 25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
DC (V <sub>S</sub> = 30V)						
I <sub>2</sub>	Pin 2 Quiescent Current	I <sub>1</sub> = 0, I <sub>10</sub> = 0		16	36	mA
I <sub>9</sub>	Pin 9 Quiescent Current	I <sub>1</sub> = 0, I <sub>10</sub> = 0		15	30	mA
- I <sub>6</sub>	Ramp Generator Bias Current	V <sub>6</sub> = 0			0.5	μA
- I <sub>6</sub>	Ramp Generator Current	V <sub>6</sub> = 0, - I <sub>4</sub> = 20μA	18.5	20	21.5	μA
dI <sub>6</sub> /I <sub>6</sub>	Ramp Gener. Linearity	V <sub>6</sub> = 0 to 15V, - I <sub>4</sub> = 20μA		0.2	1	%
V <sub>1</sub>	Quiescent Output Voltage	R <sub>a</sub> = 30kΩ, R <sub>b</sub> = 10kΩ, V <sub>S</sub> = 30V	17.0	17.8	18.6	V
		R <sub>a</sub> = 6.8kΩ, R <sub>b</sub> = 10kΩ, V <sub>S</sub> = 15V	7.2	7.5	7.8	V
V <sub>1L</sub>	Out Saturation Voltage to GND	I <sub>1</sub> = 0.5A		0.5	1	V
		I <sub>1</sub> = 1.2A		1	1.4	V
V <sub>1H</sub>	Out Saturation Voltage to V <sub>S</sub>	- I <sub>1</sub> = 0.5A		1.1	1.6	V
		- I <sub>1</sub> = 1.2A		1.6	2.2	V
V <sub>4</sub>	Reference Voltage	- I <sub>4</sub> = 20μA	6.3	6.6	6.9	V
dV <sub>4</sub> /V <sub>S</sub>	Reference Voltage Drift Versus V <sub>S</sub>	V <sub>S</sub> = 10V to 30V		1	2	mV/V
dV <sub>4</sub> /dI <sub>4</sub>	Reference Voltage Drift Versus I <sub>4</sub>	I <sub>4</sub> = 10μA to 30μA		1.5	2	mV/μA
V <sub>r</sub>	Internal Ref. Voltage		4.26	4.40	4.54	V
G <sub>v</sub>	Output Stage Open Loop Gain	f = 100Hz		60		dB
V <sub>f5</sub>	V <sub>9-10</sub> Saturation Voltage	- I <sub>10</sub> = 1.2A		1.5	2.5	V
V <sub>10</sub>	Pin 10 Scanning Voltage	I <sub>10</sub> = 20mA		1.7	3	V
V <sub>3</sub>	Trigger Input Threshold	(see note 1)	2.6	3.0	3.4	V
I <sub>3</sub>	Trigger Input Bias Current	V <sub>IN</sub> = V <sub>3</sub> - 0.2V			30	μA
t <sub>3</sub>	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.

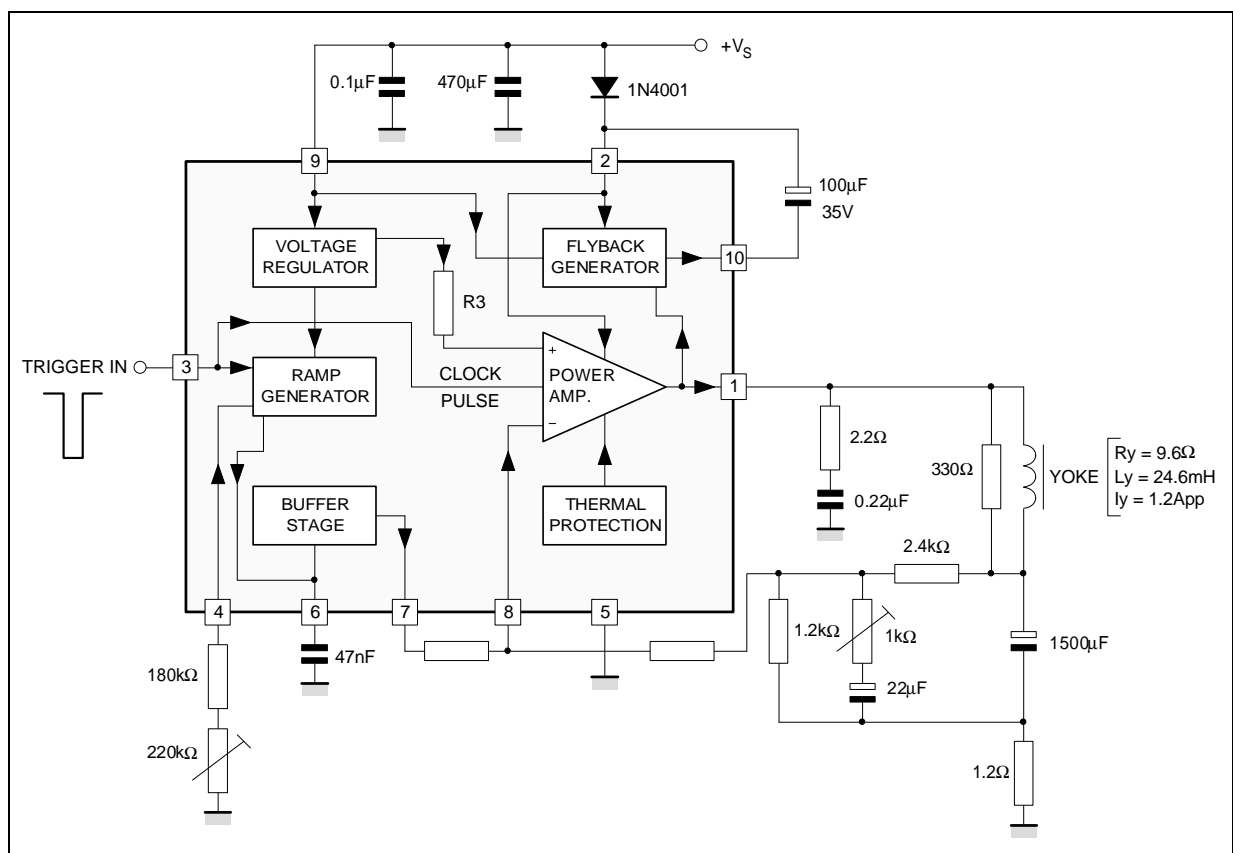
2.  $th = \frac{1.2 \cdot t_s}{V_{PP}}$  where  $t_s$  is the vertical period and  $V_{PP}$  is ramp amplitude at Pin 6

**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		$^{\circ}\text{C}$

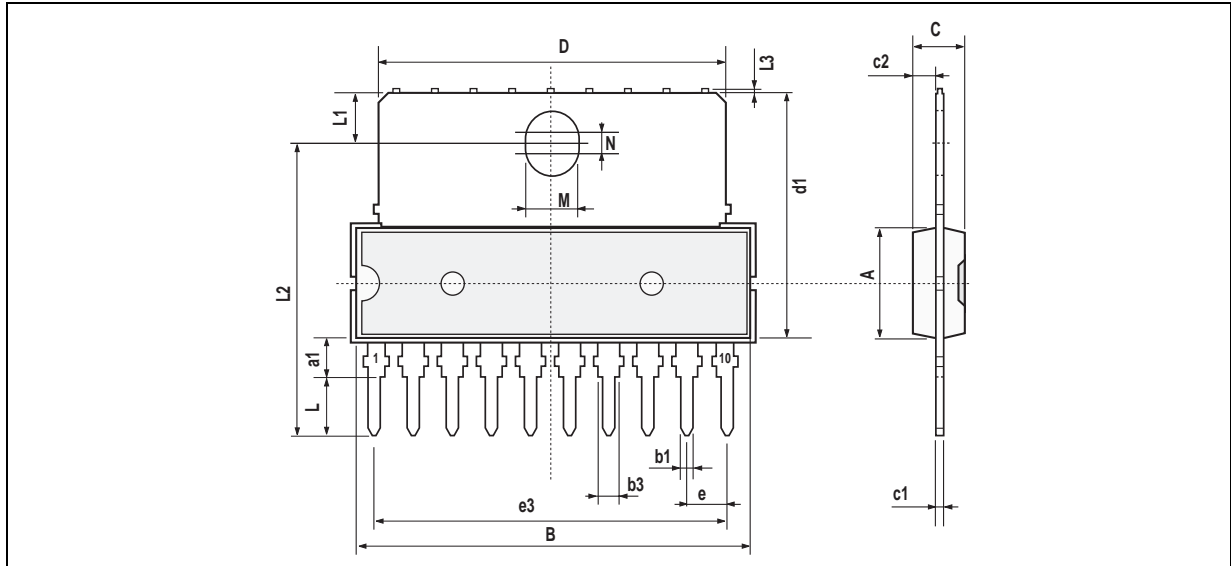
1771-04.TBL

**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	

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