



TDA8174A
TDA8174AW

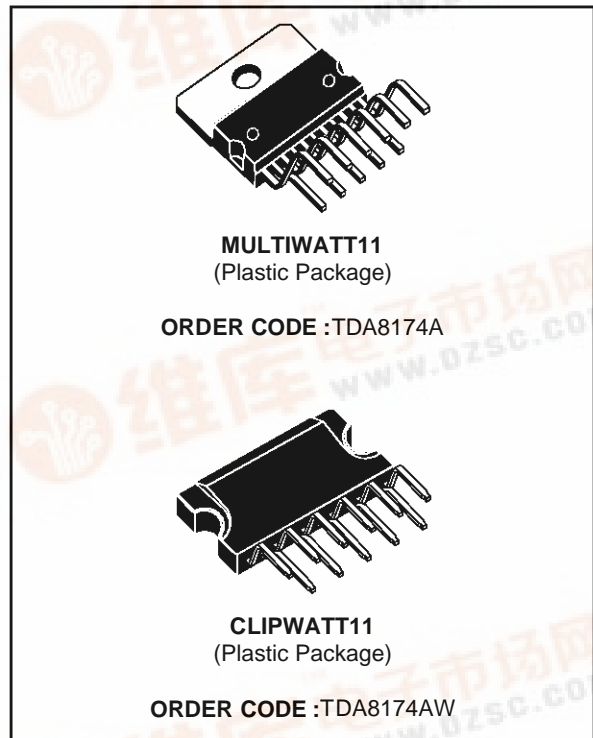
VERTICAL DEFLECTION CIRCUIT

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

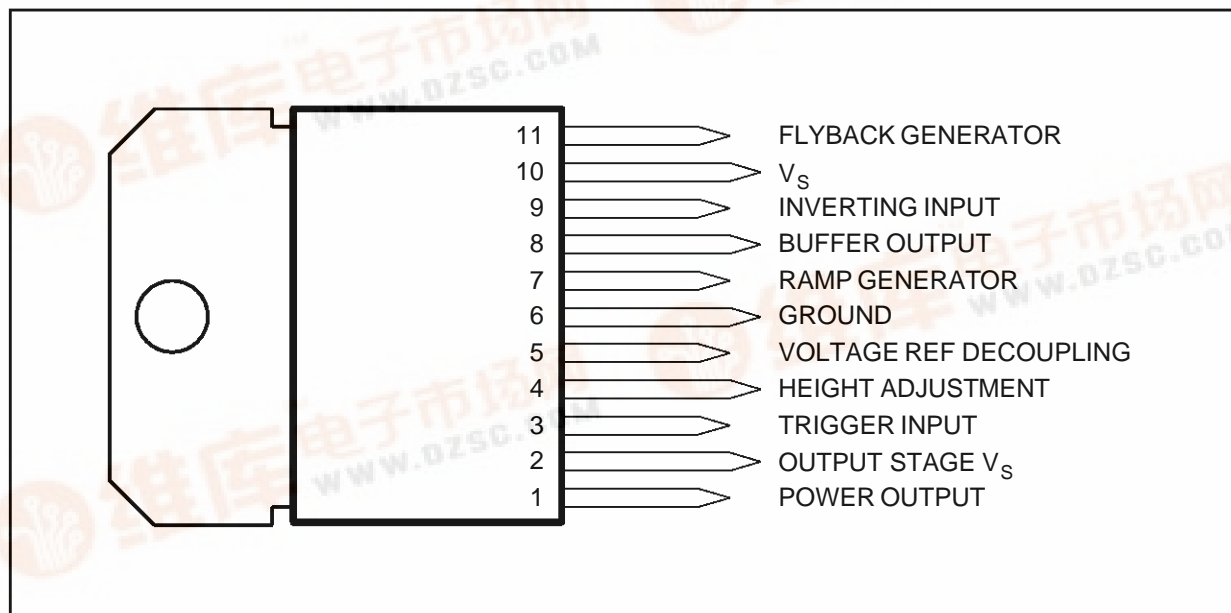
DESCRIPTION

TDA8174A and TDA8174AW are a monolithic integrated circuits.

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.



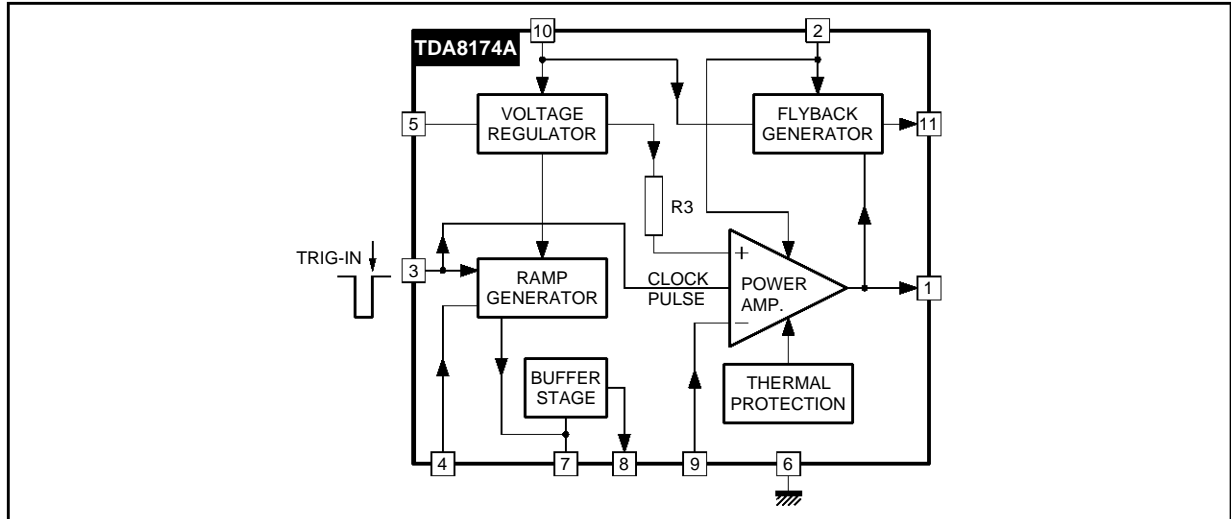
PIN CONNECTIONS (top view)



8174A-01.EPS

TDA8174A - TDA8174AW

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_S	Supply Voltage	35	V
V_1, V_2	Flyback Peak Voltage	65	V
V_3	Trigger Input Voltage	20	V
V_9	Amplifier Input Voltage	GND, V_S	V
I_0	Output Peak-to-peak Current (non repetitive $t = 2\text{ms}$)	6	A
I_0	Output Peak-to-peak Current $t > 10\mu\text{s}$	4	A
I_{11}	Pin 11 DC Current at $V_1 < V_{10}$	100	mA
I_{11}	Pin 11 Peak-to-peak Current @ $t_{\text{fly}} < 1.5\text{ms}$	3	A
P_{tot}	Total Power Dissipation @ $T_{\text{tab}} = 60^\circ\text{C}$	30	W
T_{stg}	Storage Temperature	-40, +150	$^\circ\text{C}$
T_j	Junction Temperature	0, +150	$^\circ\text{C}$
T_{amb}	Ambient Temperature	0, +70	$^\circ\text{C}$

THERMAL DATA

Symbol	Parameter	Value	Unit
$R_{\text{th(j-tab)}}$	Thermal Resistance Junction-tab	Max. 3	$^\circ\text{C/W}$
$R_{\text{th(j-a)}}$	Thermal Resistance Junction-ambient	Max. 40	$^\circ\text{C/W}$

DC ELECTRICAL CHARACTERISTICS ($V_S = 35\text{V}$; $T_{\text{amb}} = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_2	Pin 2 Quiescent Current	$I_1 = 0, I_{11} = 0$		16	36	mA
I_{10}	Pin 10 Quiescent Current	$I_1 = 0, I_{11} = 0$		15	30	mA
$-I_7$	Ramp Generator Bias Current	$V_7 = 0$			0.5	μA
$-I_7$	Ramp Generator Current	$V_7 = 0, -I_4 = 20\mu\text{A}$	18.5	20	21.5	μA
dl_7/I_7	Ramp Generator Linearity	$V_6 = 0$ to $15\text{V}, -I_4 = 20\mu\text{A}$		0.2	1	%
V_1	Quiescent Output Voltage	$R_a = 30\text{k}\Omega, R_b = 10\text{k}\Omega, V_S = 35\text{V}$	17.0	17.8	18.6	V
		$R_a = 6.8\text{k}\Omega, R_b = 10\text{k}\Omega, V_S = 15\text{V}$	7.2	7.5	7.8	V
V_{1L}	Out Saturation Voltage to GND	$I_1 = 0.5\text{A}$		0.5	1	V
		$I_1 = 1.2\text{A}$		1	1.4	V
V_{1H}	Out Saturation Voltage to V_S	$-I_1 = 0.5\text{A}$		1.1	1.6	V
		$-I_1 = 1.2\text{A}$		1.6	2.2	V

DC ELECTRICAL CHARACTERISTICS (continued)

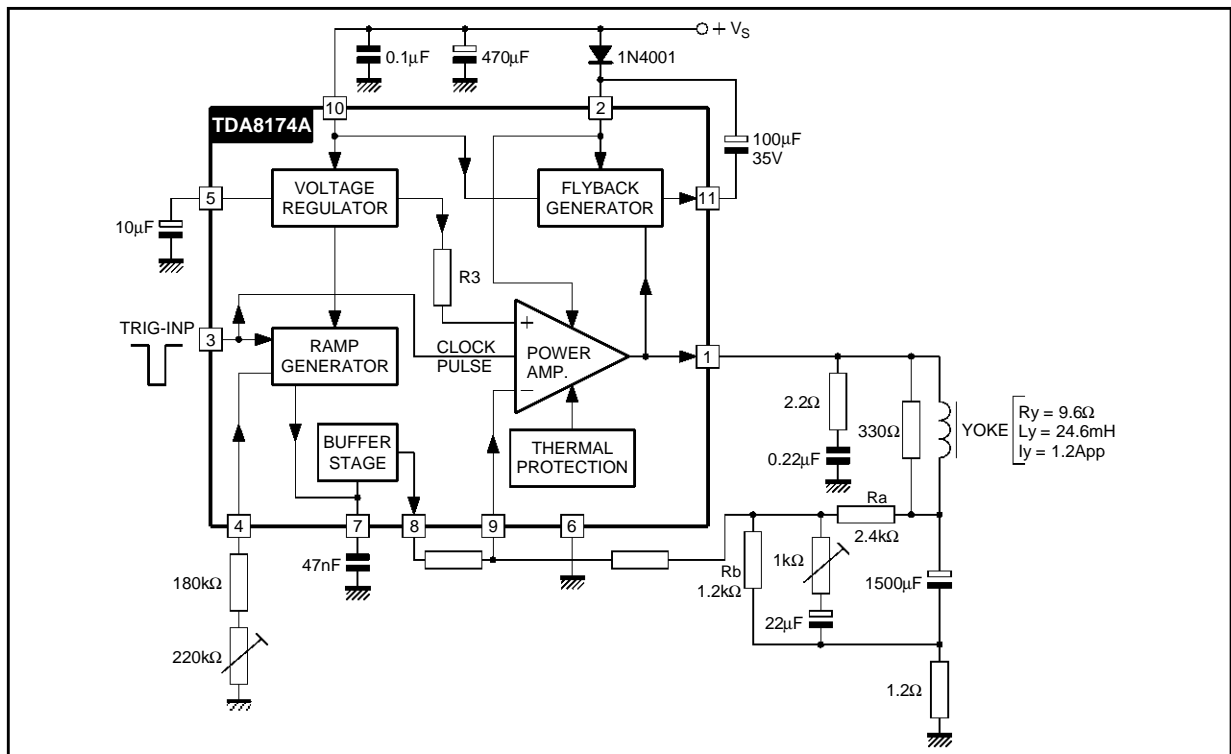
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V ₄	Reference Voltage	-I ₄ = 20μA	6.3	6.6	6.9	V
dV ₄ /V _s	Reference Voltage Drift Versus V _s	V _s = 10V to 35V		1	2	mV/V
dV ₄ /dI ₄	Reference Voltage Drift Versus I ₄	I ₄ = 10μA to 30μA		1.5	2	mV/μA
V ₅	Internal Reference Voltage		4.25	4.45	4.65	V
V _{D11-10}	Diode Fwd Voltage	I _D = 1.2A		2.2	3	V
V _{D1-2}	Diode Fwd Voltage	I _D = 1.2A		2.2	3	V
G _V	Output Stage Open Loop Gain	f = 100Hz		60		dB
V _{fs}	V ₁₀₋₁₁ Saturation Voltage	-I ₁₁ = 1.2A		1.5	2.5	V
V ₁₁	Pin 11 Scanning Voltage	I ₁₁ = 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

- Notes : 1. The trigger input circuit can accept, with a metal option, positive and negative going input pulses.
 2. $T_h = \frac{1.2 \cdot T_s}{V_{PP}}$ where : T_s is the vertical period and V_{PP} is ramp amplitude at Pin7

AC ELECTRICAL CHARACTERISTICS (V_s = 24V ; T_{amb} = 25°C unless otherwise specified)

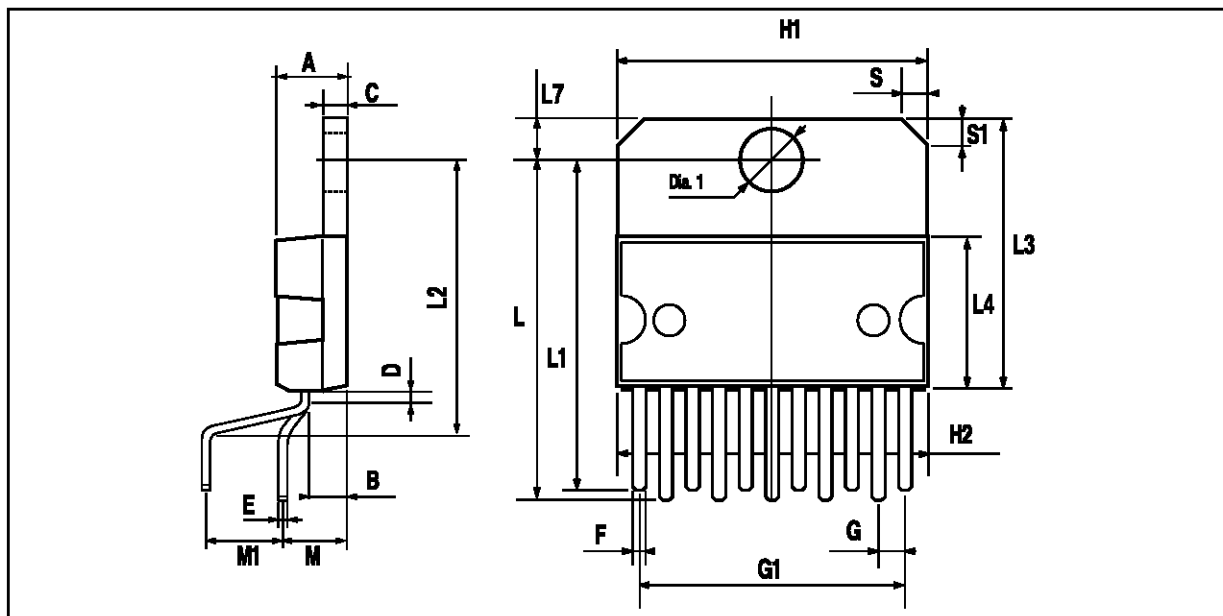
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V _s	Operating Supply Voltage Range		10		30	V
I ₁	Peak-to-peak Operating Current Range		0.4			A
I _s	Supply Current	I _y = 2.4A _{pp}		315		mA
V ₁	Flyback Voltage	I _y = 2.4A _{pp}		51		V
V ₈	Sawtooth Pedestall Voltage			1.85		V
T _{js}	Junction Temp. for Thermal Shutdown			145		°C

APPLICATION CIRCUIT



TDA8174A - TDA8174AW

PACKAGE MECHANICAL DATA 11 PINS - PLASTIC MULTIWATT



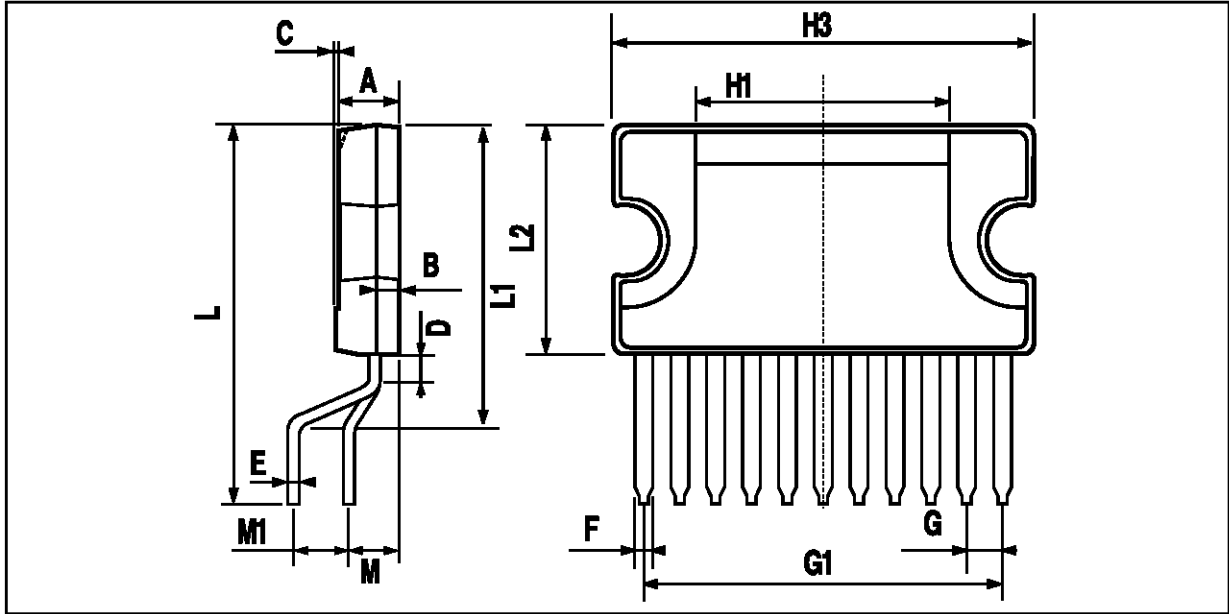
PM-MW11V-EPS

Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			5			0.197
B			2.65			0.104
C			1.6			0.063
D		1			0.039	
E	0.49		0.55	0.019		0.022
F	0.88		0.95	0.035		0.037
G	1.45	1.7	1.95	0.057	0.067	0.077
G1	16.75	17	17.25	0.659	0.669	0.679
H1	19.6			0.772		
H2			20.2			0.795
L	21.9	22.2	22.5	0.862	0.874	0.886
L1	21.7	22.1	22.5	0.854	0.87	0.886
L2	17.4		18.1	0.685		0.713
L3	17.25	17.5	17.75	0.679	0.689	0.699
L4	10.3	10.7	10.9	0.406	0.421	0.429
L7	2.65		2.9	0.104		0.114
M	4.25	4.55	4.85	0.167	0.179	0.191
M1	4.73	5.08	5.43	0.186	0.200	0.214
S	1.9		2.6	0.075		0.102
S1	1.9		2.6	0.075		0.102
Dia. 1	3.65		3.85	0.144		0.152

MM11V-TBL

PACKAGE MECHANICAL DATA

11 PINS - PLASTIC CLIPWATT



PM-CW11EPS

Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			3.10			0.122
B			1.10			0.04
C		0.15			0.006	
D		1.50			0.059	
E		0.52			0.02	
F		0.80			0.03	
G		1.70			0.066	
G1		17.00			0.66	
H1		12.00			0.48	
H3		20.00			0.79	
L		17.90			0.70	
L1		14.40			0.57	
L2		11.00			0.43	
M		2.54			0.1	
M1		2.54			0.1	

CW11.TBL

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