



LA7875N, 7876N

Vertical Deflection Output Circuit

Overview

The LA7875N, LA7876N are designed for use in internet TVs and high-resolution CRT monitors that require a narrow vertical return period. These ICs succeed in achieving a narrow vertical return period by adopting a new 3× pump-up technique in the voltage pump-up circuit. Since this allows the use of a reference voltage lower than that used with the 2× pump-up technique, the LA7875N, LA7876N achieve a significant reduction in power dissipation. Also, since the bus control system signal-processing IC can control these ICs and these ICs can directly drive the deflection yoke for all frequencies down to DC from the sawtooth wave output, shift operation, which is required for wide aspect ratio television, can be controlled from the bus. Since the LA7875N has a maximum deflection output current of 2.2 A p-p, it is appropriate for use in medium-size CRTs. Since the LA7876N has a maximum deflection output current of 3 A p-p, it is appropriate for use in larger CRTs.

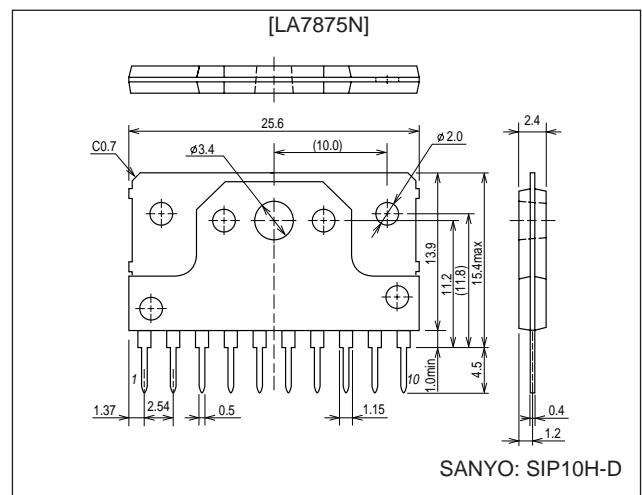
Features

- 3× voltage pump-up circuit
- Low power dissipation
- Operational amplifier type vertical output circuit
- Capable of direct DC drive of the deflection yoke
- Excellent crossover characteristics

Package Dimensions

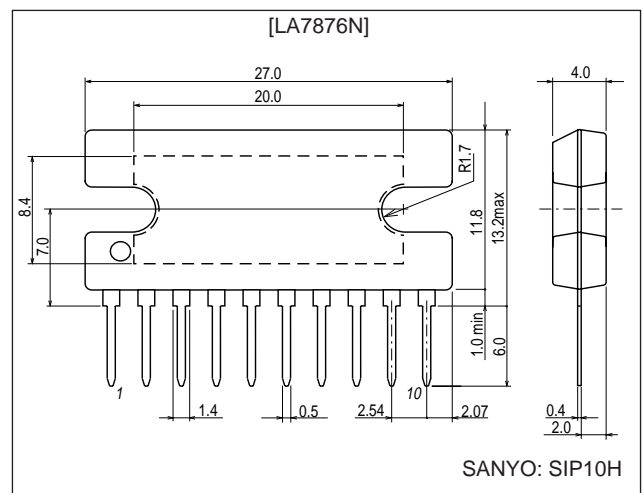
unit: mm

3248-SIP10H-D



unit: mm

3024A-SIP10H



■ Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications.

■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

Specifications

Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
First pump-up supply voltage	V_{CC7max}		35	V
Second pump-up supply voltage	V_{CC9max}		72	V
Output block supply voltage	V_{CC4max}		110	V
Allowable power dissipation	P_{dmax}	With an arbitrarily large heat sink	12	W
Deflection output current	I_{3max}		-1.5 to +1.5 (-1.9 to +1.9)	Ap-o
Thermal resistance	θ_{j-c}		4 (3)	$^\circ\text{C/W}$
Operating temperature	T_{opr}		-20 to +85	$^\circ\text{C}$
Storage temperature	T_{stg}		-40 to +150	$^\circ\text{C}$

Note: Values in parentheses apply to the LA7876N.

Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC7}		30	V
Operating supply voltage range	V_{CC7op}		16 to 33	V
Recommended deflection output current	I_{3p-p}		Up to 2.2 (Up to 3)	Ap-p

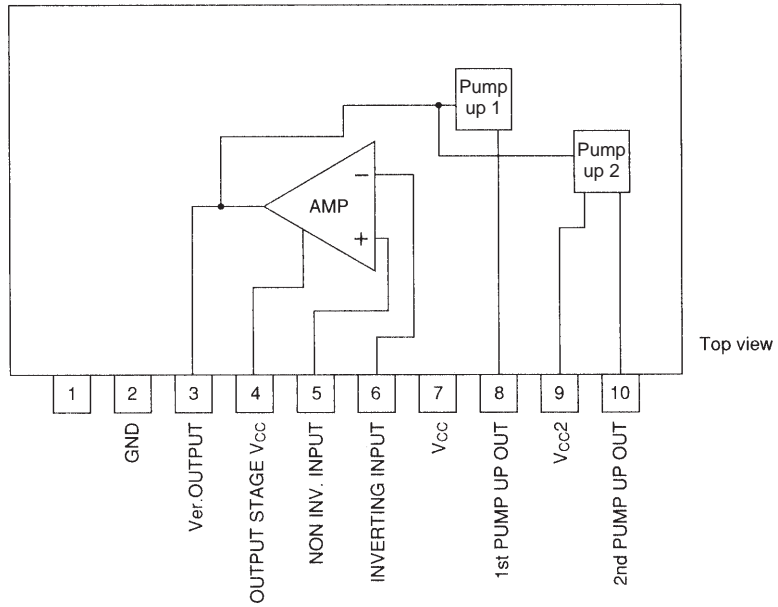
Note: Values in parentheses apply to the LA7876N.

Operating Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC8} = 30\text{ V}$

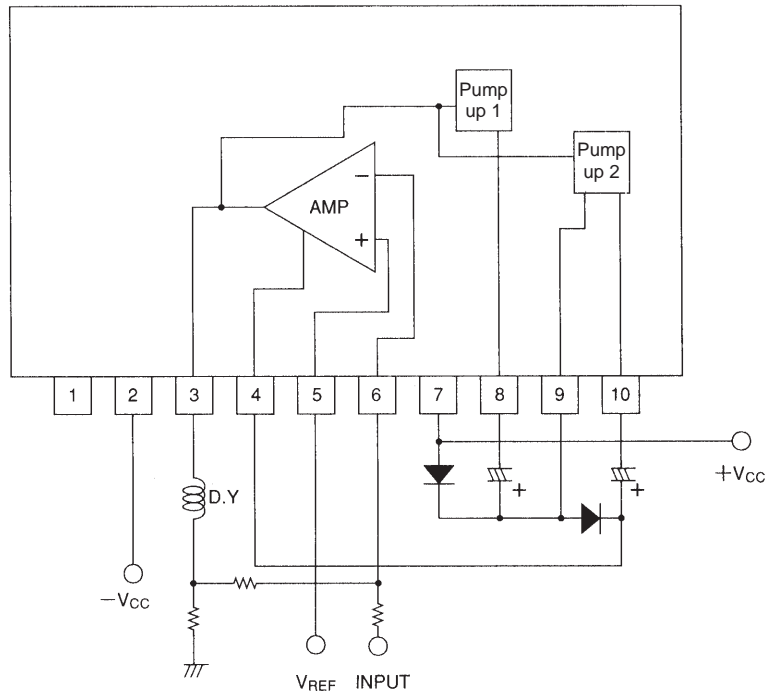
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Pump-up circuit 1 charge saturation voltage	$V(\text{sat})_{8-2}$	$I_8 = 20\text{ mA}$			1.8	V
Pump-up circuit 1 discharge saturation voltage	$V(\text{sat})_{7-8}$	$I_8 = -1.1\text{ A} (-1.5\text{ A})$			3.2	V
Pump-up circuit 2 charge saturation voltage	$V(\text{sat})_{10-2}$	$I_{10} = 20\text{ mA}$			1.8	V
Pump-up circuit 2 discharge saturation voltage	$V(\text{sat})_{9-10}$	$I_{10} = -1.1\text{ A} (-1.5\text{ A})$			3.2	V
Deflection output saturation voltage (lower)	$V(\text{sat})_{3-2}$	$I_3 = 1.1\text{ A} (1.5\text{ A})$			1.5 (1.7)	V
Deflection output saturation voltage (upper)	$V(\text{sat})_{4-3}$	$I_3 = -1.1\text{ A} (-1.5\text{ A})$			3.5 (3.9)	V
Idling current	IDL		35		70	mA
Midpoint voltage	V_{MID}		14	15	16	V

Note: Values in parentheses apply to the LA7876N.

Pin Assignment and Block Diagram



Sample Application Circuit (using both positive and negative power supply voltages)



- Specifications of any and all SANYO products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.
- SANYO Electric Co., Ltd. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.
- In the event that any or all SANYO products (including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.
- No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of SANYO Electric Co., Ltd.
- Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the SANYO product that you intend to use.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

This catalog provides information as of June, 1999. Specifications and information herein are subject to change without notice.