

**LA7950****TV Field Frequency Discriminator****Overview**

The LA7950 is an IC designed to discriminate the field frequency based on the relation between TV vertical signal and horizontal signal. It is suited for use in automatically setting various types of video equipment, such as color TV, to PAL/NTSC mode.

**Functions**

- Sync separation.
- Field frequency counter.
- Vertical sync separation.
- Forced (manual) output select.

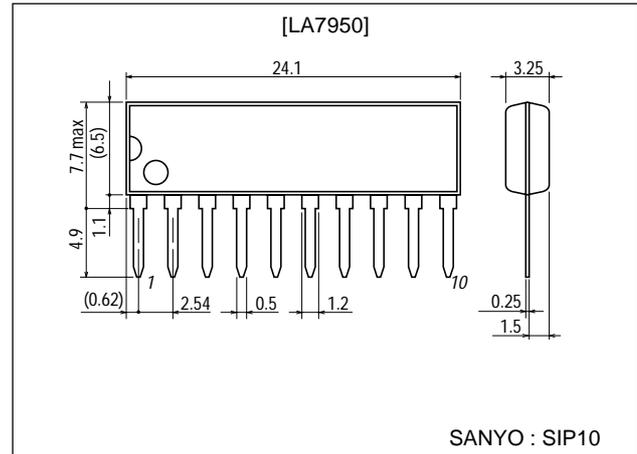
**Features**

- Small-sized package (SIP10).
- Stable to external disturbance such as noise.
- Many output pins for mode select (4 outputs).
- Wide operating voltage range (6 to 13V).

**Package Dimensions**

unit:mm

3043B-SIP10

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_2 \text{ max}$		14	V
Load current	$I_{7, 8, 9, 10}$		20	mA
Allowable power dissipation	$P_d \text{ max}$	$T_a \leq 60^\circ\text{C}$	300	mW
Operating temperature	$T_{opr}$		-20 to +85	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-40 to +125	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	$V_2$		12	V
Operating voltage range	$V_2 \text{ op}$		6 to 13.2	V

■ 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.

**SANYO Electric Co., Ltd. Semiconductor Company**

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

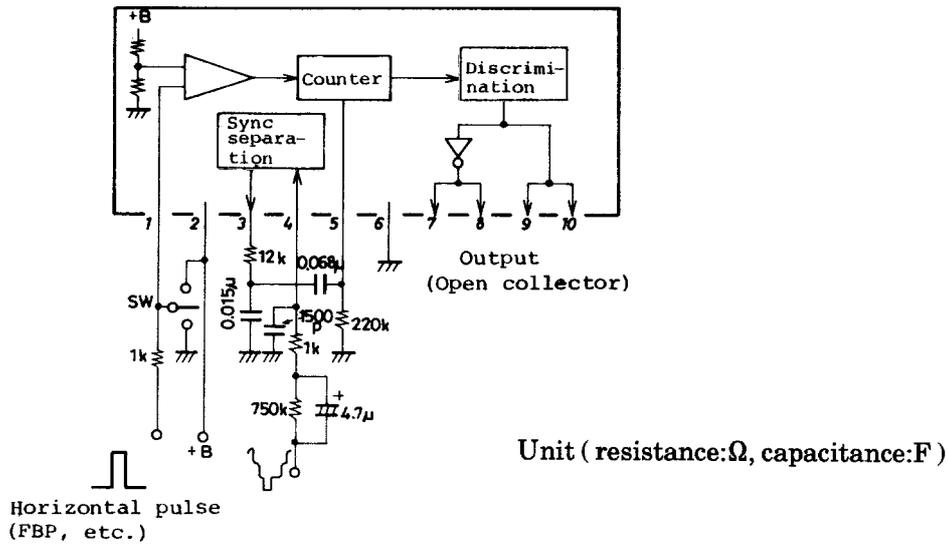
12501TN (KT)/9158YT/6205MW/O283KI, TS No.1351-1/3

# LA7950

**Operating Characteristics** at  $T_a = 25^\circ\text{C}$ ,  $V_2 = 12\text{V}$ , See Test Circuit

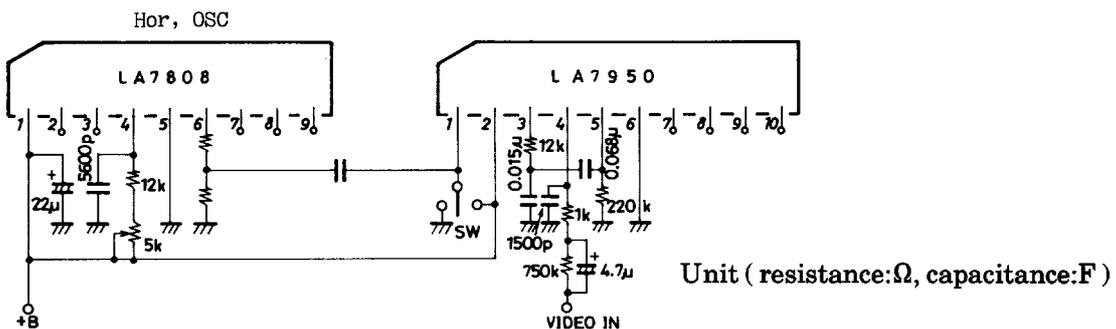
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
$V_{CC2}$ current drain	$I_{CC2}$	Pin 1 GND	8	12	16	mA
Sync separation output voltage	$V_3$	20k $\Omega$ across pin 4 and GND	10.5	11.0	11.5	V
Pin 1 DC voltage	$V_{DC1}$		4.8	5.3	5.8	V
Forced PAL operation start voltage	$V_{POS}$				11.2	V
Forced PAL nonoperation max. voltage	$V_{PNH}$		8.6			V
Forced NTSC operation start voltage	$V_{NOS}$		0.4			V
Forced NTSC nonoperation min. voltage	$V_{NNL}$				2	V
Output saturation voltage	$V_{7, 8, 9, 10}$	$I_{7, 8, 9, 10} = 10\text{mA}$			0.7	V

## Functional Blocks and Sample Applicationn Circuit 1



	Discrimination of field frequency	Output		
		Pins 7, 8	Pins 9, 10	
Number of horizontal scanning lines per field (Number of horizontal pulses)	240 to 287	60Hz (NTSC)	off	on
	288 to 340	50Hz (PAL)	on	off
Forced select SW	GND	60Hz (NTSC)	off	on
	+B	50Hz (PAL)	on	off

## Sample Applicationn Circuit 2 : Using dedicated clock (LA7808)



Continued on next page.

- 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 January, 2001. Specifications and information herein are subject to change without notice.