

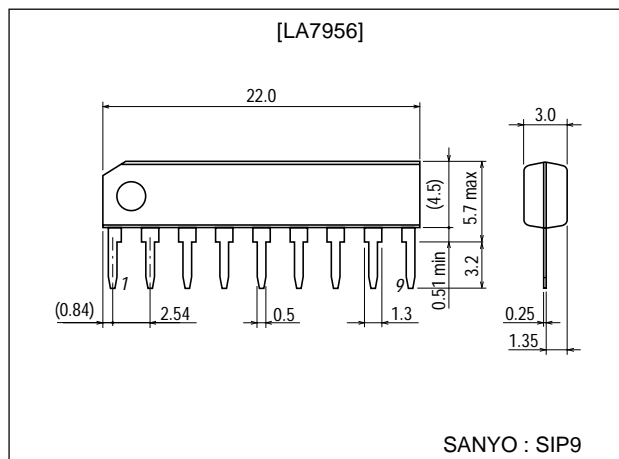
**LA7956****Video Switch for TV/VCR Use****Features**

- 4 inputs, 1 output, 75Ω termination, driver on-chip.
- 6dB amplifier on-chip.
- Excellent crosstalk characteristic.
- Wide band.

Package Dimensions

unit:mm

3017D-SIP9

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|--------------------------------|---|-----------------------------|-------------|------------------|
| Maximum supply voltage | V_7 max | | 14 | V |
| Maximum input supply voltage 1 | V_4 max, V_6 max, V_8 max, V_9 max | | 8 | V |
| Maximum input supply voltage 2 | V_2 max, V_3 max | $V_{CC}=14\text{V}$ | 14 | V |
| Maximum output current | I_1 max | | 10 | mA |
| Allowable power dissipation | P_d max | $T_a \leq 65^\circ\text{C}$ | 540 | mW |
| Operating temperature | T_{opr} | | -20 to +65 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | | -55 to +150 | $^\circ\text{C}$ |

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|----------------------------|--------------|------------|--------------|------|
| Operating voltage range | $V_{CC\ op}$ | | 10.5 to 13.5 | V |
| Recommended supply voltage | V_{CC} | | 12 | 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

LA7953

Operating Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC}=12\text{V}$

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---------------------------|----------------------|--|---------|--------|-----|---------------|
| | | | min | typ | max | |
| Quiescent current drain | I_{CC} | | 15 | 21 | 30 | mA |
| Input bias voltage | V_4, V_6, V_8, V_9 | | 3.5 | 3.8 | 4.1 | V |
| Output bias voltage | V_1 | | 4.6 | 6.1 | 7.6 | V |
| Output DC offset voltage | V_{OS} | (Note 1) | -50 | 0 | +50 | mV |
| Control threshold voltage | V_{2H}, V_{3H} | | 2.3 | | | V |
| | V_{2L}, V_{3L} | | | | 0.7 | V |
| Control input current | I_2, I_3 | | -20 | -6 | | μA |
| Voltage gain | GV | $f=1\text{MHz}, V_{IN}=2\text{Vp-p}$ (Note 1) | 5.6 | 6.1 | 6.4 | dB |
| Frequency characteristics | GV_f | 0dB at $f=100\text{kHz}$ (Note 1) $f=10\text{MHz}, V_{IN}=1\text{Vp-p}$ | -3 | 0 | | dB |
| Output dynamic range | VDR | $f=15\text{kHz}, V_{IN}=1.5\text{Vp-p}$ (Note 1) | 1.4 | 1.5 | | Vp-p |
| Crosstalk (Note 2) | C_T | $V_{IN}=1\text{Vp-p}, f=3\text{MHz}$ (Note 1) | 50(48) | 58(55) | | dB |
| | | $V_{IN}=1\text{Vp-p}, f=5\text{MHz}$ (Note 1) | 45(45) | 55(52) | | dB |

The current flowing into the IC is defined as positive and current from the IC is defined as negative.

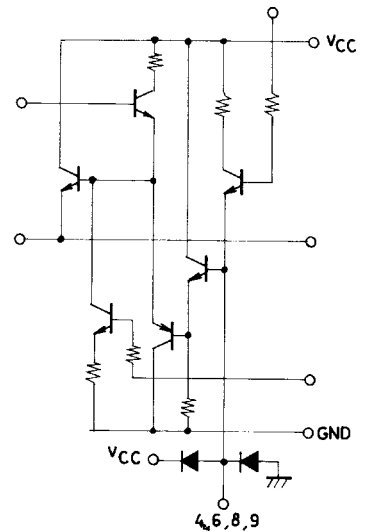
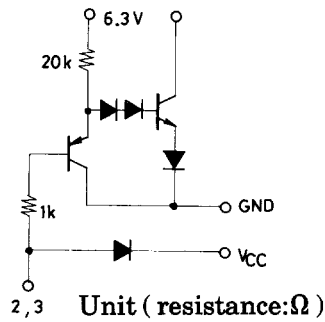
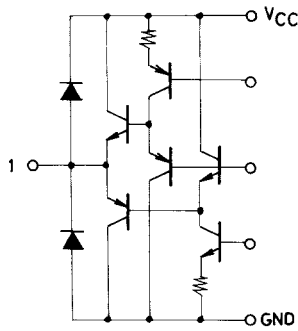
Video Switch Truth Table

| S2 (Pin 2) | S3 (Pin 3) | V_{IN1} (Pin 4) | V_{IN2} (Pin 6) | V_{IN3} (Pin 8) | V_{IN4} (Pin 9) |
|---------------|---------------|----------------------|----------------------|----------------------|----------------------|
| H | H | ON | OFF | OFF | OFF |
| L | H | OFF | ON | OFF | OFF |
| H | L | OFF | OFF | ON | OFF |
| L | L | OFF | OFF | OFF | ON |

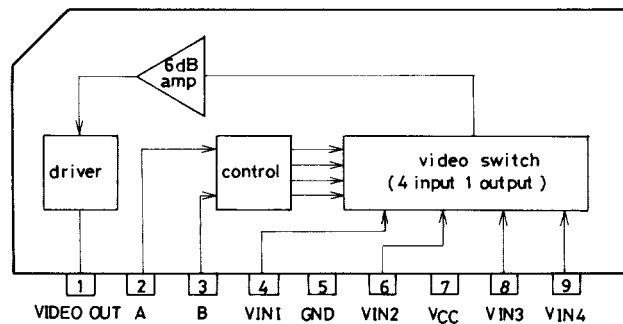
Note 1 : Refer to this Truth Table and make measurements by switching S2, S3.

Note 2 : () : Crosstalk between pins 8 and 9.

Input/Output Equivalent Circuit

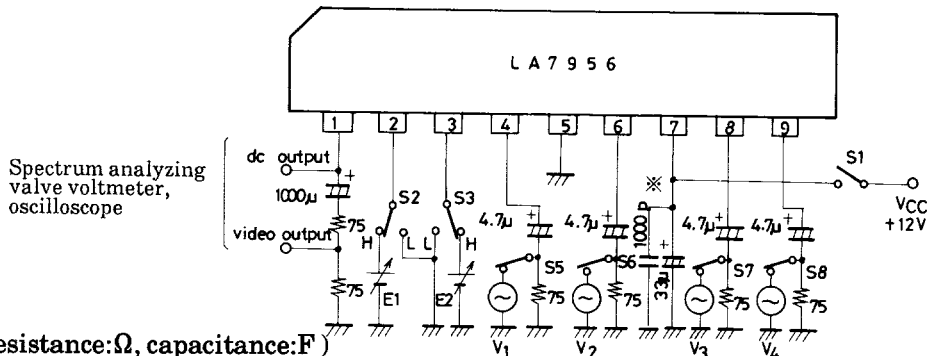


Equivalent Circuit Block Diagram



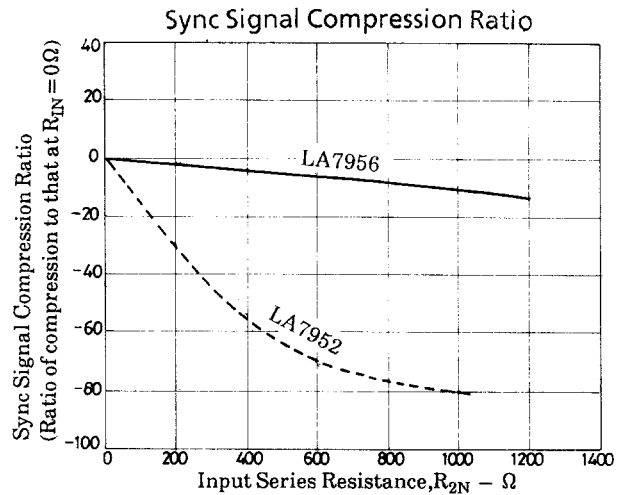
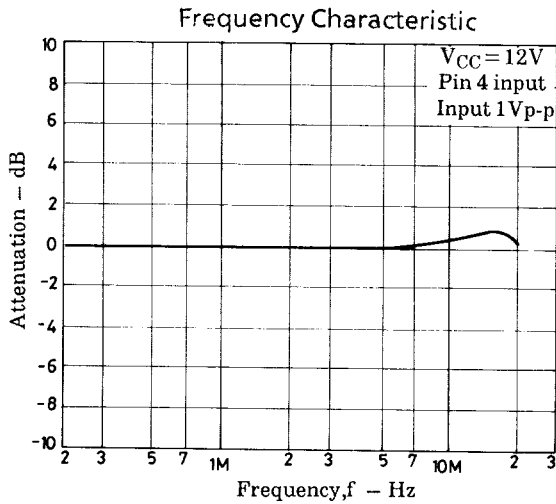
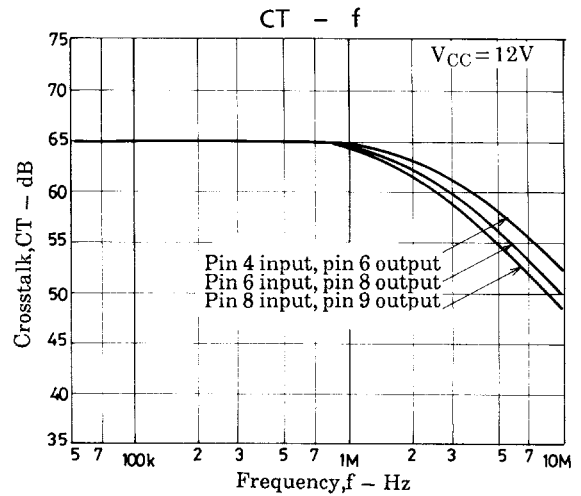
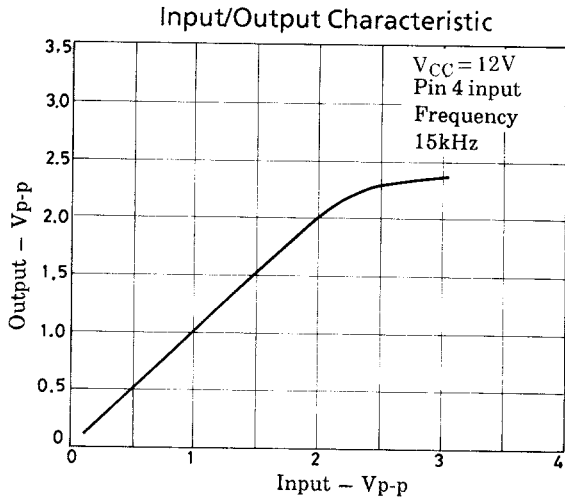
LA7953

Test Circuit



Unit (resistance:Ω, capacitance:F)

※ : Connect the bypass capacitor for V_{CC} as close to pin 7 as possible.



Design Notes

An improvement in the DC clamp circuit has improved the sync signal compression attributable to the signal source impedance, but the response time of the DC clamp is made longer accordingly than that of the LA7952. Make adjustments by connecting a high resistance (several hundred kΩ) across input pin and GND (decreasing the resistance makes the sync signal compression larger).

- 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 October, 2000. Specifications and information herein are subject to change without notice.