



SANYO Semiconductors

DATA SHEET

LA73051

 — Monolithic Linear IC

3ch 75Ω Video Driver

Overview

This LA73051 is a 3ch 75Ω Video Driver IC. The LA73051 is ideal for use the video output driver such as VCR and DVD-player equipment.

Functions

- 6dB AMP+driver (3ch)

Specifications

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|----------------------|-------------------------------|--------------|------------------|
| Maximum supply voltage | $V_{CC \text{ max}}$ | | $\pm 7, +14$ | V |
| Allowable power dissipation | $P_d \text{ max}$ | $T_a \leq 80^\circ\text{C} *$ | 440 | mW |
| Operating temperature | T_{opr} | | -20 to +80 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | | -55 to +150 | $^\circ\text{C}$ |

*: Mounted on a board : $114.3 \times 76.1 \times 1.6 \text{ mm}^3$ glass epoxy board.

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|--------------------------------|---------------------|------------|-------------------------------------|------|
| Recommending operation voltage | V_{CC} | | ± 5 +9 | V |
| Operating voltage range | $V_{CC \text{ op}}$ | | ± 4.0 to ± 5.5 +8 to +10 | 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.

www.DataSheet4U.com

SANYO Electric Co.,Ltd. Semiconductor Company

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

LA73051

Electrical Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC} = \pm 5\text{V}$

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-----------------------------|---------------------|--|---------|----------|----------|------|
| | | | min | typ | max | |
| Current dissipation | I_{CC1} | No signal | 28.9 | 34.0 | 39.1 | mA |
| Voltage gain | VG | $V_{IN} = 1\text{Vp-p}$, $f = 4.43\text{MHz}$ | 5.7 | 6.2 | 6.7 | dB |
| Frequency characteristics 1 | VF1 | $V_{IN} = 1\text{Vp-p}$, $f = 100\text{k}/5\text{MHz}$ | -1.0 | 0 | 1.0 | dB |
| Frequency characteristics 2 | VF2 | $V_{IN} = 1\text{Vp-p}$, $f = 100\text{k}/27\text{MHz}$ | | -25 | -20 | dB |
| Group delay | GD | $f = 100\text{k}/4.43\text{MHz}$ | | ± 10 | ± 15 | ns |
| Maximum output level | $V_{O \text{ max}}$ | $f = 1\text{kHz}$, THD = 1% | 3.0 | 4.0 | | Vp-p |
| Control voltage H level | V_{cntH} | Pin 7 input voltage | 2.5 | | V_{CC} | V |
| Control voltage L level | V_{cntL} | Pin 7 input voltage | 0 | | 1.0 | V |

Design guarantee items

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|----------------------------|--------------------|--|---------|-----|-----|------|
| | | | min | typ | max | |
| Video S/N | VG_{1V} | | | -75 | -70 | dB |
| Differential Gain | DG | $V_{IN} = 1\text{Vp-p}$, RAMP signal | | | 1.0 | % |
| Differential Phase | DP | $V_{IN} = 1\text{Vp-p}$, RAMP signal | | | 1.0 | deg. |
| Mute attenuation | V_{MUTEV} | $V_{IN} = 1\text{Vp-p}$, $f = 4.43\text{MHz}$ | | -60 | -55 | dB |
| Cross-talk between channel | V_{CTKV} | $V_{IN} = 1\text{Vp-p}$, $f = 4.43\text{MHz}$ | | -60 | -55 | dB |

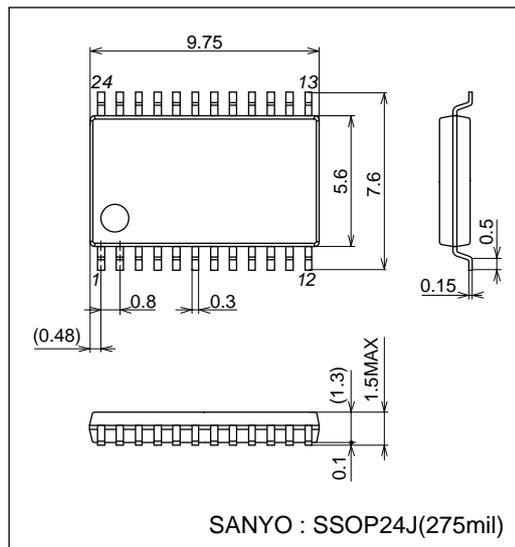
Truth Table

| | Pin 7 |
|---|---------|
| H | THROUGH |
| L | MUTE |

Package Dimensions

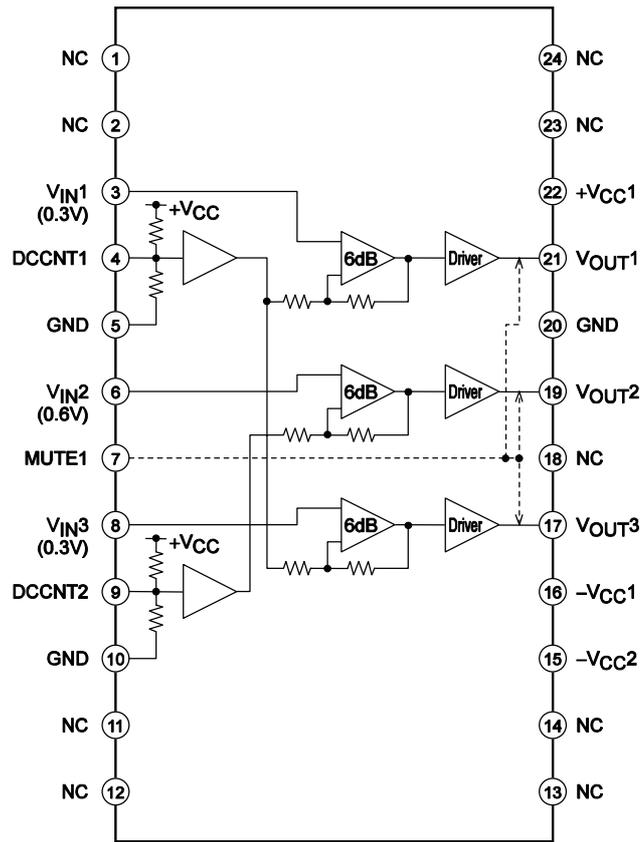
unit : mm

3315



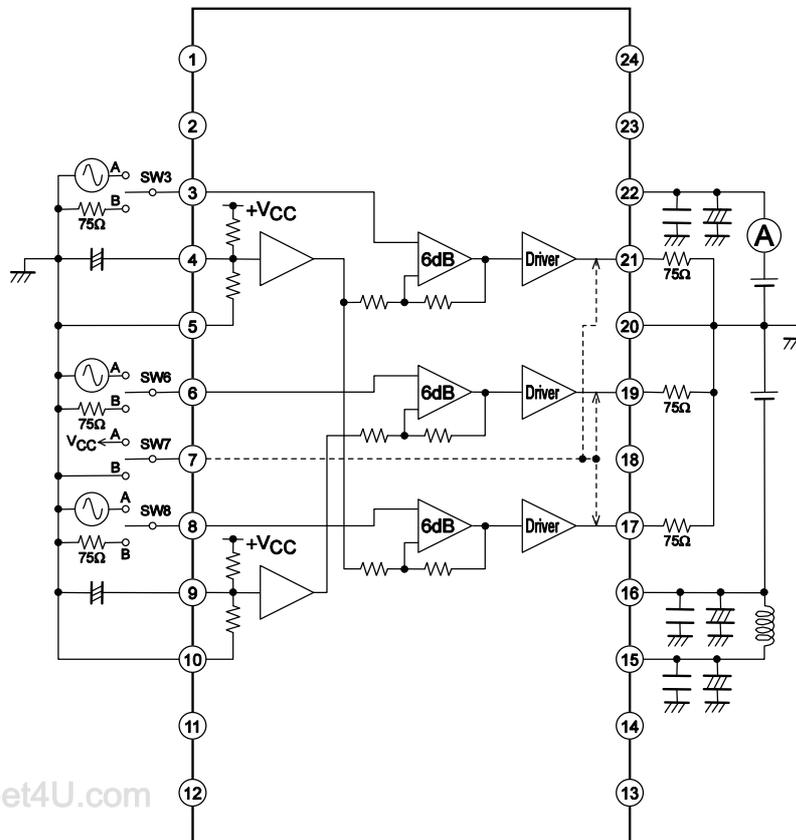
LA73051

Block Diagram



MSB06027

Test Circuit Diagram (Using ±power supply)



MSB06028

LA73051

Pin Functions

| Pin No. | Pin Name | Terminal Explanation | Equivalent Circuit |
|--|--|---|--|
| 1 2 11 12 13 14 18 23 24 | NC | | |
| 3 6 8 | V _{IN1} V _{IN2} V _{IN3} | Input terminal. Non-bias. It is possible to use with being directly connected with DC. When DC coupling, it is necessary to add bias after the coupling. | <p style="text-align: right;">MSP06253</p> |
| 4 9 | DCCNT1 DCCNT2 | DC offset mode charge terminal between input and output. When a condenser is input at the position between pin 4 (DCCNT1) and GND, the operation of IC becomes the mode with 0.3VDC offset between input and output of 1, 3ch (pins 3 and 21, pins 8 and 17). Similarly when a condenser is input at the position between pin 9 (DCCNT2) and GND, it becomes the mode with 0.6VDC offset between input and output of 2ch (pins 6 and 19). And when pins 4, 9 and GND is shorted, it becomes the mode without DC offset between input and output. | <p style="text-align: right;">MSP06254</p> |
| 5 10 20 | GND | Both ±power supply and +power supply are GND. | |
| 7 | MUTE1 | Changeover terminal of Mute. When the Mute terminal is Low, it is Mute. When the terminal is Open, it is Low. | <p style="text-align: right;">MSP06255</p> |

Continued on next page.

LA73051

Continued from preceding page.

| Pin No. | Pin Name | Terminal Explanation | Equivalent Circuit |
|----------------|---|--|--------------------|
| 15 16 | -V _{CC} | -V _{CC} of using ±power supply. Using +power supply, it is GND. | |
| 17 19 21 | V _{OUT3} V _{OUT2} V _{OUT1} | Output terminal. Using ±power supply, in case of the mode with DC offset, it is possible to use without capacitor of output by setting pins 3, 8 to 0.3V-bias and by setting pin 6 to 0.6V-bias. And in case of the mode without DC offset, it is possible to use without capacitor of output by setting each input to zero-bias. When using +power supply, both of the modes needs coupling capacitor. | |
| 22 | +V _{CC} | Both ±power supply and +power supply are +V _{CC} . | |

- 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, of 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 February, 2006. Specifications and information herein are subject to change without notice.