



SANYO Semiconductors

## DATA SHEET

# LA7848 — Monolithic Linear IC

## TV Vertical Output + E/W Driver with Bus Control Support

### Overview

The LA7848 is a vertical deflection plus EW driver IC for high image quality TV and CRT displays that supports the use of a bus control system signal-processing IC. The sawtooth waveform from the bus control system signal-processing IC can directly drive the deflection yoke (including the DC component). The LA7848 also provides a parabolic waveform output that can similarly be used to drive the diode modulator block.

### Functions

- Built-in pump-up circuit for low power dissipation.
- Vertical output circuit.
- Excellent crossover characteristics.

### Specifications

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

| Parameter                   | Symbol         | Conditions                                 | Ratings      | Unit               |
|-----------------------------|----------------|--|--------------|--------------------|
| Supply voltage              | +B6 max        |  | 45           | V                  |
| Output block supply voltage | +B3 max        |  | 92           | V                  |
| Allowable power dissipation | Pd max         | Mounted on an arbitrarily large heat sink. | 9            | W                  |
| Deflection output current   | I2 max         |  | -1.5 to +1.5 | Ap-o               |
| EW drive current *1         | I10 max        | V10 = 1.5V                                 | +0.5         | Ap-o               |
| EW drive voltage *2         | V10 max        | I10 = 10 $\mu$ A                           | 45           | V                  |
| Thermal resistance          | $\theta_{j-c}$ |  | 4            | $^\circ\text{C/W}$ |
| Operating temperature       | Topr           |  | -20 to +85   | $^\circ\text{C}$   |
| Storage temperature         | Tstg           |  | -40 to +150  | $^\circ\text{C}$   |

Note: The EW driver is used within the range that connects the two points \*1 and \*2.

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

| Parameter                      | Symbol     | Conditions | Ratings  | Unit |
|--------------------------------|------------|------------|----------|------|
| Recommended supply voltage     | +B6        |            | 30       | V    |
| Operating supply voltage range | +B6op      |            | 16 to 43 | V    |
| Deflection output current      | $I_{2p-p}$ |            | To 2.2   | Ap-p |
| EW drive current               | $I_{10}$   |            | To 0.4   | Ap-o |

## Operating Characteristics at $T_a = 25^\circ\text{C}$ , +B = 30V

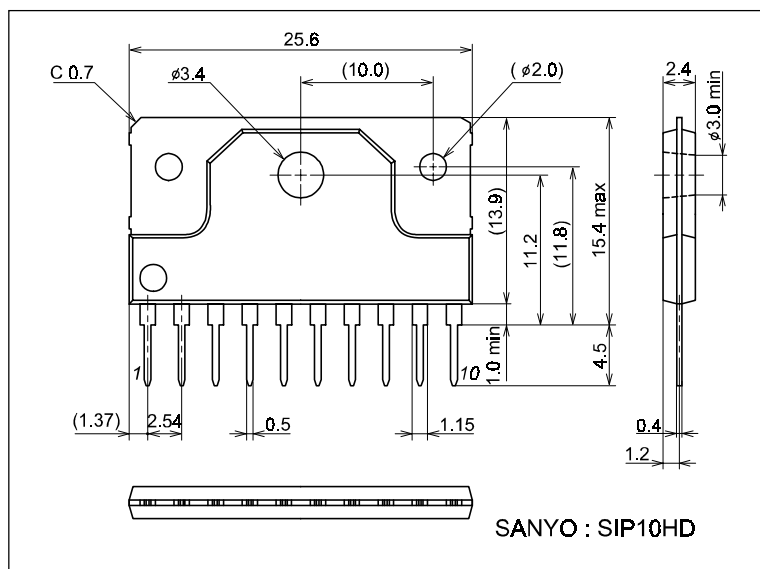
| Parameter                                    | Symbol    | Conditions              | Ratings |      |      | Unit |
|--|-----------|-------------------------|---------|------|------|------|
|  |           |                         | min     | typ  | max  |      |
| Deflection output saturation voltage (lower) | Vsat2-1   | $I_2 = 1.1\text{A}$     |         |      | 1.5  | V    |
| Deflection output saturation voltage (upper) | Vsat3-2   | $I_2 = -1.1\text{A}$    |         |      | 3.2  | V    |
| Pump-up charge saturation voltage            | Vsat7-1   | $I_7 = 20\text{mA}$     |         |      | 1.8  | V    |
| Pump-up discharge saturation voltage         | Vsat6-7   | $I_7 = -1.1\text{A}$    |         |      | 3.2  | V    |
| Idling current                               | $I_{dl}$  |                         | 15      |      | 50   | mA   |
| Midpoint voltage                             | $V_{mid}$ |                         | 14.0    | 15.0 | 16.0 | V    |
| EW drive saturation voltage                  | Vsat10-1  | $I_{10} = 500\text{mA}$ |         |      | 1.5  | V    |

Note: Current flowing into the IC is positive (+) and current flowing out is negative (-).

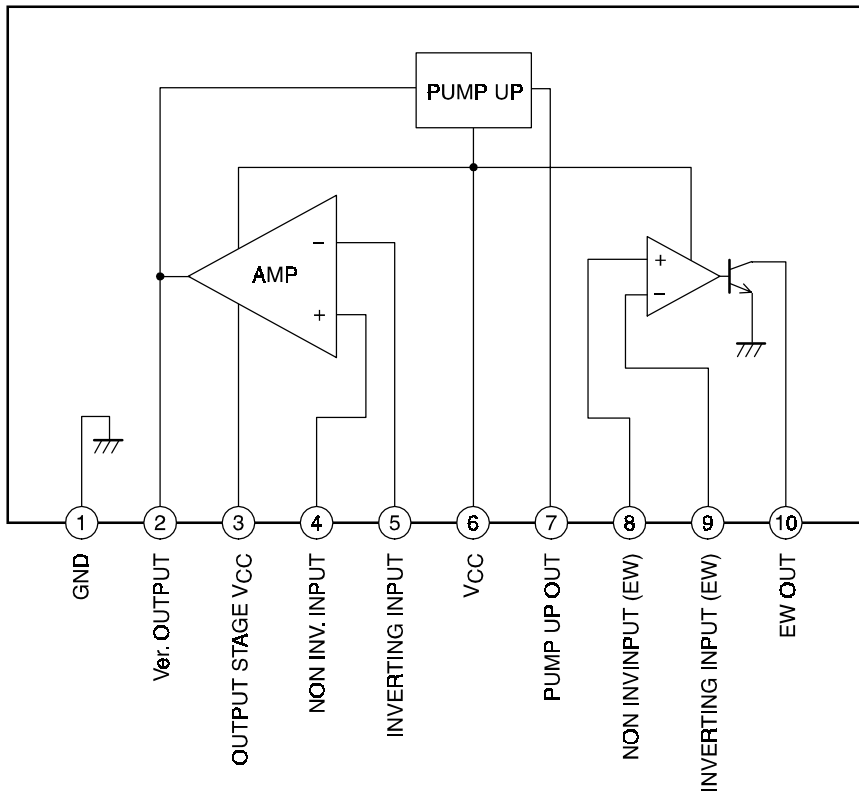
## Package Dimensions

unit : mm

3248A



Block Diagram

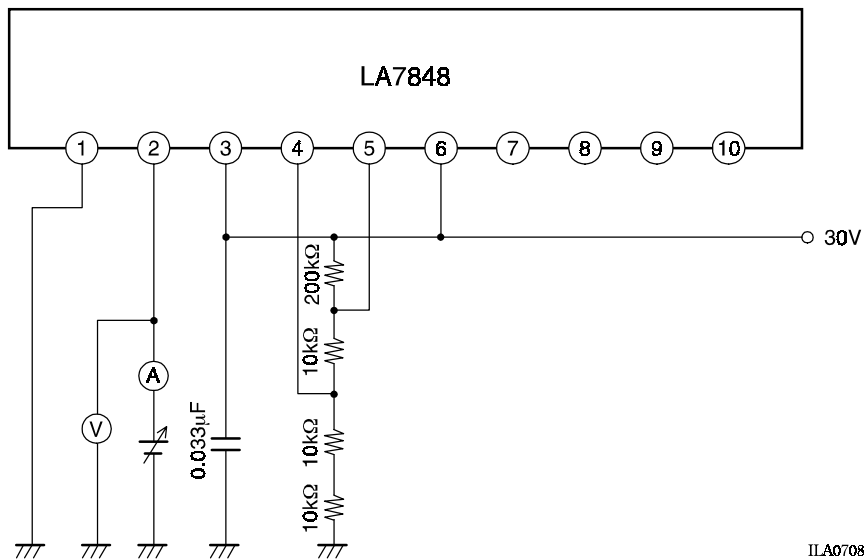


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Test Circuit Diagrams

1. Output saturation voltage (lower) Vsat2-1

Figure 1



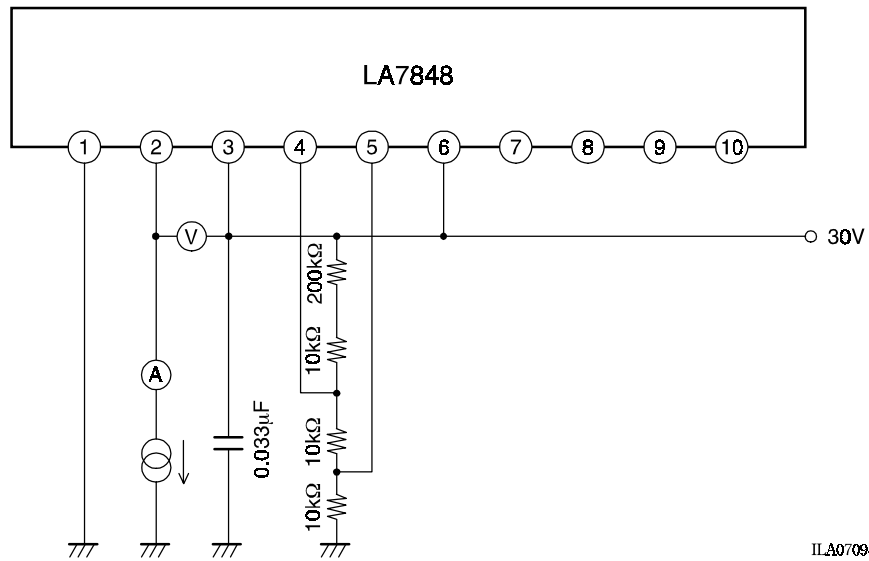
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In the circuit in figure 1, read the value shown by the voltage meter (V) when the current meter (A) reads 1.1A.

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## 2. Output saturation voltage (upper) $V_{sat3-2}$

Figure 2

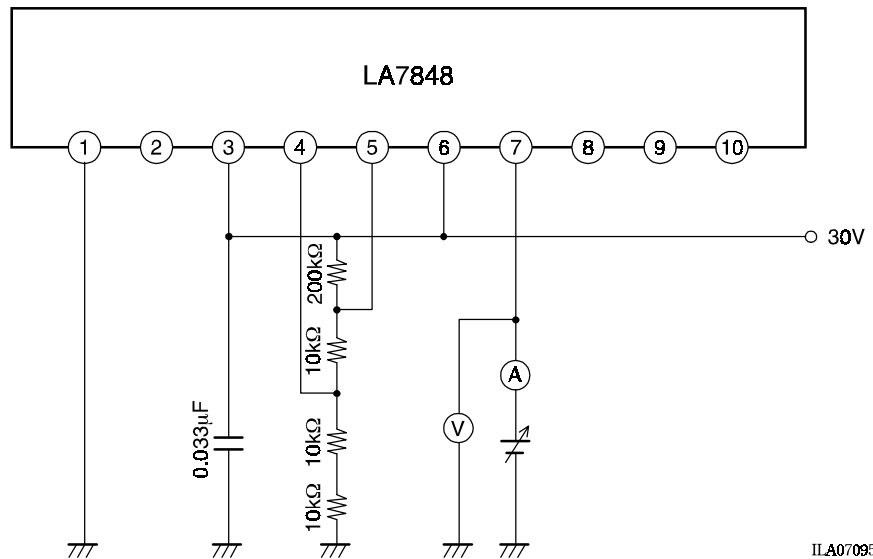


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In the circuit in figure 2 with the output from pin 2 absorbed by an electronic load and read the value shown by the voltage meter (V) when the current meter (A) reads 1.1A.

## 3. Charge pump charge saturation voltage $V_{sat7-1}$

Figure 3



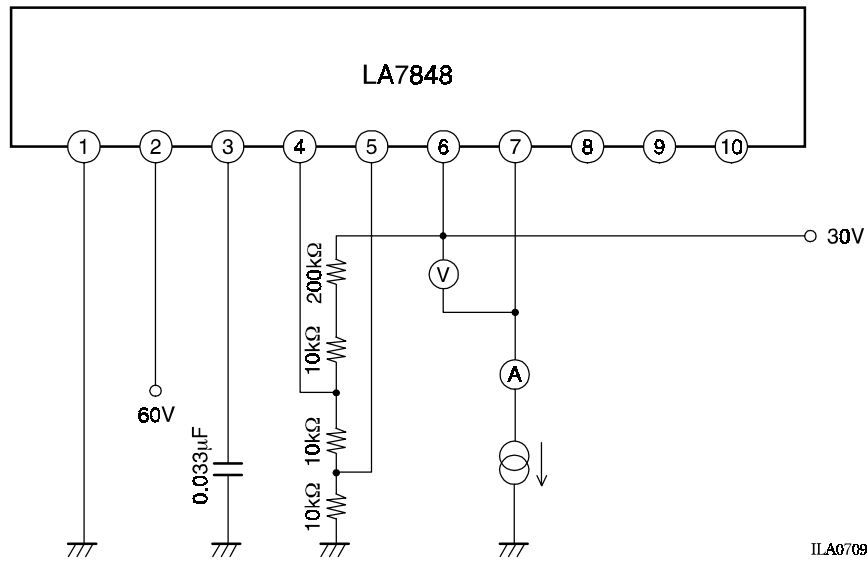
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In the circuit in figure 3, read the value shown by the voltage meter (V) when the current meter (A) reads 20mA.

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## 4. Charge pump discharge saturation voltage $V_{sat6-7}$

Figure 4



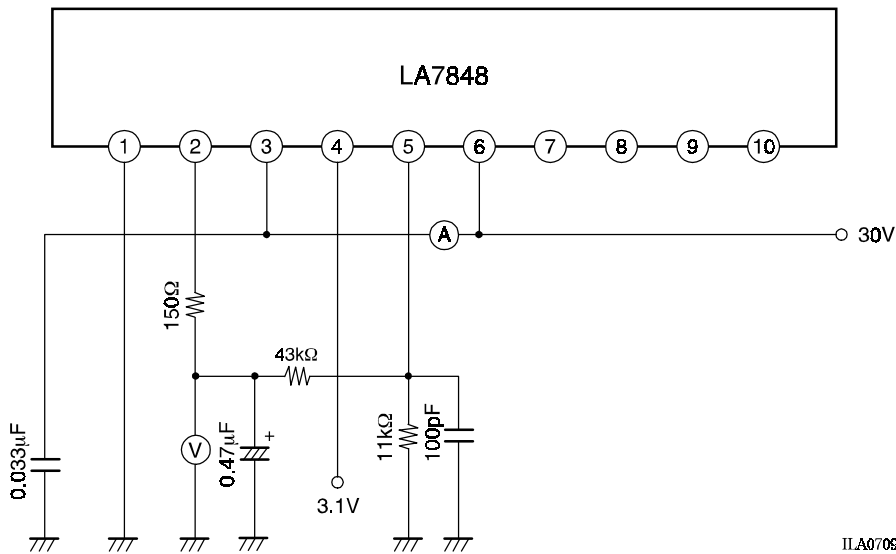
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In the circuit in figure 4 with the output from pin 7 absorbed by an electronic load, read the value shown by the voltage meter (V) when the current meter (A) reads 1.1A.

## 7. Idling current $I_{dl}$

## 8. Midpoint voltage $V_{mid}$

Figure 5



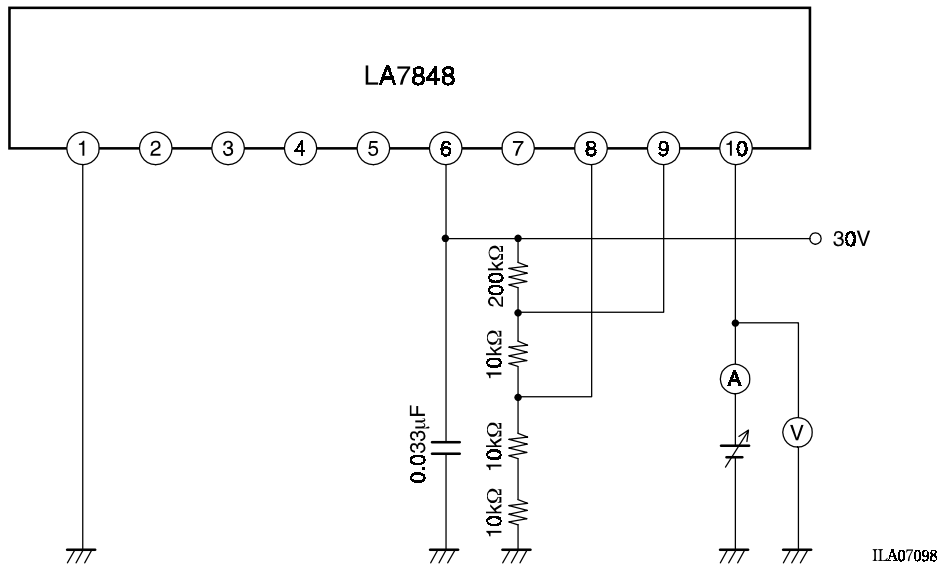
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In the circuit in figure 5, read the value shown by the current meter (A).

In the circuit in figure 5, read the value shown by the voltage meter (V).

9. EW drive saturation voltage V<sub>sat10-1</sub>

Figure 6



In the circuit in figure 6, read the value shown by the voltage meter (V) when the current meter (A) reads 500mA.

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