



SANYO Semiconductors

DATA SHEET

LA78040 — Monolithic Linear IC TV and CRT Display Vertical Output IC with Bus Control Support

Overview

The LA78040 is a vertical deflection output 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). Color TV vertical deflection system adjustment functions can be controlled over a bus system by connecting the LA78040 to a Sanyo LA768X series or LA769XX series bus control system signal-processing IC.

Since the LA78040 provides a maximum deflection current of 1.8Ap-p, it is optimal for small and medium size CRTs.

Functions

- Built-in pump-up circuit for low power dissipation.
- Vertical output circuit.
- Thermal protection circuit.

Specifications

Maximum Ratings at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|----------------|--|--------------|------|
| Pump-up block supply voltage | +B2 max | | 34 | V |
| Output block supply voltage | +B6 max | | 70 | V |
| Allowable power dissipation | Pd max | Mounted on an arbitrarily large heat sink. | 9 | W |
| Deflection output current | I5 max | | -1.5 to +1.5 | Ap-o |
| Thermal resistance | θ_{j-c} | | 3 | °C/W |
| Operating temperature | Topr | | -20 to +85 | °C |
| Storage temperature | Tstg | | -40 to +150 | °C |

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LA78040

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|--------------------------------|--------|------------|----------|------|
| Recommended supply voltage | +B2 | | 24 | V |
| Operating supply voltage range | +B2op | | 16 to 33 | V |
| Deflection output current | I5p-p | | To 1.8 | Ap-p |

Operating Characteristics at $T_a = 25^\circ\text{C}$, +B2 = 24V

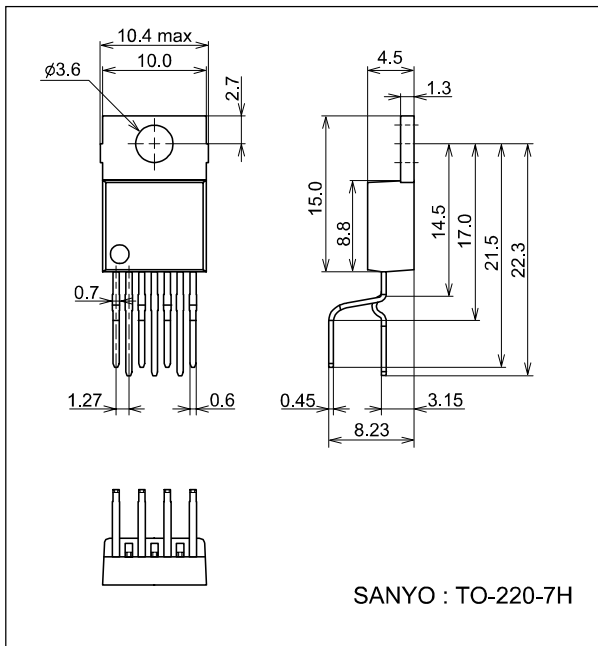
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|------------------|------------|---------|------|------|------|
| | | | min | typ | max | |
| Deflection output saturation voltage (lower) | Vsat5-4 | I5 = 0.9A | | | 1.3 | V |
| Deflection output saturation voltage (upper) | Vsat6-5 | I5 = -0.9A | | | 3.2 | V |
| Pump-up charge saturation voltage | Vsat3-4 | I3 = 20mA | | | 1.8 | V |
| Pump-up discharge saturation voltage | Vsat2-3 | I3 = 0.9A | | | 3.0 | V |
| Idling current | I _{dl} | | 20 | | 50 | mA |
| Midpoint voltage | V _{mid} | | 11.0 | 12.0 | 13.0 | V |

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

Package Dimensions

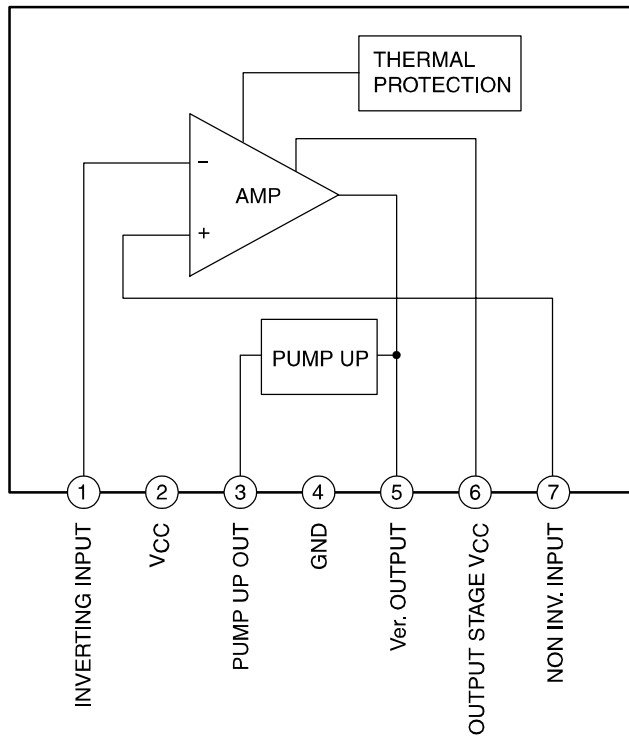
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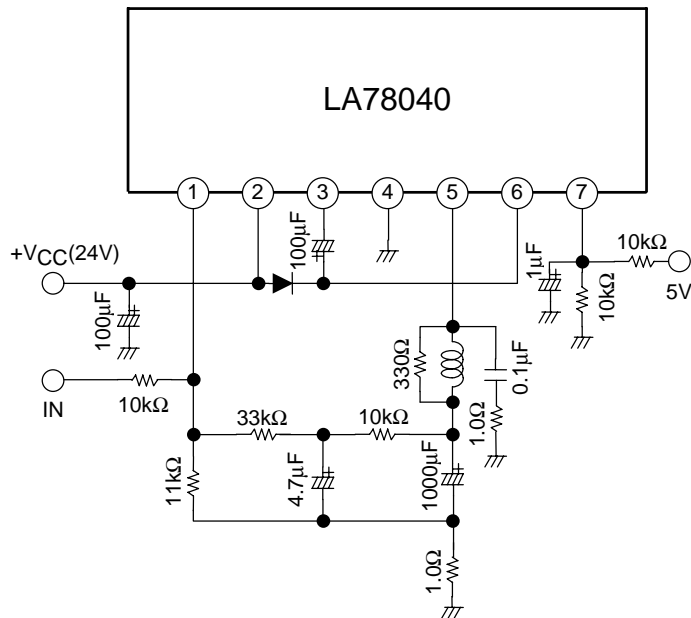
LA78040

Block Diagram

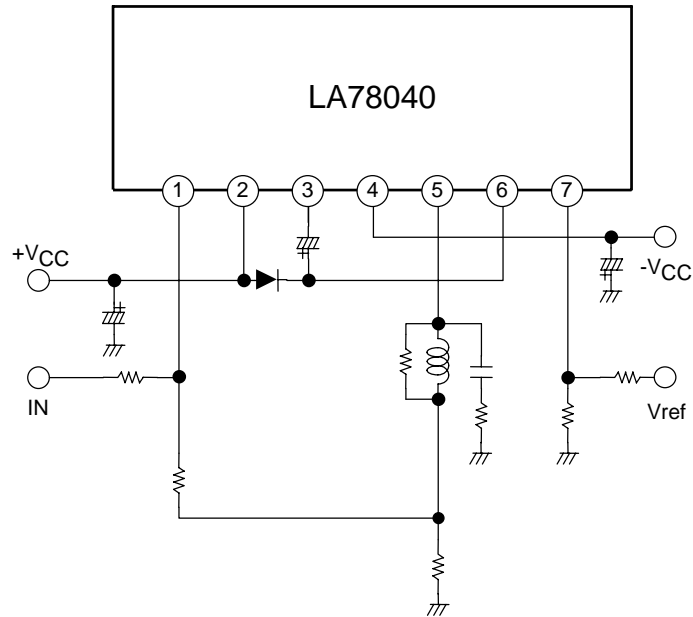


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Application Circuit Example 1 (Single power supply)



Application Circuit Example 2 (Dual power supply)



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