



# LA6511

## Power Operational Amplifier

### Overview

The LA6511 is a BLT-dedicated 1-channel driver developed for use in consumer and industrial equipment. (Do not use with  $\pm$  power supply)

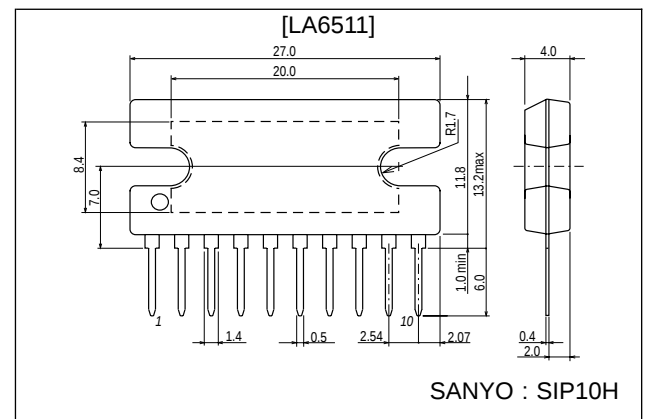
### Features and Functions

- High output current ( $I_O$  max = 2.0 A)
- High gain
- Wide operating voltage range (4 to 24 V)
- Includes mute circuit (active low)

### Package Dimensions

unit : mm

#### 3024A-SIP10H



### Specifications

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

| Parameter                       | Symbol      | Ratings     | Unit               |
|---------------------------------|-------------|-------------|--------------------|
| Maximum supply voltage          | $V_{CCmax}$ | 24          | V                  |
| Differential input voltage      | $V_{ID}$    | 24          | V                  |
| Input common-mode voltage range | $V_{IN}$    | 24          | V                  |
| Allowable power dissipation     | $P_d$ max   | 3.1         | W                  |
| Operating temperature           | $T_{opr}$   | -20 to +75  | $^{\circ}\text{C}$ |
| Storage temperature             | $T_{stg}$   | -55 to +150 | $^{\circ}\text{C}$ |

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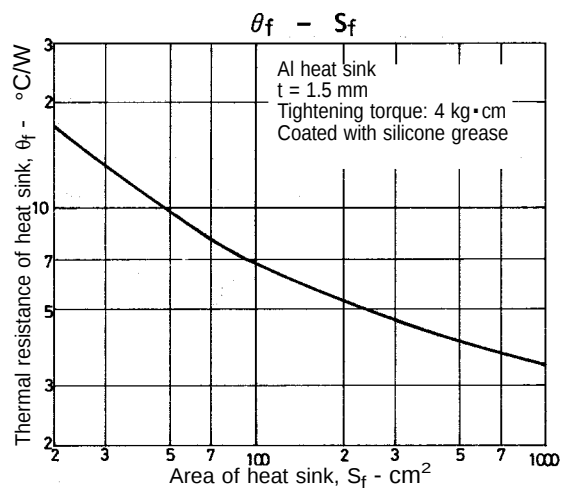
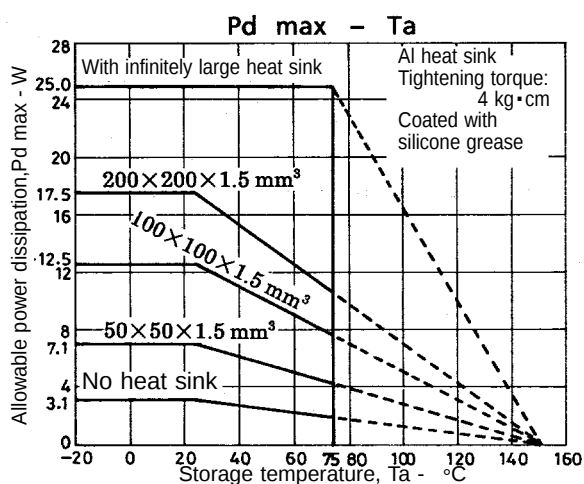
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Operating Characteristics at  $T_a = 25\text{ }^{\circ}\text{C}$ ,  $V_{CC} = 12\text{V}$ 

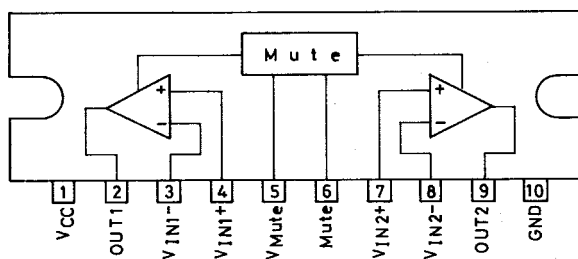
| Parameter                          | Symbol     | Conditions                   | min | typ  | max | Unit             |
|------------------------------------|------------|------------------------------|-----|------|-----|------------------|
| Current drain with no load         | $I_{CC}$   |                              | 17  | 25   | 35  | mA               |
| Input offset voltage               | $V_{IO}$   | $R_S \leq 10\text{ k}\Omega$ |     | 3    | 7   | mV               |
| Input offset voltage difference    | $DV_{IO}$  | $R_S \leq 10\text{ k}\Omega$ |     | 1    | 3   | mV               |
| Input offset current               | $I_{IO}$   |                              |     | 10   | 100 | nA               |
| Input bias current                 | $I_B$      |                              |     | 50   | 500 | nA               |
| Input common-mode voltage range    | $V_{ICM}$  |                              | 0.5 |      | 10  | V                |
| Common-mode signal rejection ratio | CMR        |                              | 70  | 80   |     | dB               |
| Maximum output voltage             | $V_O$      | $R_L = 8.0\text{ }\Omega$    |     | 8    |     | V                |
| Voltage gain                       | $V_{GO}$   |                              |     | 85   |     | dB               |
| Slew rate                          | SR         |                              |     | 0.15 |     | V/ $\mu\text{s}$ |
| Supply voltage rejection ratio     | SVR        |                              |     | 30   |     | $\mu\text{V/V}$  |
| Mute-off voltage                   | $V_{MOFF}$ |                              |     | 1.0  |     | V                |
| Mute pin output current            | $I_{MUTE}$ |                              |     | 40   |     | $\mu\text{A}$    |

Notes)

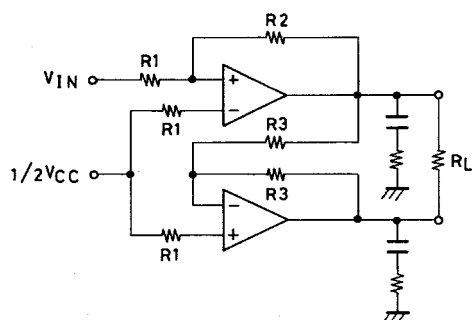
- Thermal shutdown function on chip.
- The mute voltage operates versus the  $V_{Mref}$  voltage.



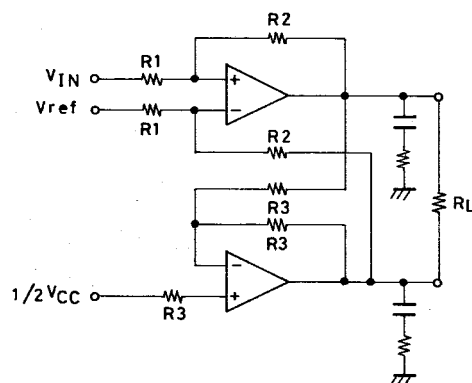
## Pin Assignment



## Sample Application Circuit



$$\text{Gain} = 20 \log \frac{R2}{R1} + 6\text{dB}$$



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