

SANYO

No.2624A

LA6510**1 A Power Operational Amplifier****OVERVIEW**

The LA6510 is a high-performance power operational amplifier IC capable of delivering larger output currents than conventional op amps.

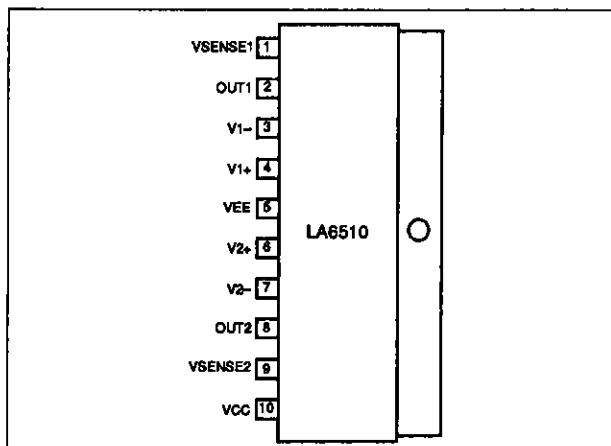
The LA6510 features an on-chip current limiter and provides high voltage gain and a high common-mode rejection ratio.

The LA6510 is an ideal choice for power applications such as DC servos, capstan drivers, actuator drivers, programmable power supplies and high-quality audio amplifiers.

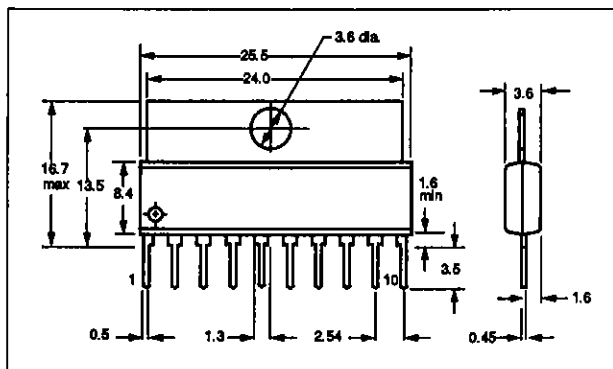
The LA6510 is available in 10-pin SIPs and operates from -15 V and 15 V supplies.

FEATURES

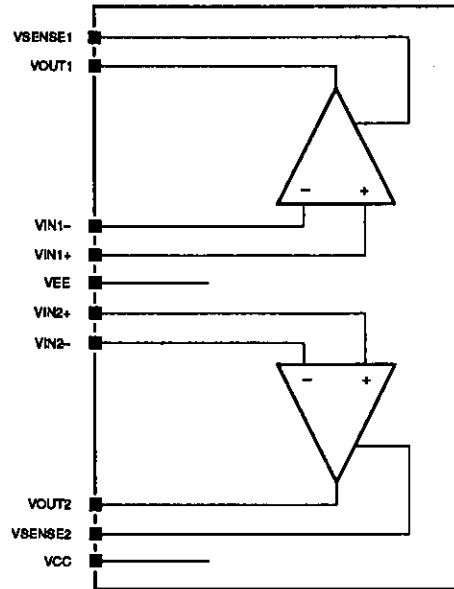
- 1 A output current
- 100 dB voltage gain
- 80 dB common-mode rejection
- 0.15 V/ μ s slew rate
- 2 mV offset voltage
- 10 nA offset current
- On-chip current limiter
- -15 V and 15 V supplies
- 10-pin SIP

PINOUT**PACKAGE DIMENSIONS**

Unit: mm

3064A-SIP10F

BLOCK DIAGRAM



PIN DESCRIPTION

| Number | Name | Description |
|--------|---------|---------------------|
| 1 | VSENSE1 | Voltage detect |
| 2 | OUT1 | Output |
| 3 | V1- | Inverting input |
| 4 | V1+ | Non-inverting input |
| 5 | VEE | -15 V supply |
| 6 | V2+ | Non-inverting input |
| 7 | V2- | Inverting input |
| 8 | OUT2 | Output |
| 9 | VSENSE2 | Voltage detect |
| 10 | VCC | 15 V supply |

SPECIFICATIONS

Absolute Maximum Ratings

| Parameter | Symbol | Rating | Unit |
|-----------------------------|-------------------|------------|--------|
| Supply voltages | V _{CC} | 18 | V |
| | V _{EE} | -18 | |
| Differential input voltage | V _{ID} | 30 | V |
| Common-mode input voltage | V _{ICOM} | ±15 | V |
| Output current | I _o | 1.0 | A |
| Power dissipation | P _d | 2.5 | W |
| Operating temperature range | T _{opr} | -20 to 75 | deg. C |
| Storage temperature range | T _{stg} | -55 to 150 | deg. C |

Recommended Operating Conditions

$T_a = 25 \text{ deg. C}$

| Parameter | Symbol | Rating | Unit |
|-----------------|----------|--------|------|
| Supply voltages | V_{CC} | 15 | V |
| | V_{EE} | -15 | |

Electrical Characteristics

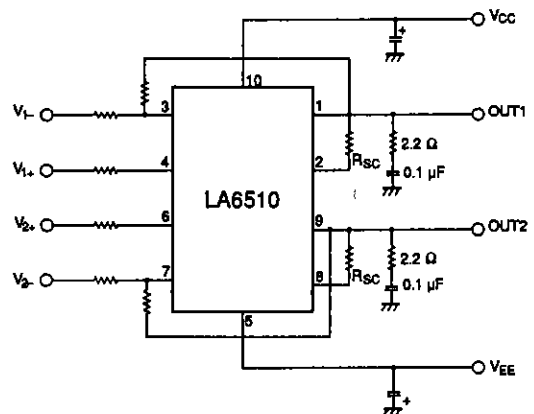
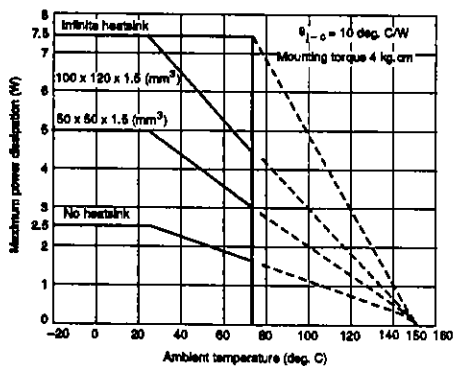
$V_{CC} = 15 \text{ V}$, $V_{EE} = -15 \text{ V}$, $T_a = 25 \text{ deg. C}$ unless otherwise noted

| Parameter | Symbol | Condition | Rating | | | Unit |
|--------------------------------|-----------|-----------------------------------------------------------------------------|----------|----------|-----|------------------|
| | | | min | typ | max | |
| Quiescent current | I_{CCO} | | - | 12 | 20 | mA |
| Input offset voltage | V_{IO} | $R_s \leq 10 \text{ k}\Omega$ | - | 2 | 6 | mV |
| Input offset current | I_{IO} | | - | 10 | 200 | nA |
| Input bias current | I_B | | - | 100 | 700 | nA |
| Common-mode input voltage | V_{ICM} | | -15 | - | 13 | V |
| Common-mode rejection ratio | CMR | | 70 | 80 | - | dB |
| Maximum output voltage | V_O | $R_L = 33 \Omega$ | ± 12 | ± 13 | - | V |
| Voltage gain | V_{G0} | | - | 100 | - | dB |
| Slew rate | SR | $G_V = 0$, $R_L = 33 \Omega$, $R = 2.2 \Omega$, $L = 0.1 \mu\text{F}$ | - | 0.15 | - | V/ μs |
| Equivalent input noise voltage | V_{NI} | $R_g = 1 \text{ k}\Omega$, DIN AUDIO | - | 2 | - | μV |
| Supply voltage rejection ratio | SVR | | - | 30 | 150 | $\mu\text{V/V}$ |
| Limiting current | I_{SC} | $R_{SC} = 2.2 \Omega$ | - | 0.35 | - | A |

Typical Performance Characteristics

TYPICAL APPLICATION

Power dissipation vs. ambient temperature



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