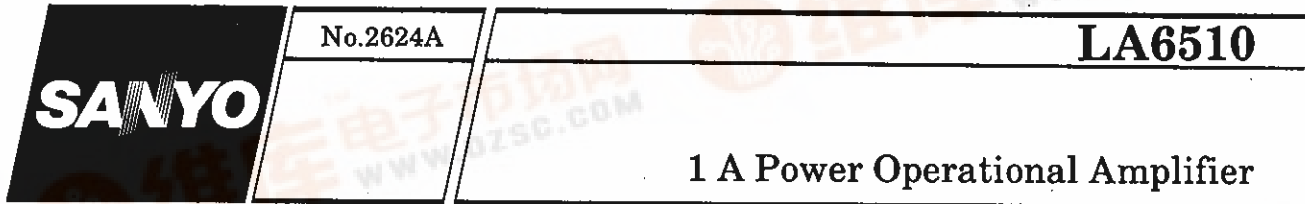


Monolithic Linear IC



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.

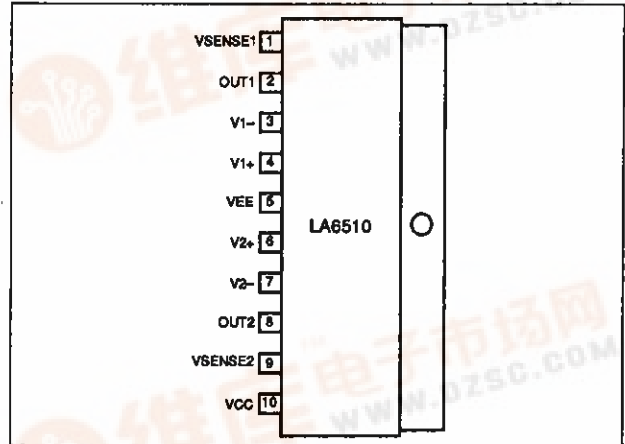
The LA6510 is an ideal choice for power applications such as DC servos, capstan drivers, actuator drivers, programmable power supplies and high-quality audio amplifiers.

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

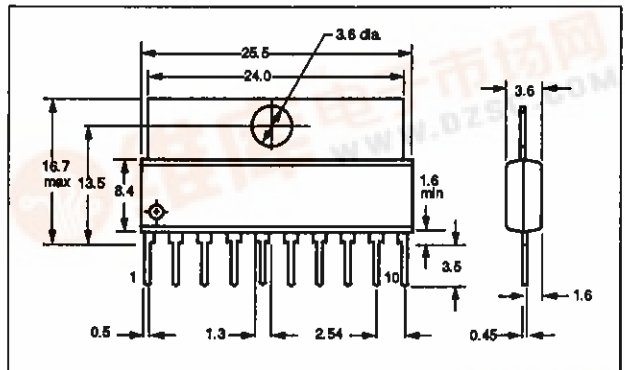
PINOUT



PACKAGE DIMENSIONS

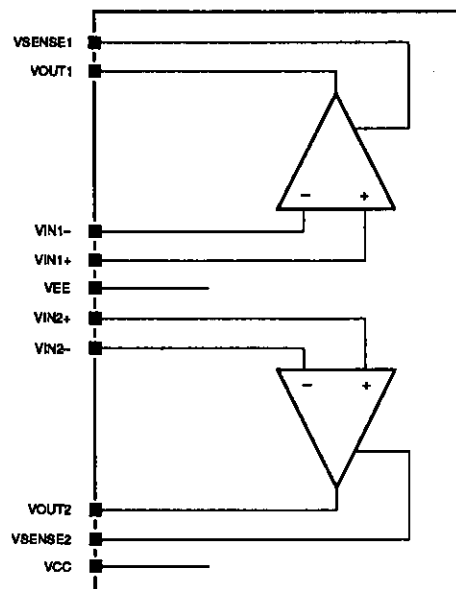
Unit: mm

3064A-SIP10F



LA6510

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

LA6510

Recommended Operating Conditions

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

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

Electrical Characteristics

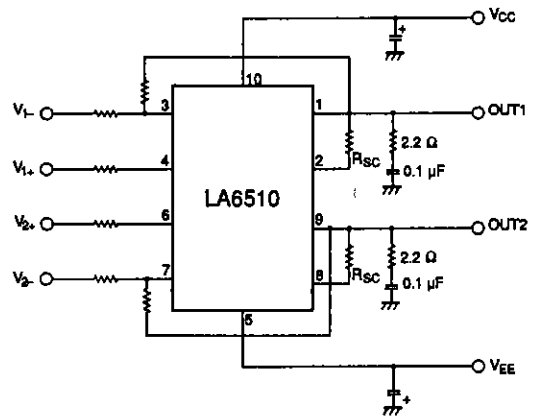
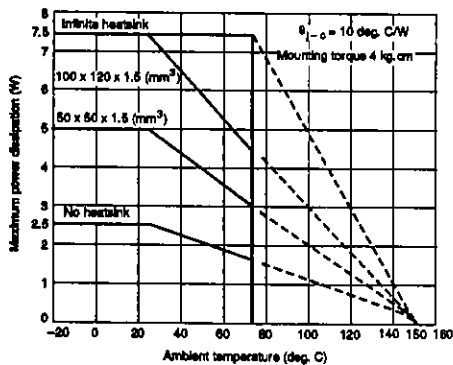
$V_{CC} = 15 \text{ V}$, $V_{EE} = -15 \text{ V}$, $T_a = 25 \text{ deg. C}$ unless otherwise noted

Parameter	Symbol	Condition	Rating			Unit
			min	typ	max	
Quiescent current	I_{CCO}		-	12	20	mA
Input offset voltage	V_{IO}	$R_g \leq 10 \text{ k}\Omega$	-	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_{G_O}		-	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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