Ordering number: EN 4424

Monolithic Linear IC

No.4424

LA6512,6513

High-Voltage Dual Power Operational Amplifiers

Overview

LA6512 (SIP10F) and LA6513 (SIP10) are power operational amplifier ICs capable of withstanding high voltages of ±30 V/1 A and are best suited for such voltage division devices as LCD drivers and general-purpose power operational amplifiers.

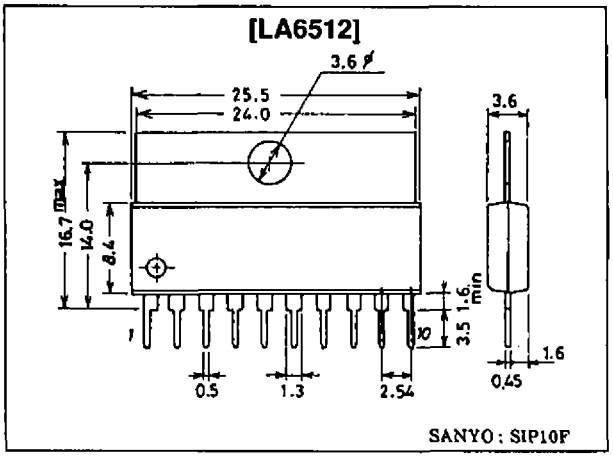
Features

- High output current (I_O max = 1.0A)
- High gain
- Equipped with current limiter pin (Adjustable by external settings)
- Supports single power source operation
- Withstands high voltages (±30 V)

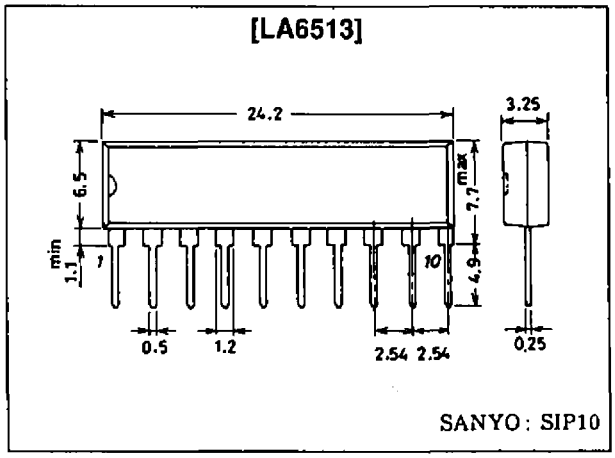
Package Dimensions

unit : mm

3046B-SIP10F



3043A-SIP10



Specifications

Maximum Ratings at Ta = 25°C

				unit
Maximum supply voltage	V_{CC}/V_{EE} max		±30	V
Differential input voltage	V_{IDIF}		56	V
Common mode input voltage	V_{ICOM}		±28	V
Maximum output current	I_O max		1.0	A
Allowable power dissipation	Pd max	LA6512	2.5	W
		LA6513	1.3	W
Operating temperature	Topr		−20 to +75	°C
Storage temperature	Tstg		−55 to +150	°C

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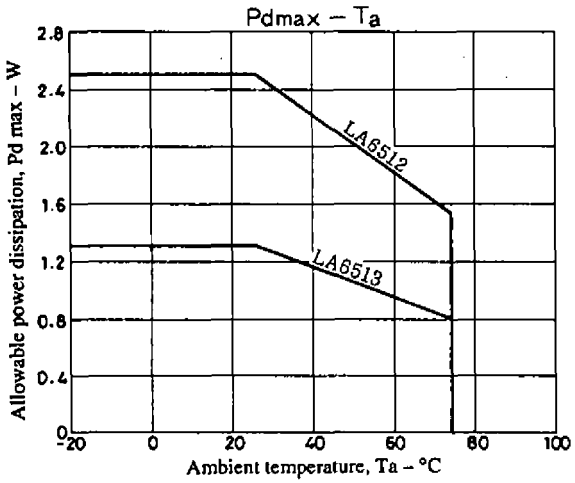
Operating Characteristics at Ta = 25°C, V_{CC}/V_{EE} = ±15

			min	typ	max	unit
No-load dissipation current	I_{CCO}		6	12	20	mA
Input offset voltage	V_{IO}	Rs≤10kΩ		2	6	mV
Input offset current	I_{IO}			10	200	nA
Input bias current	I_B			100	700	nA
Common mode input voltage range	V_{ICM}		−14		13	V
Common mode signal rejection ratio	C_{RM}		70	80		dB
Maximum output voltage	V_O max		±12	±13		V
Voltage gain	VG_O			100		dB
Slew rate	SR	G_V = 0, R_L = 33Ω, R = 2.2Ω, C = 0.1μF		0.15		V/μs
Supply voltage rejection ratio	SVRR			30	150	μV/V
Limiting current	I_{SC}	R_{SC} = 2.2Ω		0.35		A



Information (including circuit diagrams and circuit parameters) herein is for example only ; it is not guaranteed for volume production.

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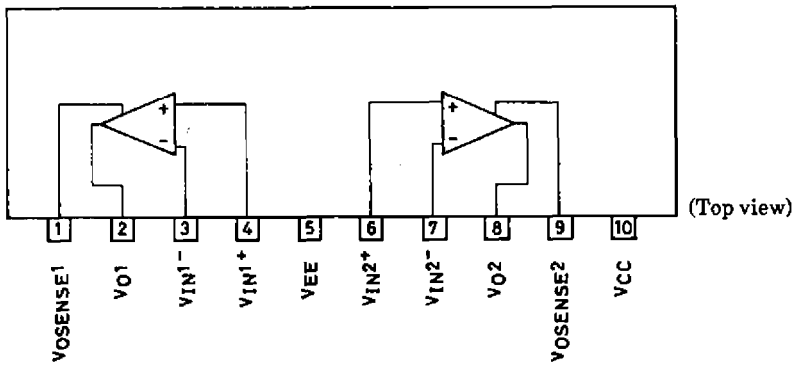
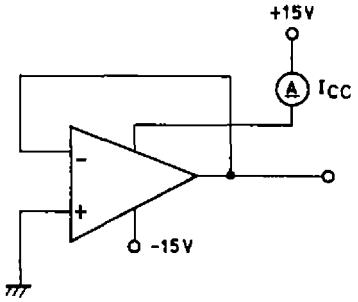
Pin Assignment

(LA6512, 6513 common)

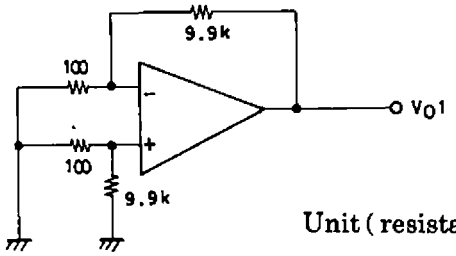


Test Circuit

I_{CC}



V_{IO}, SVRR



Unit (resistance:Ω)

- V_{IO} is with V_{CC}/V_{EE} = ±15 V
- V_{IO} = V01/100
- SVRR is with $\begin{bmatrix} V_{CC} = 15{,}5V \\ V_{EE} = -5, -15V \end{bmatrix}$
- SVR (+) = $\left|\frac{\Delta V_O1}{100 \times 10V}\right|$
- SVR (−)

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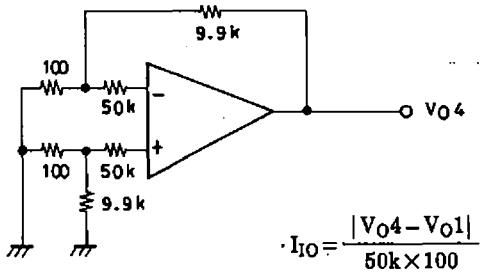
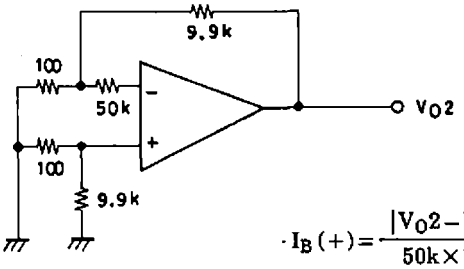
I_{IO}



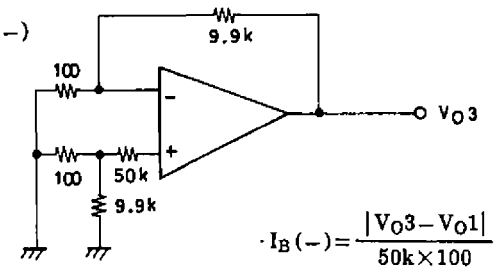
$$\cdot I_{IO} = \frac{|V_{O4} - V_{O1}|}{50k \times 100}$$

$I_{B}(+)$



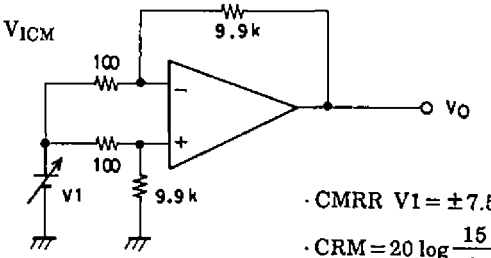
$$\cdot I_{B}(+) = \frac{|V_{O2} - V_{O1}|}{50k \times 100}$$

$I_{B}(-)$



$$\cdot I_{B}(-) = \frac{|V_{O3} - V_{O1}|}{50k \times 100}$$

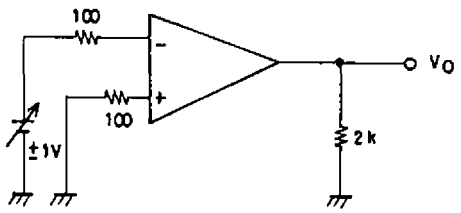
CMRR, V_{ICM}



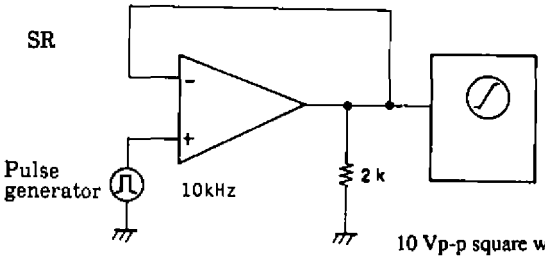
· CMRR V1 = ±7.5V

$$\cdot CRM = 20 \log \frac{15 \times 100}{|\Delta V_O|}$$

V_O

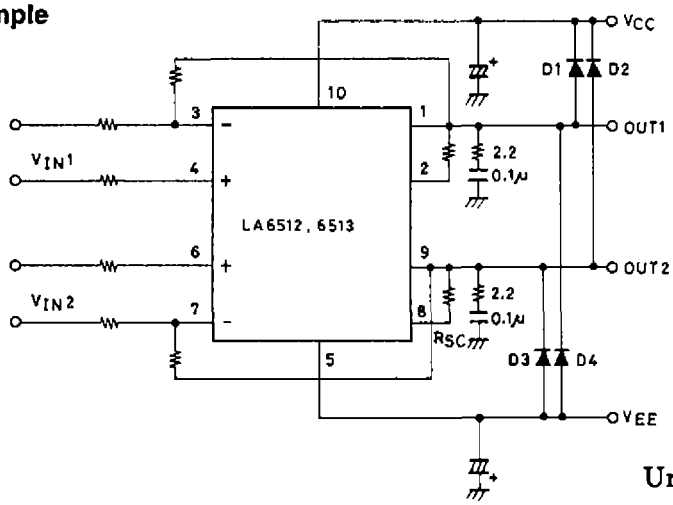


SR



10 Vp-p square wave

Application Circuit Example



Unit (resistance:Ω capacitance:F)

Note: When driving an inductive load, a D1 to D4 protective diode should be installed.