

Monolithic Linear IC

<b>SANYO</b>	No.4424	<b>LA6512,6513</b>
		High-Voltage Dual Power Operational Amplifiers

### Overview

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

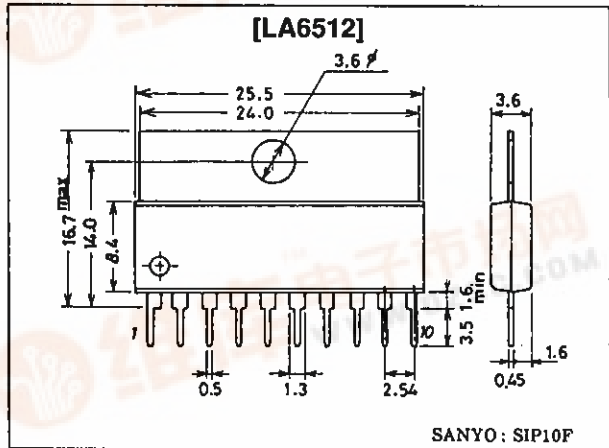
### Features

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

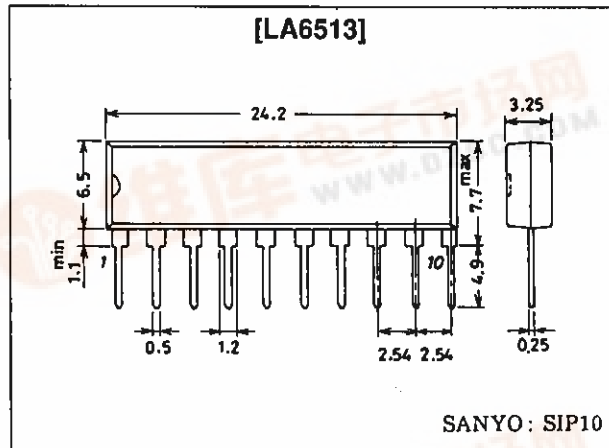
### Package Dimensions

unit : mm

#### 3046B-SIP10F



#### 3043A-SIP10



### Specifications

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

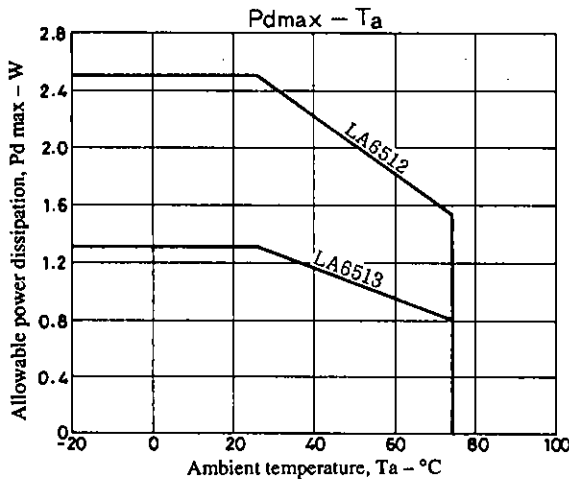
			unit
Maximum supply voltage	$V_{CC}/V_{EE \text{ max}}$	$\pm 30$	V
Differential input voltage	$V_{IDIF}$	56	V
Common mode input voltage	$V_{ICOM}$	$\pm 28$	V
Maximum output current	$I_O \text{ max}$	1.0	A
Allowable power dissipation	$P_d \text{ max}$	LA6512	2.5
		LA6513	1.3
Operating temperature	$T_{opr}$	-20 to +75	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$



## LA6512, 6513

### Operating Characteristics at $T_a = 25^\circ\text{C}$ , $V_{CC}/V_{EE} = \pm 15$

		min	typ	max	unit
No-load dissipation current	$I_{CCO}$	6	12	20	mA
Input offset voltage	$V_{IO}$		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	$V_{O\max}$	$\pm 12$	$\pm 13$		V
Voltage gain	$V_{G_O}$		100		dB
Slew rate	SR	$G_V = 0, R_L = 33\Omega, R = 2.2\Omega, C = 0.1\mu\text{F}$			V/ $\mu\text{s}$
Supply voltage rejection ratio	SVRR		30	150	$\mu\text{V/V}$
Limiting current	$I_{SC}$	$R_{SC} = 2.2\Omega$			A

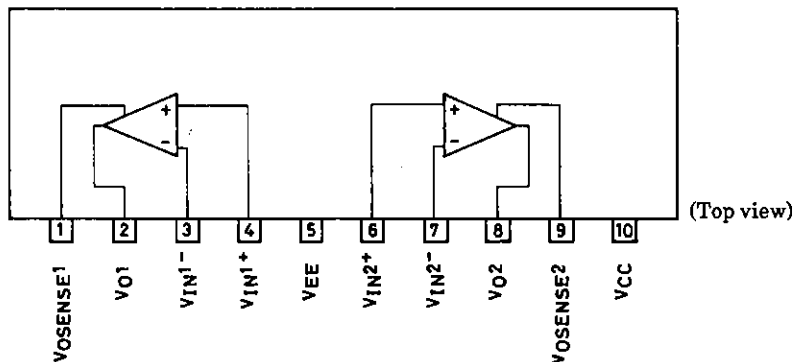


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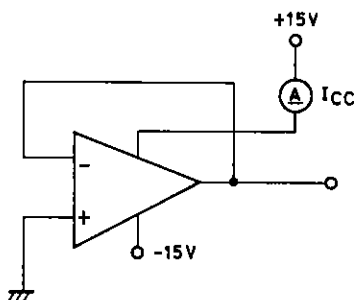
### Pin Assignment

(LA6512, 6513 common)

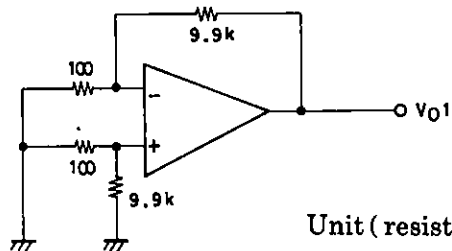


### Test Circuit

$I_{CC}$



$V_{IO}, SVRR$



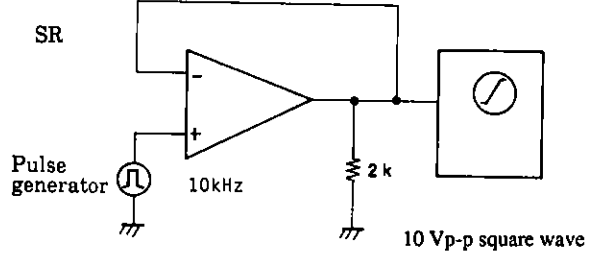
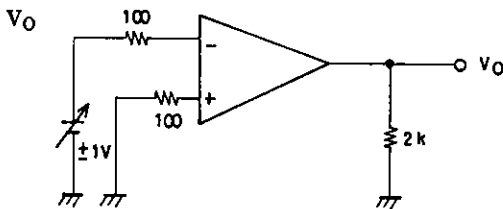
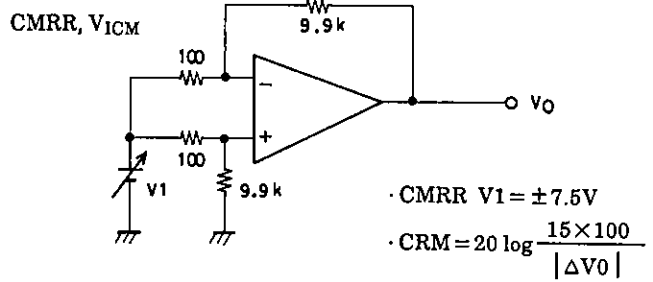
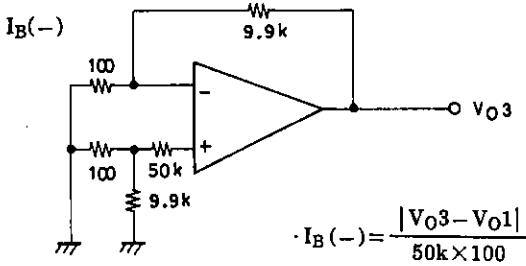
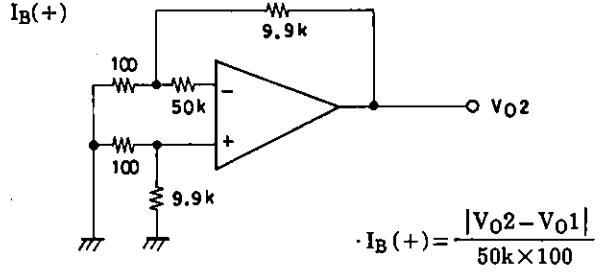
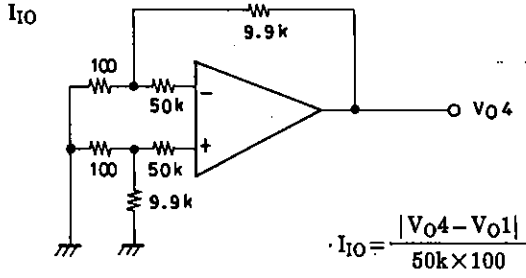
Unit (resistance:  $\Omega$ )

- $V_{IO}$  is with  $V_{CC}/V_{EE} = \pm 15\text{ V}$
- $SVRR$  is with  $\left[ \begin{matrix} V_{CC} = 15.5\text{V} \\ V_{EE} = -5, -15\text{V} \end{matrix} \right]$
- $V_{IO} = VO1/100$
- $SVR (+) = \left| \frac{\Delta VO1}{100 \times 10\text{V}} \right|$
- $SVR (-) = \left| \frac{\Delta VO1}{100 \times 10\text{V}} \right|$

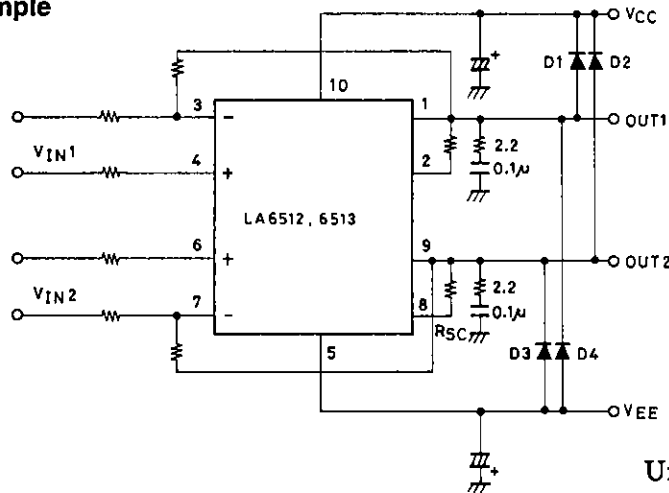
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LA6512, 6513

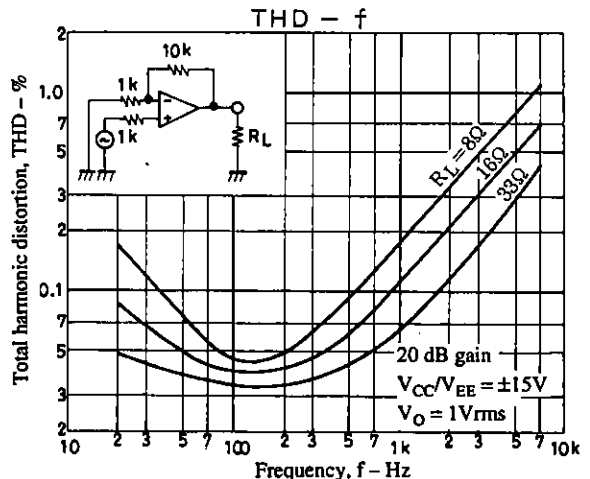
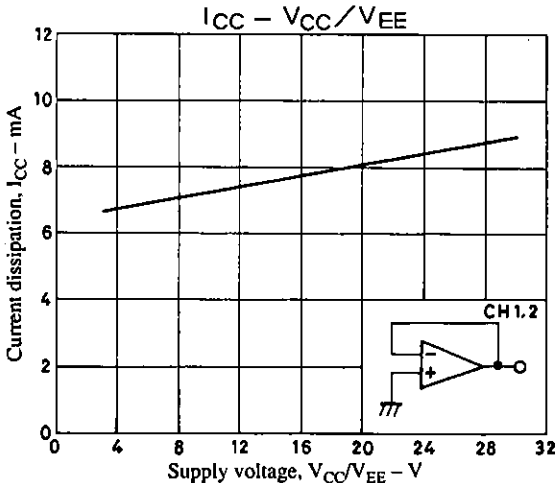
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Application Circuit Example



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



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