Ordering number : EN4424A

SANYO Semiconductors
DATA SHEET

Monolithic Linear IC

LA6512 — High-Voltage Dual Power Operational Amplifier

Overview

The LA6512 is a power operational amplifier IC capable of withstanding high voltages of ±30V/1A 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 (±30V).

Specifications

Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	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		2.5	W
Operating temperature	Topr		-20 to +75	°C
Storage temperature	Tstg		-55 to +150	°C

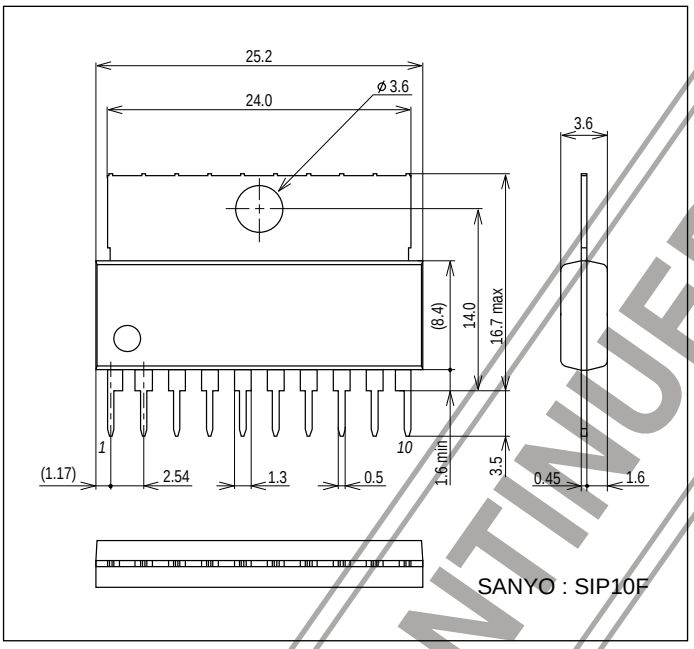
Electrical Characteristics at Ta = 25°C, V_{CC} = ±15V

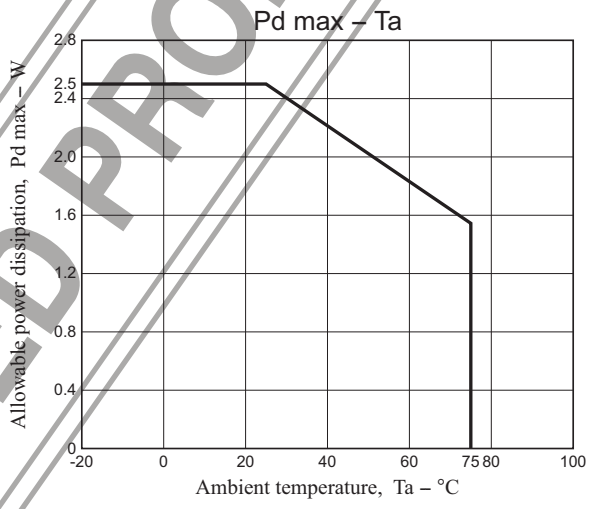
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Current drain with no load	I_{CCO}		6	12	20	mA
Input offset voltage	V_{IO}	$R_S \leq 10k\Omega$		2	6	mV
Input offset current	I_{IO}			10	200	nA
Input bias current	I_B			100	700	nA
Input common-mode voltage range	V_{ICM}		-14		+13	V
Common-mode signal rejection ratio	CMRR		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

Package Dimensions

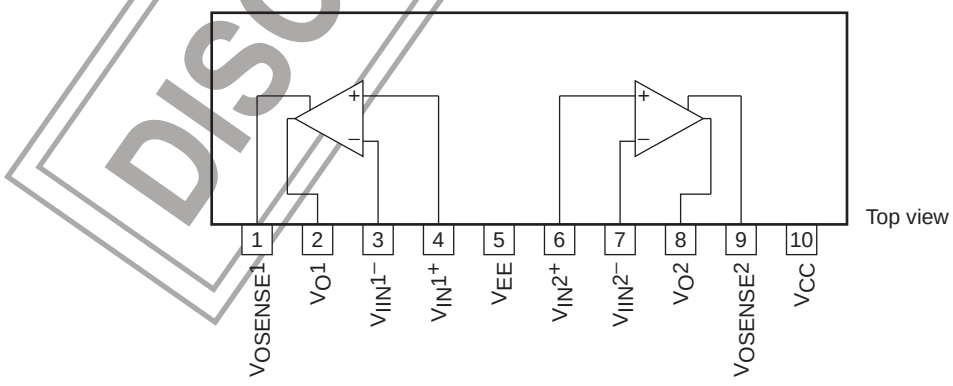
unit : mm (typ)

3046D



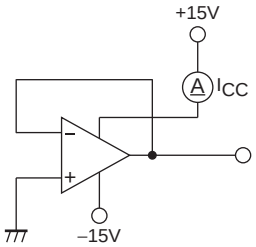


Pin Assignment and Block Diagram

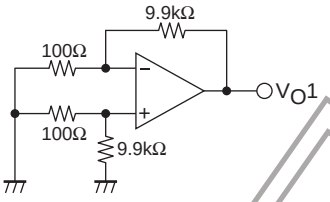


Test Circuit

(1) I_{CC}



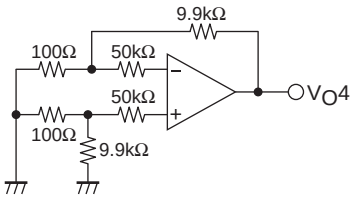
(2) V_{IO},SVRR



・V_{IO} is $V_{CC}/V_{EE} = \pm 15V$ ・$V_{IO} = V_O1/100$

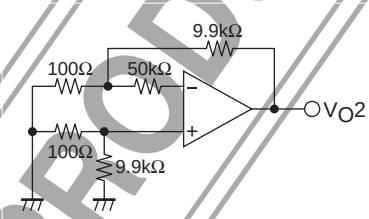
・SVRR is $\begin{pmatrix} V_{CC} = 15, 5V \\ V_{EE} = -5, -15V \end{pmatrix}$ $\begin{matrix} \cdot SVR(+) \\ \cdot SVR(-) \end{matrix} = \left| \dfrac{\Delta V_O1}{100 \times 10V} \right|$

(3) I_{IO}



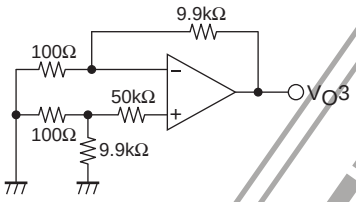
$\cdot I_{IO} = \dfrac{|V_O4 - V_O1|}{50k\Omega \times 100}$

(4) $V_B(+)$



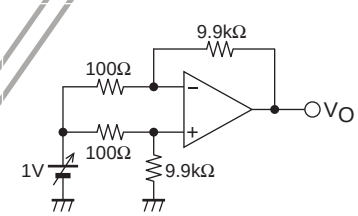
$\cdot I_{B(+)} = \dfrac{|V_O2 - V_O1|}{50k\Omega \times 100}$

(5) $V_B(-)$



$\cdot I_{B(-)} = \dfrac{|V_O3 - V_O1|}{50k\Omega \times 100}$

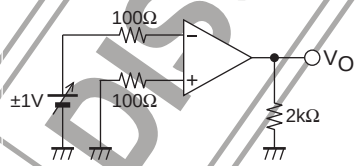
(6) CMRR,V_{ICM}



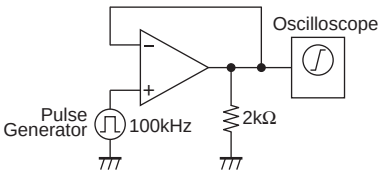
・CMRR V1 = ±7.5V

・$CMR = 20\log \dfrac{15 \times 100}{|\Delta V_O|}$

(7) V_O

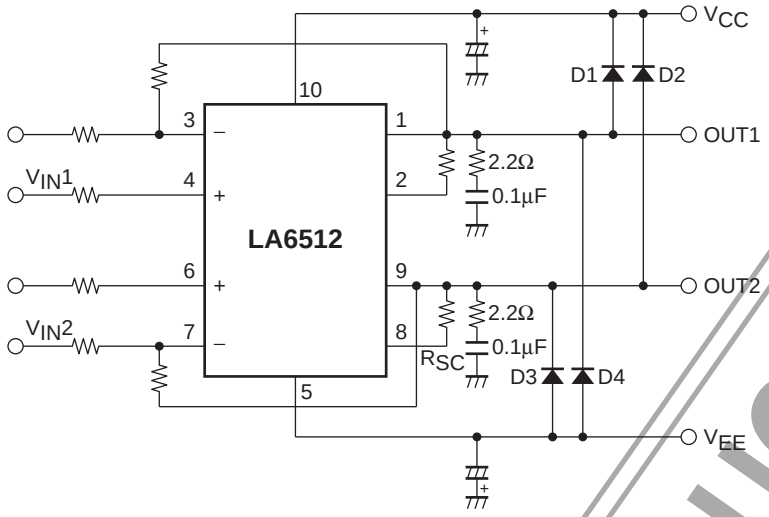


(8) SR



10Vp-p Square wave

Sample Application Circuit



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