Ordering number : EN2621B

SANYO Semiconductors
DATA SHEET

Monolithic Linear IC

LA6520 — 3-Output Power Operational Amplifier

Overview

The LA6520 is a 3-output power OP amp designed for use in consumer, industrial applications.

Features

- High output current (Io = 0.5 A)
- High gain
- With current limiter
- Wide operating voltage range (±2 to ±18 V)
- Capable of being operated from single supply (4 to 36V)
- On-chip thermal shutdown

Specification

Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC}/V_{EE}		±18	V
Differential input voltage	V_{IDIf}		30	V
Common-mode input voltage	V_{ICOM}		±15	V
Allowable power dissipation	Pd max		1.9	W
Operating temperature	Topr		–20 to +75	°C
Storage temperature	Tstg		–55 to +150	°C

Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Recommended operating supply voltage	V_{CC}/V_{EE}		±2 to ±16	V

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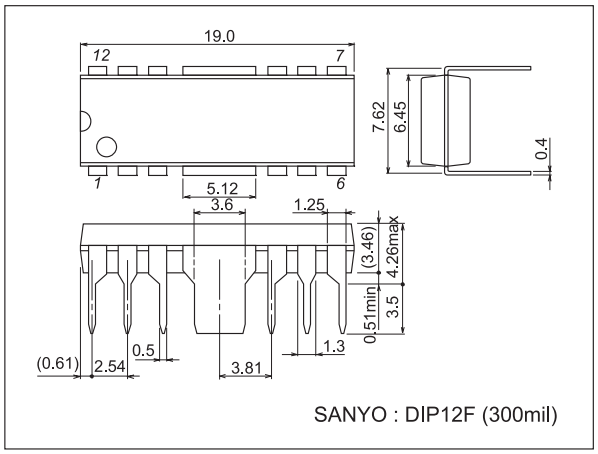
Electrical Characteristics at Ta = 25°C, V_{CC}/V_{EE} = ±15V

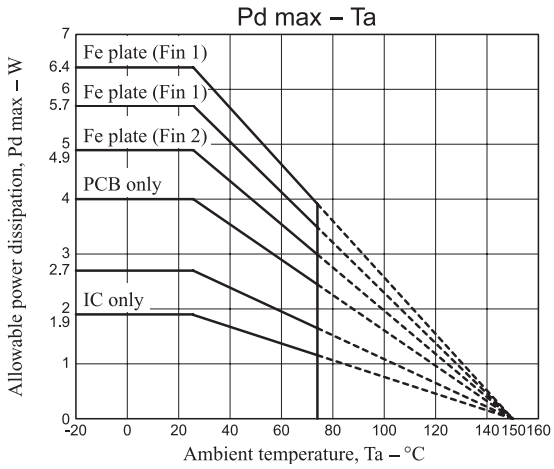
Parameter	Symbol	Conditions	min	typ	max	Unit
Quiescent current dissipation	I_{CCO}			20		mA
Input offset voltage	V_{IO}	Rs ≤ 10kΩ		2		mV
Input offset current	I_{IO}			10		nA
Input bias current	I_B			50		nA
Common-mode input voltage range	V_{ICM}		−15		+13	V
Common-mode rejection	CMR			80		dB
Maximum output voltage	Vo	R_L = 33Ω		±12		V
Voltage gain	VG_O			85		dB
Slew rate	SR	G_V = 0, R_L = 33Ω, R = 10Ω, L = 0.1μF		0.15		V/μs
Supply voltage rejection	SVR			30		μV/V
Limiting current (On-chip limiter)	I_{SC}			0.5		A

Package Dimensions

unit : mm (typ)

3022B





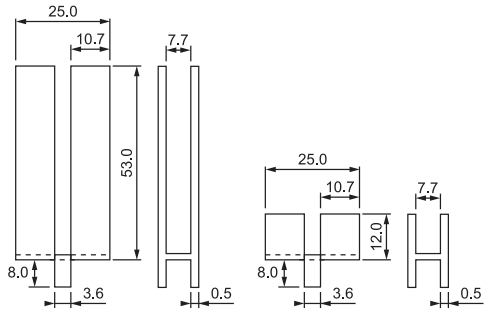


fig.1

fig.2

(Unit : mm)

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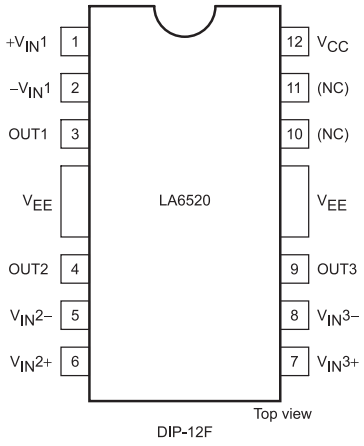
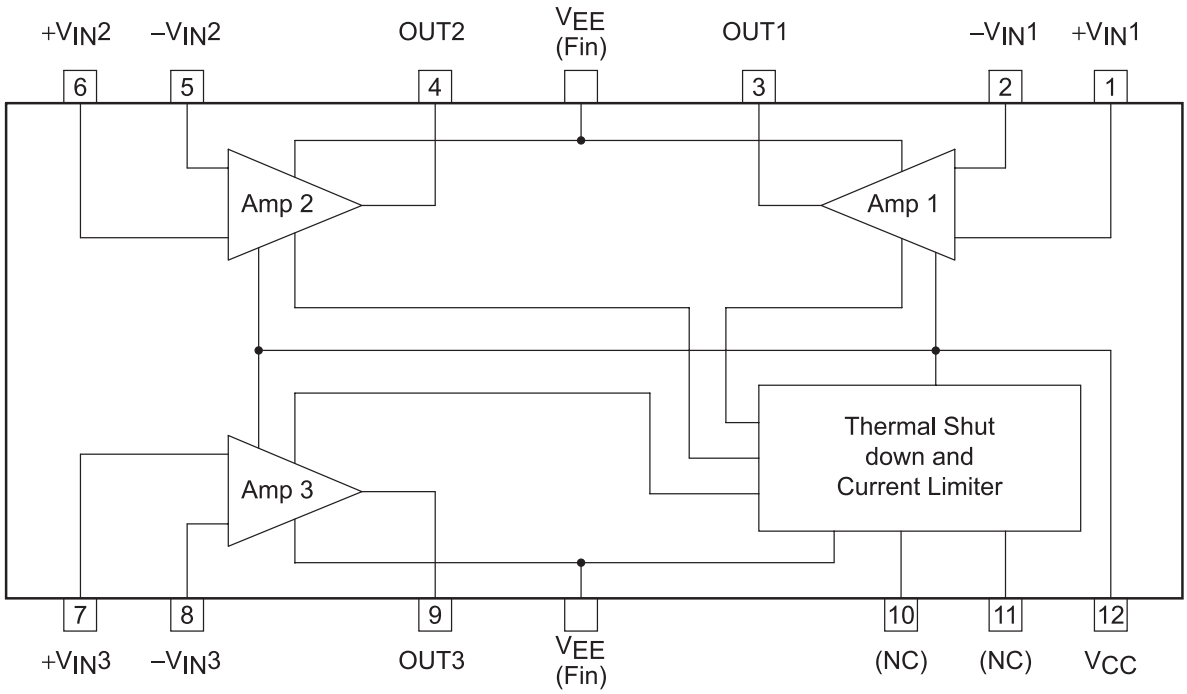
Pin Assignment



The No. 10 and 11 pins (NC pins) are not connected to the internal IC so do not use them.

Block Diagram



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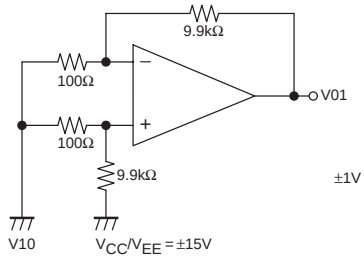
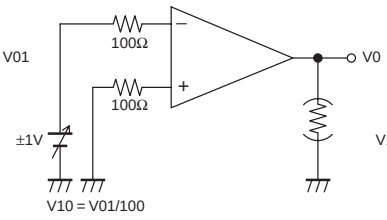
Test Circuits

① V10, SVRR



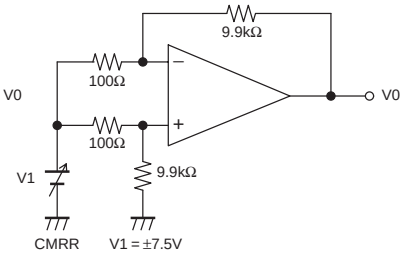
$$\text{SVRR} \left[\begin{matrix} V_{CC} = 15,\ 5V \\ V_{EE} = -5,\ -15V \end{matrix} \right.$$

② V0



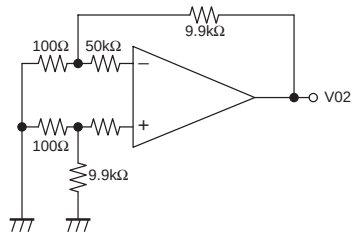
$$\left. \begin{matrix} \text{SVR}(+) \\ \text{SVR}(-) \end{matrix} \right] = \left| \frac{\Delta V01}{100 \times 10V} \right|$$

③ CMRR, VICM



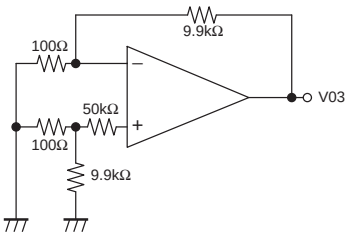
$$\text{CMR} = 20 \log \frac{15 \times 100}{|\Delta V0|}$$

④ IB(+)

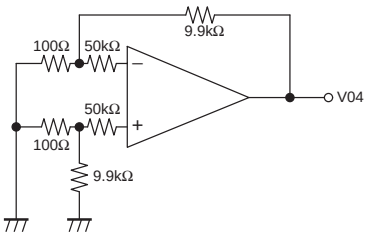


$$\text{IB}(+) = \frac{|V02 - V01|}{50k\Omega \times 100}$$

⑤ IB(–)

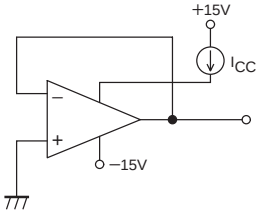


⑥ I10

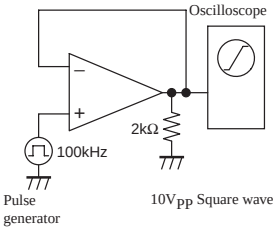


$$\text{I10} = \frac{|V04 - V01|}{50k\Omega \times 100}$$

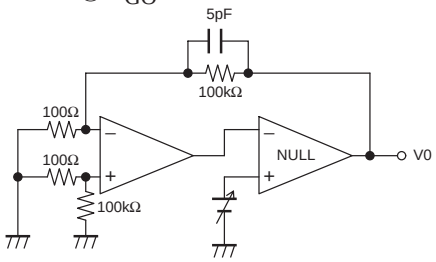
⑦ I_{CC}



⑧ SR



⑨ V_{GO}



$$\text{VGO} = 20 \log \frac{1000 \times 20}{\Delta V0}$$

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