



LA6540M

4-output Power Operational Amplifier

Overview

The LA6540M is a 4-output power operational amplifier developed for use in consumer and industrial equipment.

Functions

- High output current (I_O max = 0.7 A : typ)
- Includes a current limiter
- Wide operating voltage range (± 2 to ± 16 V)
- Single-supply operation possible (4 to 32 V)
- Thermal shutdown built in

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC}/V_{EE}		± 18	V
Input voltage	V_{IN}		± 17	V
Allowable power dissipation	P_d max		0.7	W
Operating temperature	T_{opr}		-20 to $+75$	$^\circ\text{C}$
Storage temperature	T_{stg}		-40 to $+150$	$^\circ\text{C}$

Operation Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC} = +15\text{ V}$, $V_{EE} = -15\text{ V}$

Parameter	Symbol	Conditions	min	typ	max	Unit
No-load current drain	I_{CC}	Mute OFF		15	30	mA
Input offset voltage	V_{IO}	$R_S \leq 10\text{ k}\Omega$		2	7	mV
Input offset current	I_{IO}			10	100	nA
Input bias current	I_B			50	300	nA

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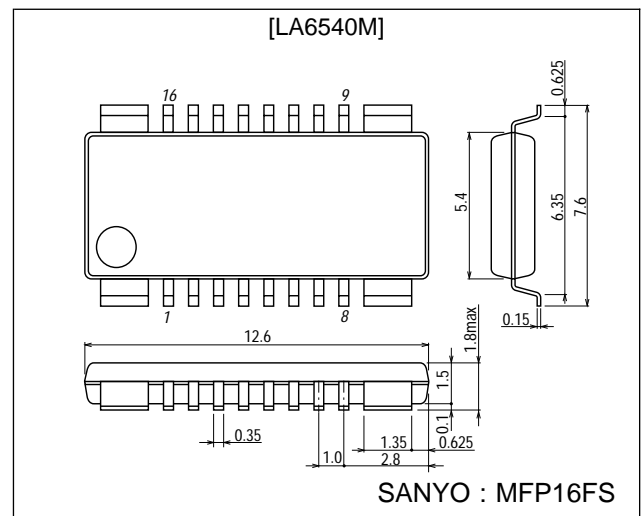
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Package Dimensions

unit : mm

3097-MFP16FS

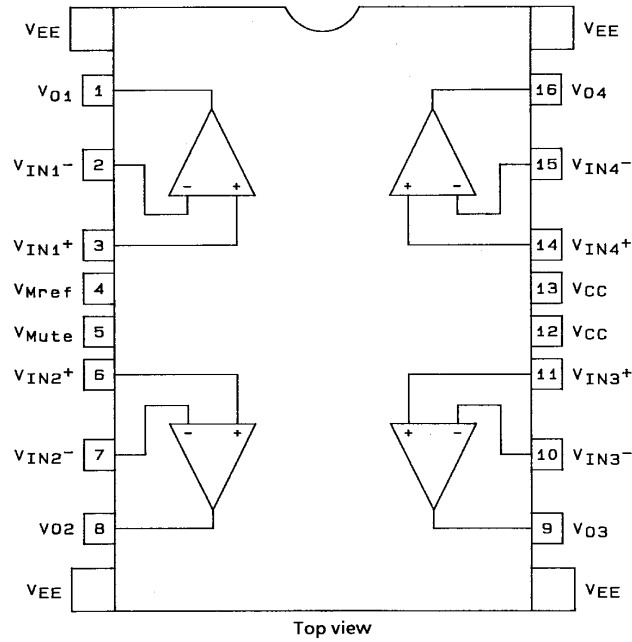


LA6540M

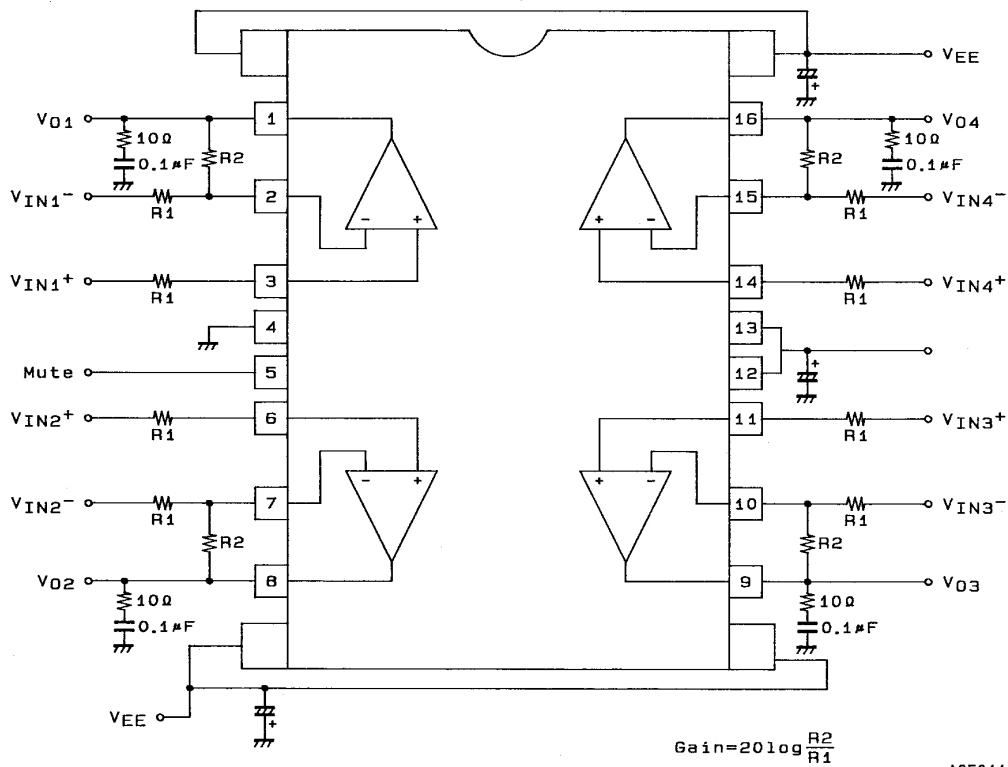
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Parameter	Symbol	Conditions	min	typ	max	Unit
Input common-mode voltage range	V_{ID}		-14		+13	V
Common-mode signal rejection ratio	CMRR		60	75		dB
Maximum output voltage	V_O	$R_L = 33 \Omega$	± 11	± 12		V
Slew rate	SR	$R_L = 33 \Omega, R_1 = 2.2 \Omega, C_1 = 0.1 \mu F$		0.15		V/ μs
Limiting current (built in)	I_{SC}		0.5	0.7		A

Pin Assignment

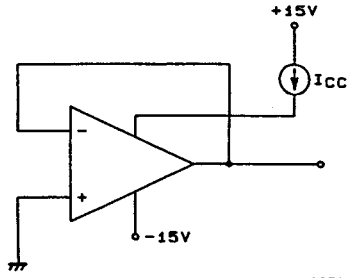


Sample Application Circuit



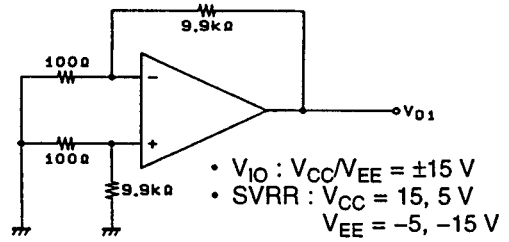
Test Circuits

I_{CC}



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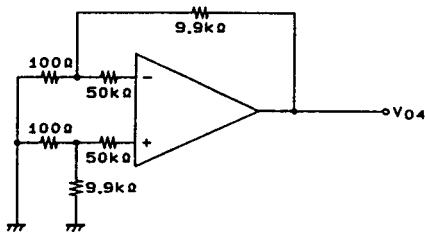
V_{IO}, SVRR



- V_{IO} : V_{CC}/V_{EE} = ±15 V
- SVRR : V_{CC} = 15, 5 V
V_{EE} = -5, -15 V

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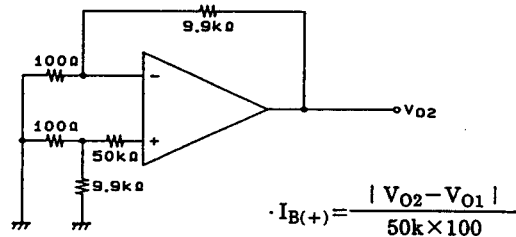
I_{IO}



$$\cdot I_{IO} = \frac{|V_{04} - V_{01}|}{50k \times 100}$$

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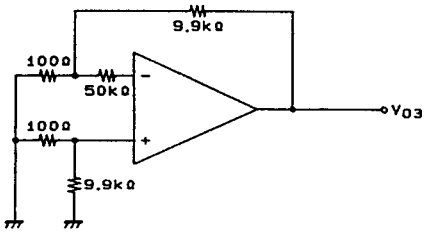
I_{B(+)}



$$\cdot I_{B(+)} = \frac{|V_{02} - V_{01}|}{50k \times 100}$$

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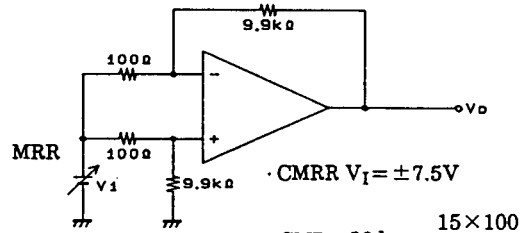
I_{B(-)}



$$\cdot I_{B(-)} = \frac{|V_{03} - V_{01}|}{50k \times 100}$$

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CMRR, V_{ICM}

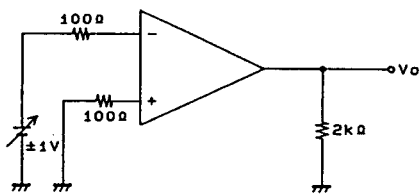


- CMRR V_I = ±7.5V

$$\cdot CMR = 20 \log \frac{15 \times 100}{|\Delta V_0|}$$

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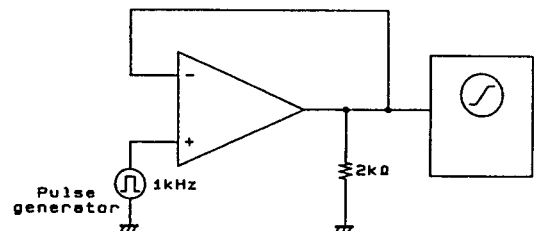
V_O



$$\begin{aligned} \cdot V_{IO} &= V_{01}/100 \\ \cdot SVR(+) &= \left| \frac{\Delta V_{01}}{100 \times 10V} \right| \\ \cdot SVR(-) &= \left| \frac{\Delta V_{01}}{100 \times 10V} \right| \end{aligned}$$

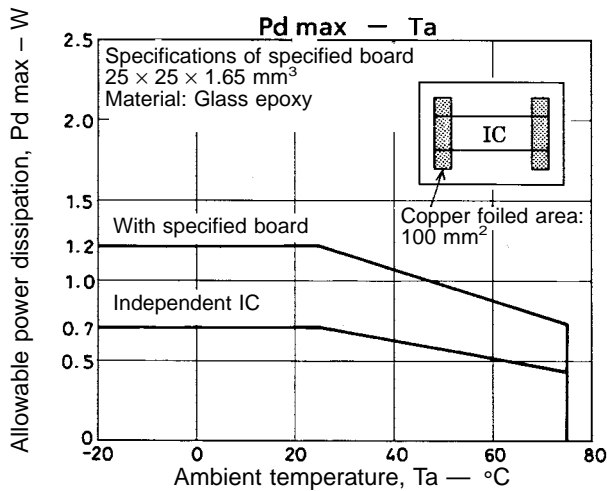
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SR



10 Vp-p Square wave

A05019



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