



LA6518M

2-Channel Power Operational Amplifier

Applications

The LA6518M is a 2-output power operational amplifier developed for use in consumer and industrial equipment.

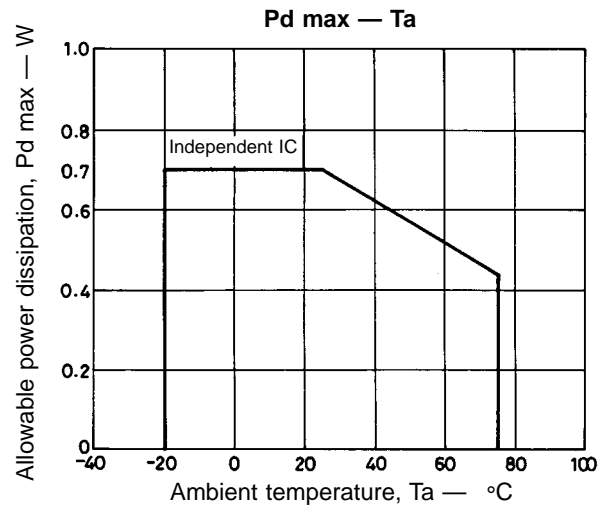
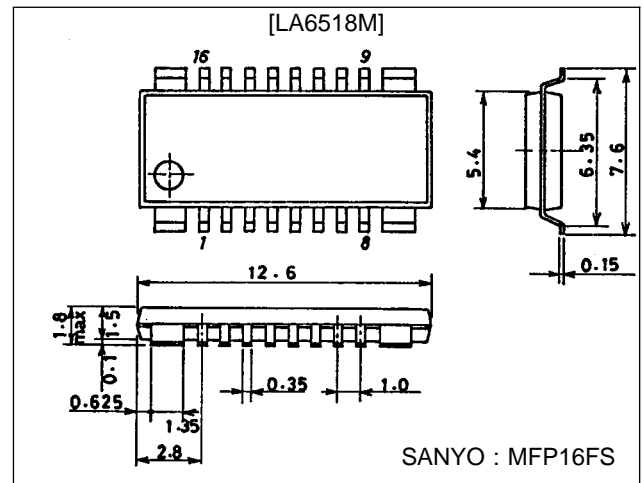
Features and Functions

- High output current (I_O max = 0.5 A)
- High gain
- Includes current limiter
- Wide operating voltage range (± 2 to ± 18 V)
- Single power supply operation possible (4 to 36 V)
- Thermal shutdown function built in

Package Dimensions

unit : mm

3097-MFP16FS



Specifications

Maximum Ratings at Ta = 25 °C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC}/V_{EE}		± 18	V
Differential input voltage	V_{ID}		30	V
Common-mode input voltage	V_{IN}		± 15	V
Allowable power dissipation	P_d max		0.7	W
Operating temperature	T_{opr}		-20 to +75	°C
Storage temperature	T_{stg}		-55 to +150	°C

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Operating Conditions at $T_a = 25\text{ }^\circ\text{C}$

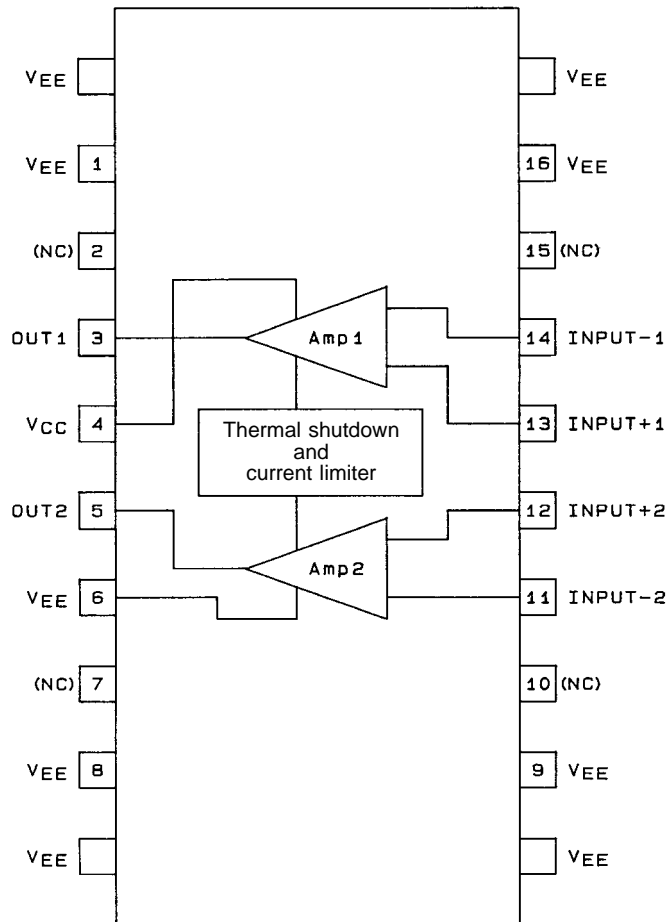
Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}/V_{EE}		± 2 to ± 16	V

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

Parameter	Symbol	Conditions	min	typ	max	Unit
No-load current drain	I_{CC}			8	20	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			100	300	nA
Common-mode input voltage range	V_{ICM}		-14		+13	V
Common-mode signal rejection ratio	CMR		65	80		dB
Maximum output voltage	V_O	$R_L = 33\ \Omega$	± 11	± 12		V
Voltage gain	V_{GO}			85		dB
Slew rate	SR	$G_V = 0, R_L = 33\ \Omega, R = 10\ \Omega, L = 0.1\ \mu\text{F}$		0.15		V/ μs
Supply voltage rejection ratio	SVR			30	300	$\mu\text{V/V}$
Limit current (built-in type)	I_{SC}			0.5		A

- Thermal shutdown function built in.

Block Diagram and Pin Assignment



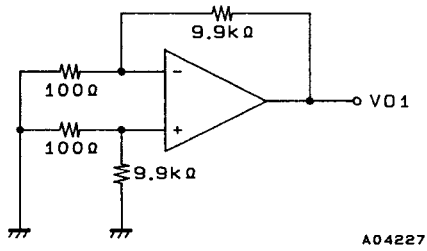
Do not use the NC pin.

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Top view

Test Circuit

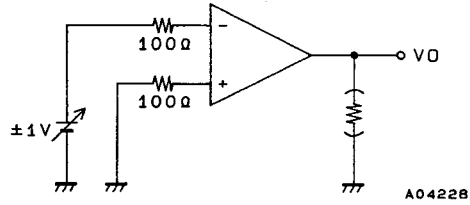
1. $V_{I0}, SVRR$



$$V_{I0} V_{CC}/V_{EE} = \pm 15V$$

$$SVRR \begin{cases} V_{CC} = 15V, 5V \\ V_{EE} = -5V, -15V \end{cases}$$

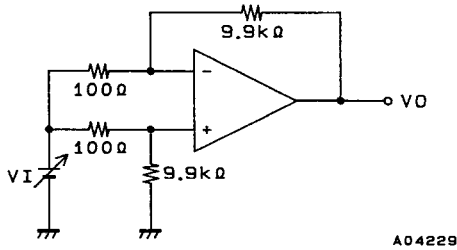
2. V_O



$$V_{I0} = V_{O1}/100$$

$$\begin{aligned} SVR(+) &= \left| \frac{\Delta V_{O1}}{100k\Omega \times 10V} \right| \\ SVR(-) &= \left| \frac{\Delta V_{O1}}{100k\Omega \times 10V} \right| \end{aligned}$$

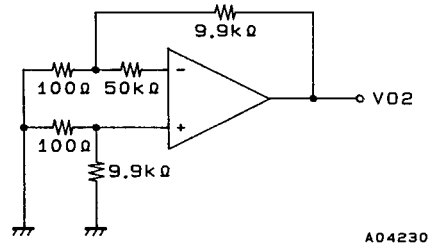
3. CMRR, V_{ICM}



$$CMRR V_I = \pm 7.5V$$

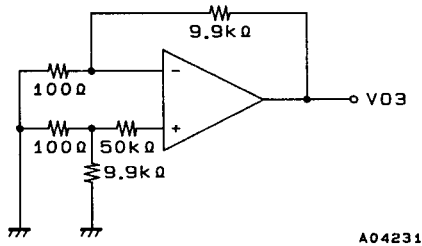
$$CMR = 20 \log \frac{15 \times 100}{|\Delta V_O|}$$

4. $IB(-)$



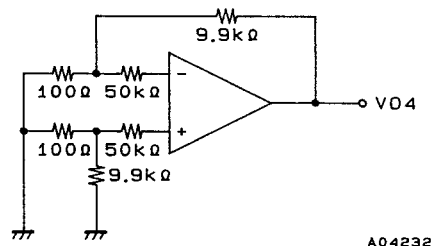
$$IB(-) = \frac{|\Delta V_{O2} - V_{O1}|}{50k\Omega \times 100}$$

5. $IB(+)$



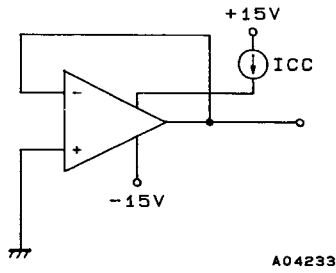
$$IB(+) = \frac{|\Delta V_{O3} - V_{O1}|}{50k\Omega \times 100}$$

6. I_{I0}

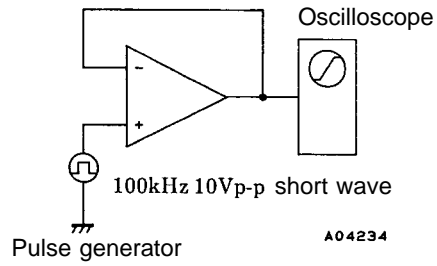


$$I_{I0} = \frac{|V_{O4} - V_{O1}|}{50k\Omega \times 100}$$

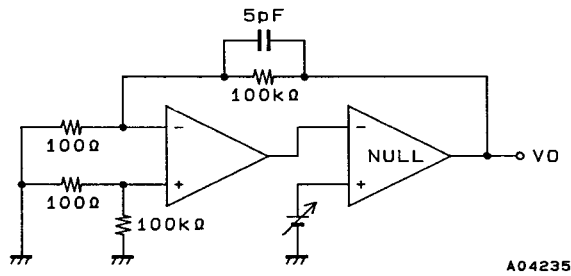
7. I_{CC}



8. SR



9. V_{GO}



$$V_{GO} = 20 \log \frac{1000 \times 20}{\Delta V_O}$$

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