

**SANYO****LA6518M****2-Channel Power Operational Amplifier****Applications**

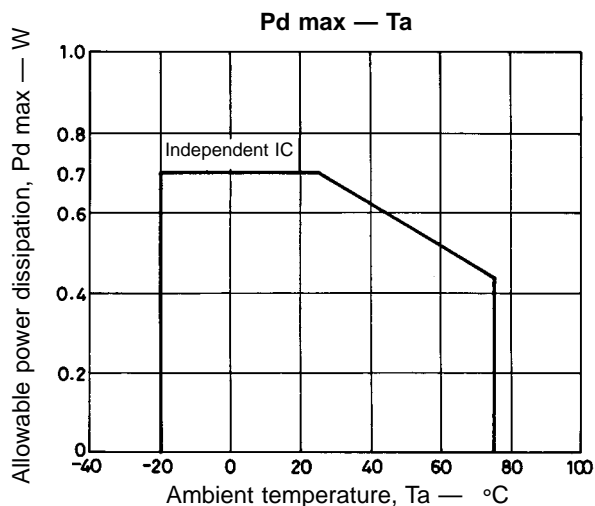
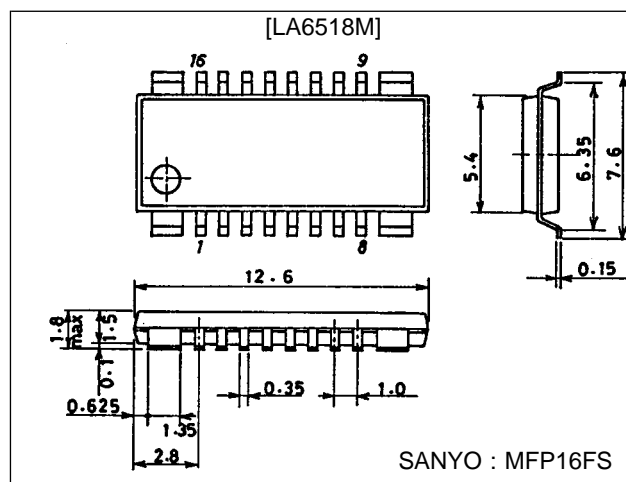
The LA6518M is a 2-output power operational amplifier developed for use in consumer and industrial equipment.

**Features and Functions**

- High output current ( $I_O$  max = 0.5 A)
- High gain
- Includes current limiter
- Wide operating voltage range ( $\pm 2$  to  $\pm 18$  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  $T_a = 25^\circ\text{C}$** 

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

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92995HA(II) No.5162-1/4

## LA6518M

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

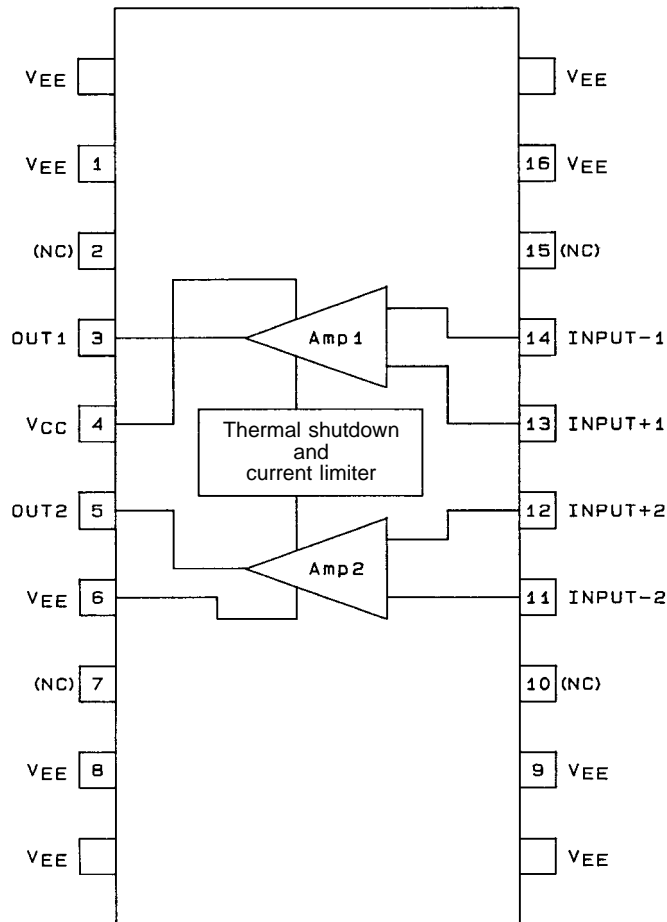
Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	$V_{CC}/V_{EE}$		$\pm 2$ to $\pm 16$	V

### 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	$V_O$	$R_L = 33\text{ }\Omega$	$\pm 11$	$\pm 12$		V
Voltage gain	$V_{GO}$			85		dB
Slew rate	SR	$G_V = 0$ , $R_L = 33\text{ }\Omega$ , $R = 10\text{ }\Omega$ , $L = 0.1\text{ }\mu\text{F}$		0.15		V/ $\mu\text{s}$
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



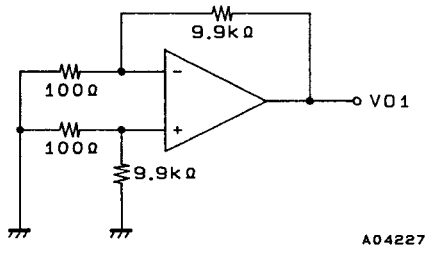
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Do not use the NC pin.

Top view

# Test Circuit

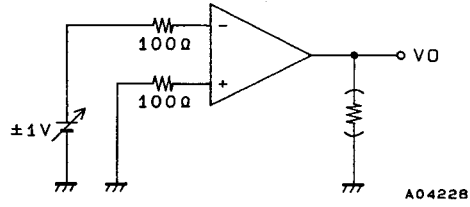
## 1. $V_{IO}$ , SVRR



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

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

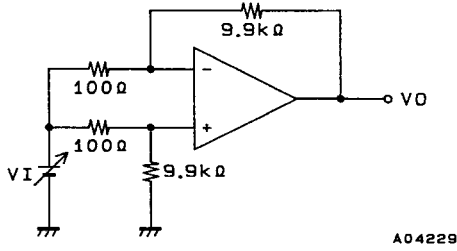
## 2. $V_O$



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

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

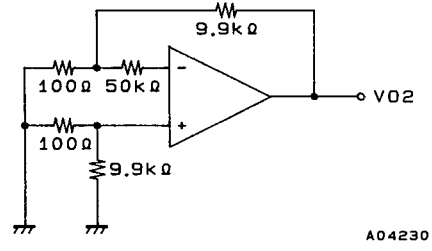
## 3. CMRR, $V_{ICM}$



$$CMRR V_I = \pm 7.5V$$

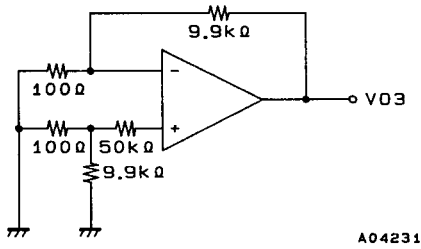
$$CMR = 20 \log \frac{15 \times 100}{|\Delta V_O|}$$

## 4. $I_B(-)$



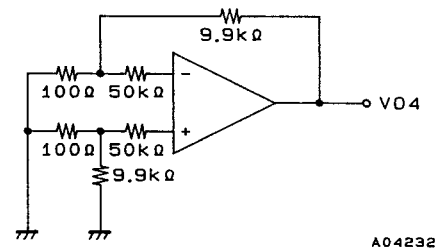
$$I_B(-) = \frac{|\Delta V_{O2} - V_{O1}|}{50k\Omega \times 100}$$

## 5. $I_B(+)$



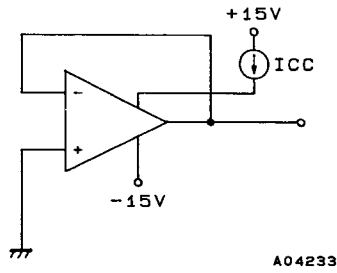
$$I_B(+) = \frac{|\Delta V_{O3} - V_{O1}|}{50k\Omega \times 100}$$

## 6. $I_{IO}$

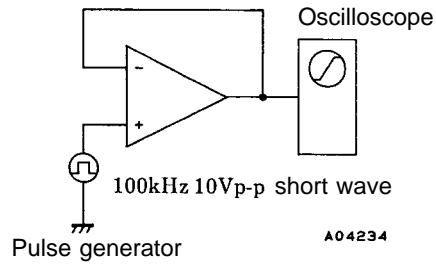


$$I_{IO} = \frac{|V_{O4} - V_{O1}|}{50k\Omega \times 100}$$

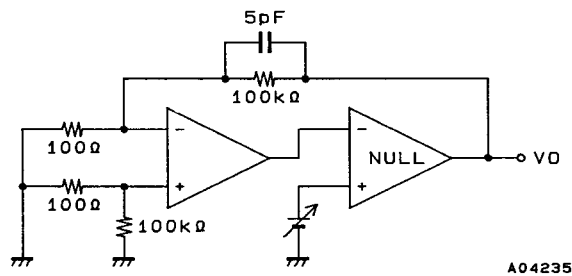
7.  $I_{CC}$



8. SR



9.  $V_{GO}$



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

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