



SANYO Semiconductors

# DATA SHEET

## LA6517

## LA6517M

## LA6518M

Monolithic Linear IC

## — 2-Output Power Operational Amplifier

### Overview

The LA6517, LA6517M, and LA6518M are 2-output power operational amplifiers developed for use in consumer and industrial equipment.

### Features

- High output current ( $I_{O\ max} = 0.5A$ ).
- High gain.
- Includes a current limiter.
- Wide operating voltage range ( $\pm 2$  to  $\pm 18V$ ).
- Single-supply operation possible (4 to 36V).
- Thermal shutdown built in.

### Specifications

Maximum Ratings at  $T_a = 25^\circ C$

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	Pd max	LA6517	1000	mW
		LA6517M	350	mW
		LA6518M	700	mW
Operating temperature	Topr		-20 to +75	$^\circ C$
Storage temperature	Tstg		-55 to +150	$^\circ C$

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# LA6517, 6517M, 6518M

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

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

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

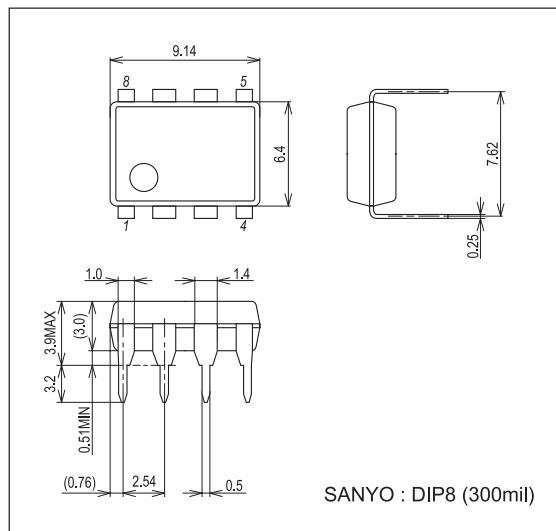
Parameter	Symbol	Conditions	min	typ	max	Unit
No-load current drain	$I_{CC}$			8	20	mA
Input offset voltage	$V_{IO}$	$R_S \leq 10\text{k}\Omega$		2	7	mV
Input offset current	$I_{IO}$			10	100	nA
Input bias current	$I_B$			100	300	nA
Common-mode input voltage range	$V_{ICM}$	LA6517, 6517M	-15		+13	V
		LA6518M	-14		+13	V
Common-mode signal rejection ratio	CMRR		65	80		dB
Maximum output voltage	$V_O$	$R_L = 33\Omega$	$\pm 11$	$\pm 12$		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/ $\mu\text{s}$
Supply voltage rejection ratio	SVR			30	300	$\mu\text{V}/\text{V}$
Limiting current (built in)	$I_{SC}$			0.5		A

## Package Dimensions

unit : mm (typ)

3001D

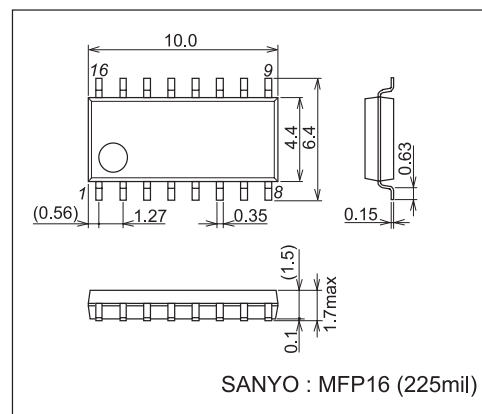
[LA6517]



unit : mm (typ)

3035B

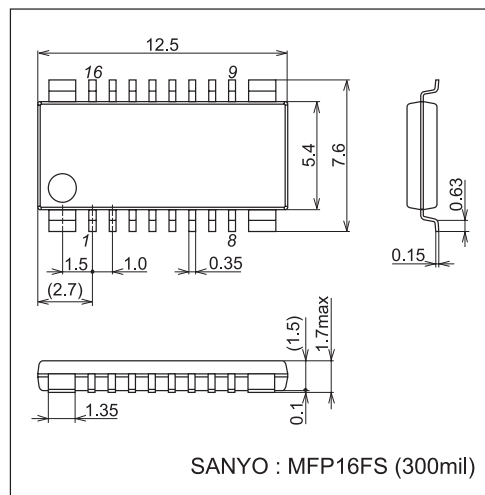
[LA6517M]



unit : mm (typ)

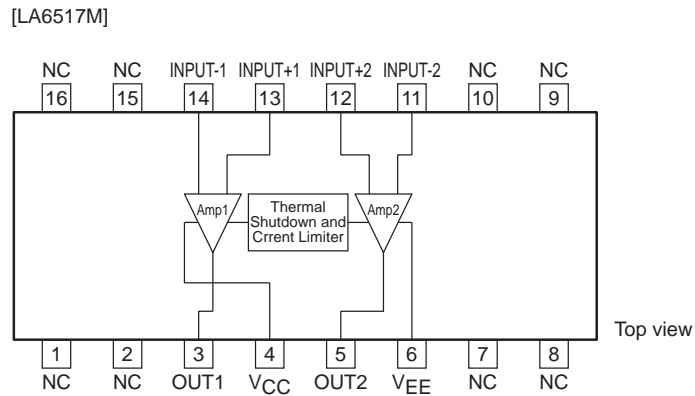
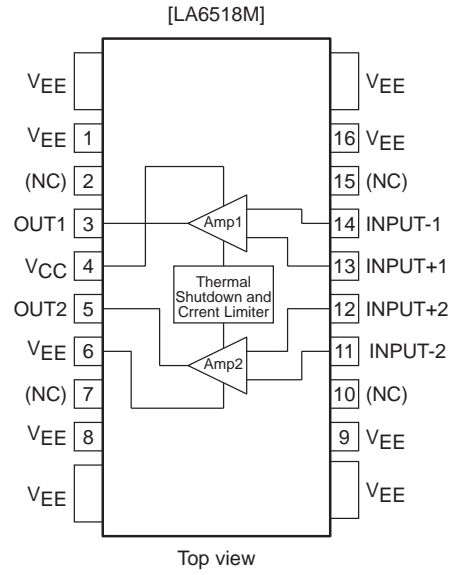
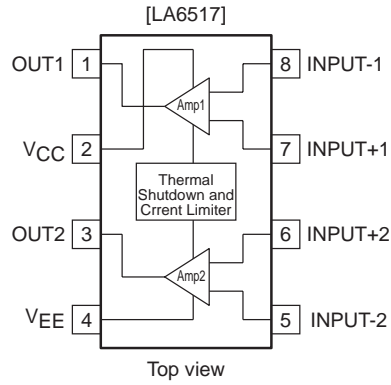
3097B

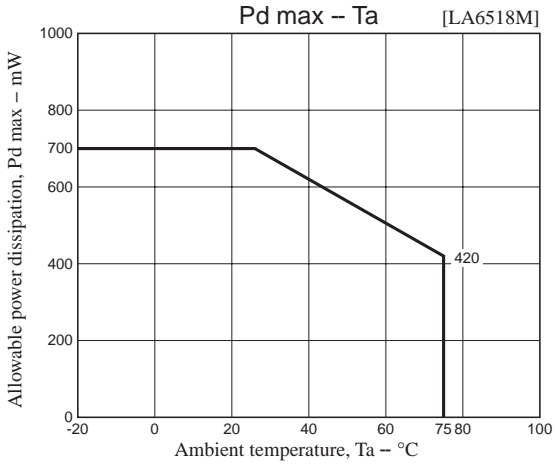
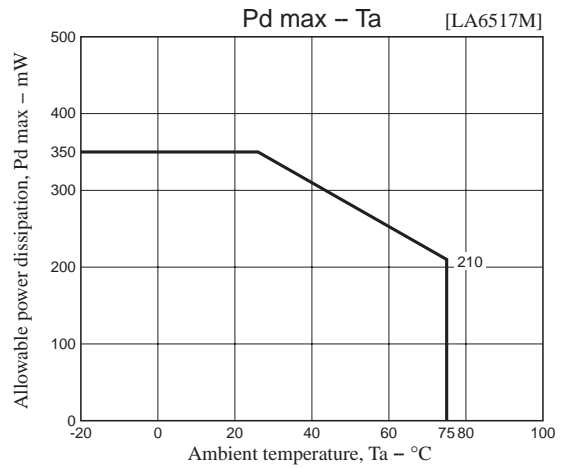
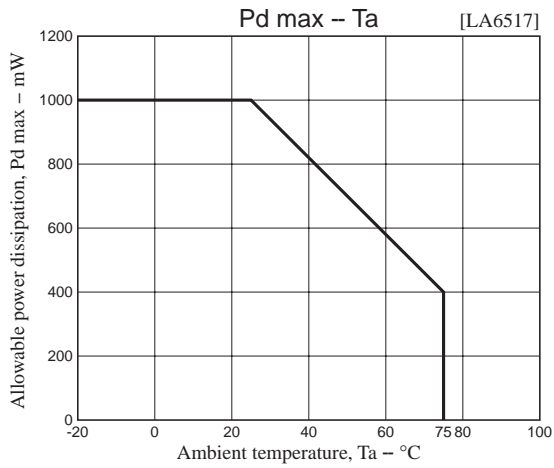
[LA6518M]



# LA6517, 6517M, 6518M

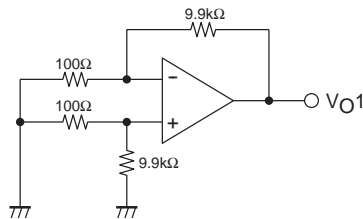
## Block Diagram and Pin Assignments





**Test Circuits**

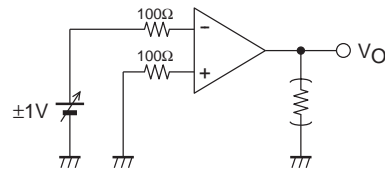
1.  $V_{IO}$ , SVRR



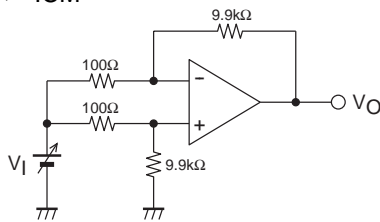
$$V_{IO} : V_{CC} / V_{EE} = \pm 15V \quad V_{IO} = V_{O1} / 100$$

$$SVRR \begin{cases} V_{CC} = 15V, 5V \\ V_{EE} = -5V, -15V \end{cases} \quad SVR (+) = \left| \frac{\Delta V_{O1}}{100 \times 10V} \right|$$

2.  $V_O$



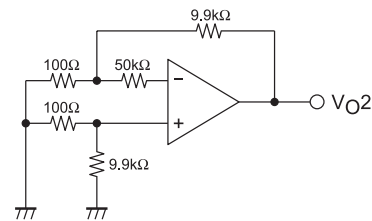
3. CMRR,  $V_{ICM}$



$$CMRR : V_I = \pm 7.5V$$

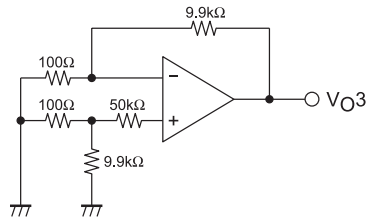
$$CMR = 20 \log \frac{15 \times 100}{|\Delta V_O|}$$

4.  $I_B (-)$



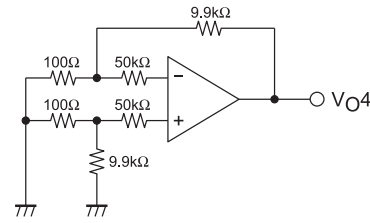
$$I_B (-) = \frac{|V_{O2} - V_{O1}|}{50k\Omega \times 100}$$

5.  $I_B (+)$



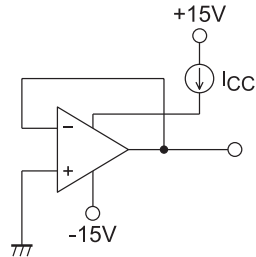
$$I_B (+) = \frac{|V_{O3} - V_{O1}|}{50k\Omega \times 100}$$

6.  $I_{IO}$

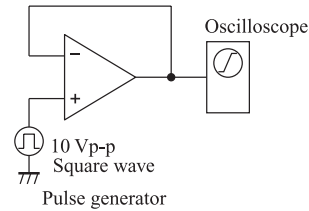


$$I_{IO} = \frac{|V_{O4} - V_{O1}|}{50k\Omega \times 100}$$

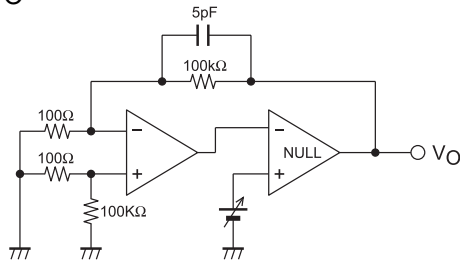
7.  $I_{CC}$



8. SR



9.  $V_{GO}$



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

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