Ordering number: EN 5162A

Monolithic Linear IC

No. 5162A

LA6517, 6517M, 6518M

2-Output Power Operational Amplifier

Applications

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

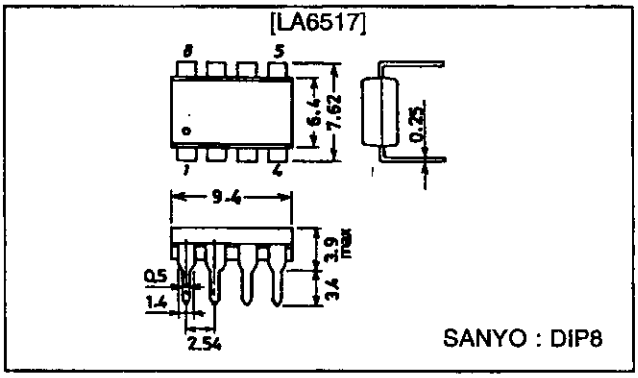
Features and Functions

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

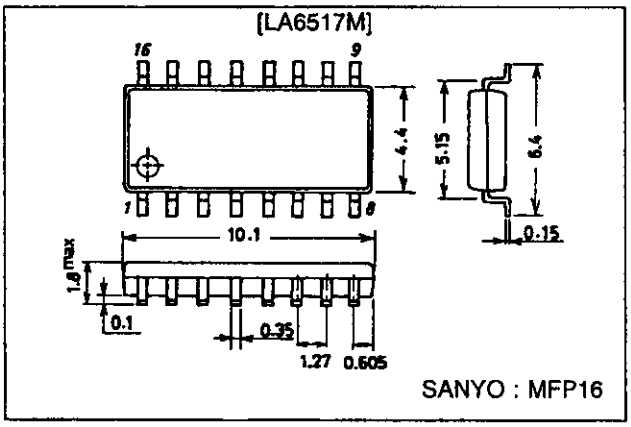
Package Dimensions

unit : mm

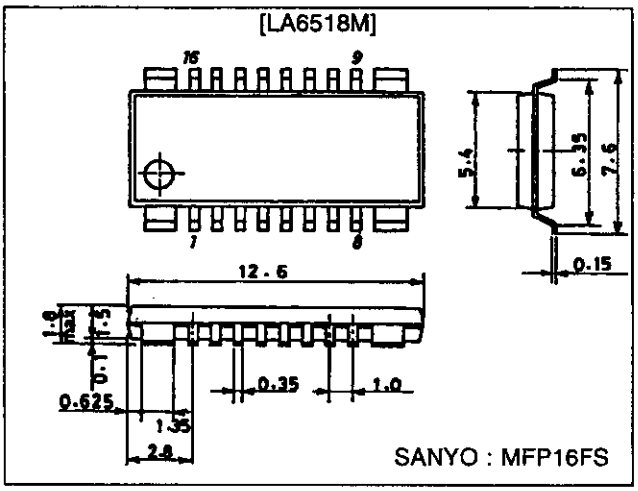
3001-DIP8



3035A-MFP16



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	Pd max	LA6517	1000	mW
		LA6517M	350	mW
		LA6518M	700	mW
Operating temperature	Topr		–20 to +75	°C
Storage temperature	Tstg		–55 to +150	°C

Operating Conditions at Ta = 25 °C

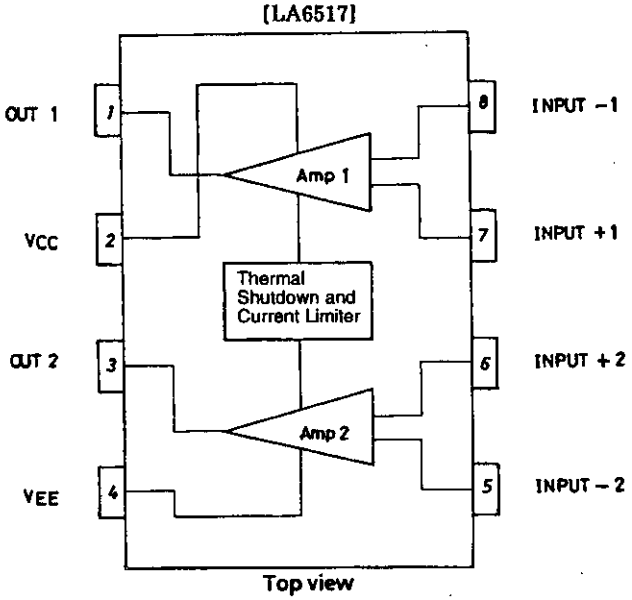
Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}/V_{EE}		±2 to ±16	V

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

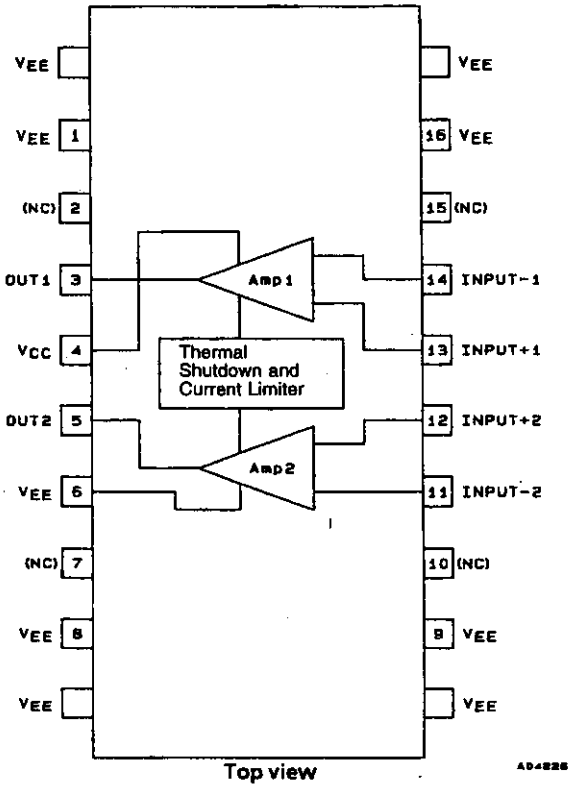
Parameter	Symbol	Conditions	min	typ	max	Unit
No-load current drain	I_{CC}			8	20	mA
Input offset voltage	V_{IO}	$R_S \leqq 10$ kΩ		2	7	mV
Input offset current	I_{IO}			10	100	nA
Input bias current	I_B			100	300	nA
Common-mode input voltage range	V_{ICM}	LA6517, 6517M	–15		+13	V
		LA6518M	–14		+13	V
Common-mode signal rejection ratio	CMRR		65	80		dB
Maximum output voltage	V_O	R_L = 33 Ω	±11	±12		V
Voltage gain	VG_O			85		dB
Slew rate	SR	G_V = 0, R_L = 33 Ω, R = 10 Ω, L = 0.1 μF		0.15		V/μs
Supply voltage rejection ratio	SVR			30	300	μV/V
Limiting current (built in)	I_{SC}			0.5		A

Block Diagram and Pin Assignments

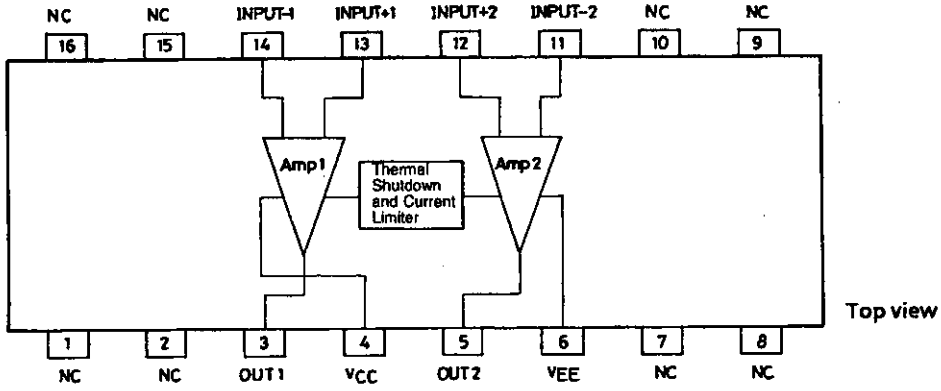
[LA6517]

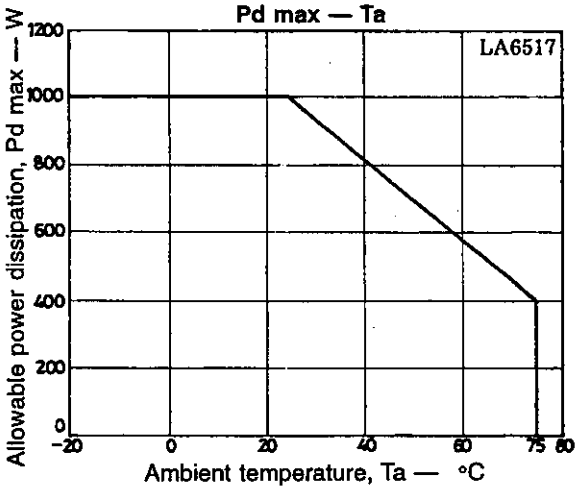


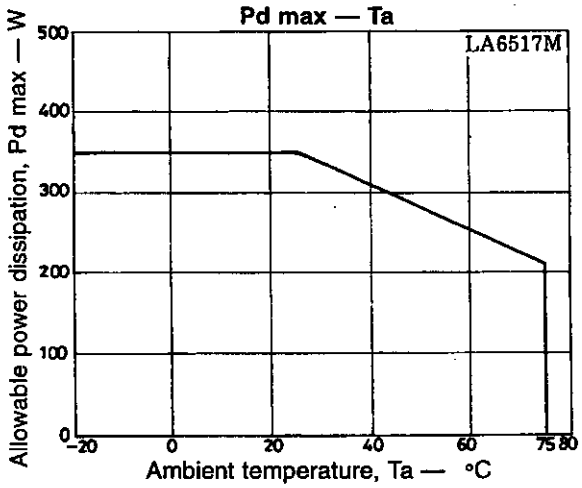
[LA6518M]

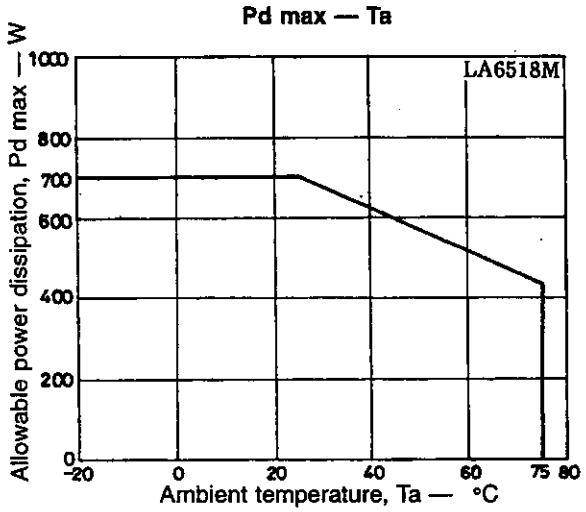


[LA6517M]



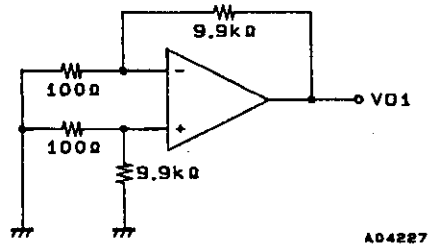






Test Circuits

1. V_{IO}, SVRR



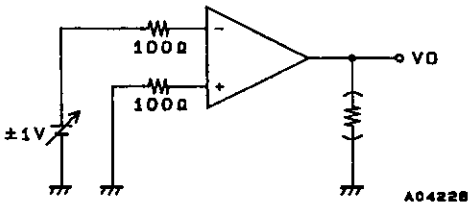
V_{IO}: $V_{CC}/V_{EE}=\pm 15V$

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

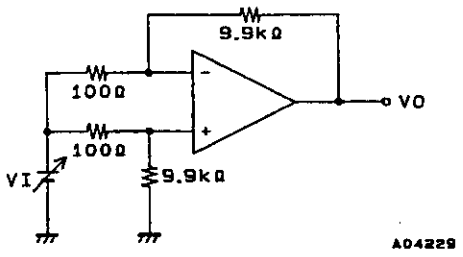
$V_{IO}=V_O1/100$

$$\text{SVR}(+)\\ \text{SVR}(-)=\left|\frac{\Delta V_O1}{100\times 10V}\right|$$

2. V_O



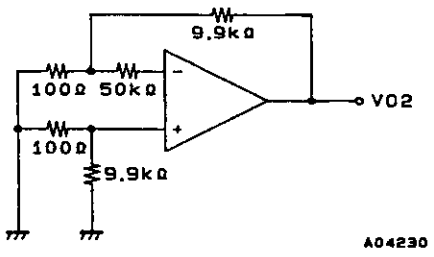
3. CMRR, V_{ICM}



CMRR: $V_I=\pm 7.5V$

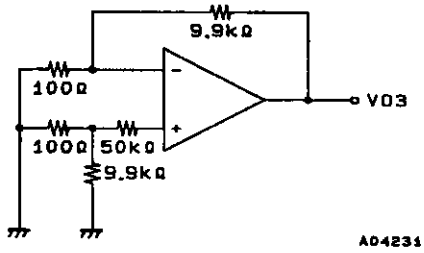
$$\text{CMR}=20\log\frac{15\times 100}{|\Delta V_O|}$$

4. $I_B(-)$



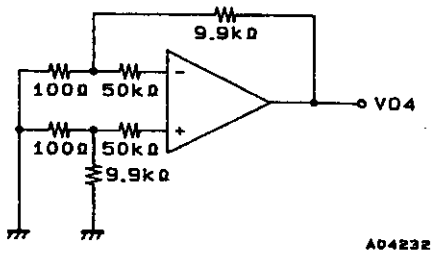
$$I_B(-)=\frac{|V_O2-V_O1|}{50k\Omega\times 100}$$

5. $I_B(+)$



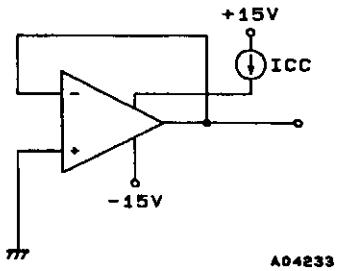
$$I_B(+) = \frac{|V_O3 - V_O1|}{50k\Omega \times 100}$$

6. I_{IO}

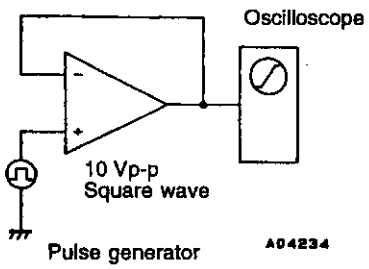


$$I_{IO} = \frac{|V_O4 - V_O1|}{50k\Omega \times 100}$$

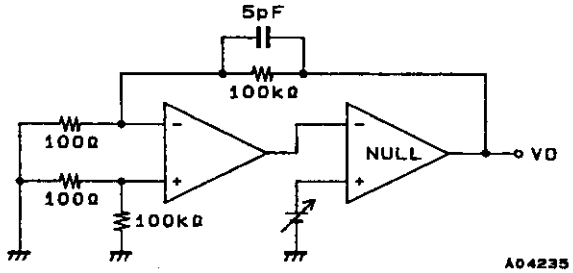
7. I_{CC}



8. SR



9. VG_O



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