

<b>SANYO</b>	No. 911D	<b>LA6458M, 6458S</b>
		<b>High-Performance Dual Operational Amplifiers</b>

### Overview

The LA6458 consists of two independent, internally phase compensated operational amplifiers. Application areas include active filters, audio preamplifiers, and various electronic circuits.

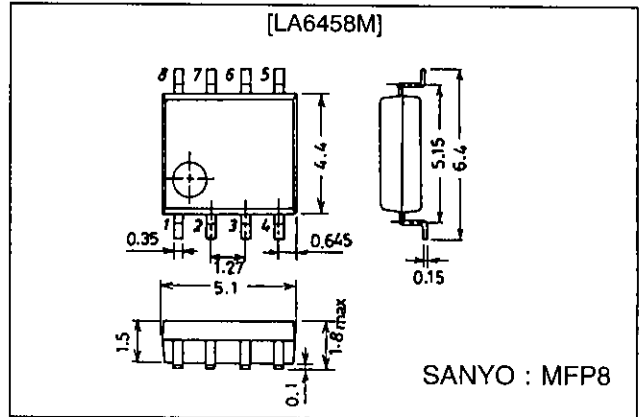
### Features

- LA6458M : 8-pin MFP package,  
LA6458S : 9-pin SIP package
- Phase compensation circuit built in.
- High gain, low noise.
- Slew rate : 1.1V/ $\mu$ s typ.

### Package Dimensions

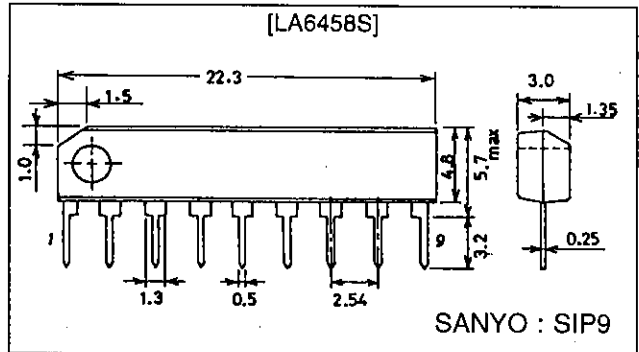
unit : mm

#### 3032B-MFP8



unit : mm

#### 3017C-SIP9



### Specifications

Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V <sub>CC</sub> /V <sub>EE</sub>		±18	V
Differential input voltage	V <sub>ID</sub>		±30	V
Common-mode input voltage	V <sub>IN</sub>		±15	V
Allowable power dissipation	Pd max	LA6458M	300	mW
		LA6458S	500	mW
Operating temperature	T <sub>opr</sub>		-20 to +75	°C
Storage temperature	T <sub>stg</sub>		-40 to +125	°C

# LA6458M, 6458S

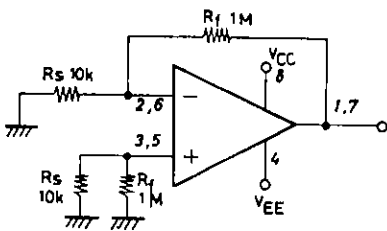
**Operating Characteristics at  $T_a = 25^\circ\text{C}$ ,  $V_{CC} = 15\text{ V}$ ,  $V_{EE} = -15\text{ V}$**

Parameter	Symbol	Conditions	min	typ	max	Unit
Input offset voltage	$V_{IO}$	$R_S = 10\text{ k}\Omega$		0.5	6	mV
Input offset current	$I_{IO}$			5	200	nA
Input bias current	$I_B$			60	500	nA
Common-mode input voltage	$V_{ICM}$		$\pm 12$	$\pm 14$		V
Common-mode rejection ratio	CMR		70	90		dB
Voltage gain	$V_{GO}$	$R_L \geq 2\text{ k}\Omega$ , $V_O = \pm 10\text{ V}$	86	100		dB
Maximum output voltage	$V_O(1)$	$R_L \geq 10\text{ k}\Omega$	$\pm 12$	$\pm 14$		V
	$V_O(2)$	$R_L \geq 2\text{ k}\Omega$	$\pm 10$	$\pm 13$		V
Slew rate	SR	LA6458M: $V_G = 0$ , $R_L \geq 2\text{ k}\Omega$		1.0		V/ $\mu\text{s}$
		LA6458S: $V_G = 0$ , $R_L \geq 2\text{ k}\Omega$		1.1		V/ $\mu\text{s}$
Equivalent input noise voltage	$V_{NI}$	LA6458M: $R_S = 1\text{ k}\Omega$ , B.P.F. = 10 Hz to 30 kHz		1.6		$\mu\text{V}$
		LA6458S: $R_S = 1\text{ k}\Omega$ , B.P.F. = 10 Hz to 30 kHz		1.7		$\mu\text{V}$
Current drain	$I_{CC}$			3.5	6	mA
Supply voltage rejection	SVR	$R_S \leq 10\text{ k}\Omega$		30	150	$\mu\text{V/V}$

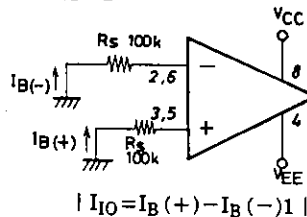
## Test Circuits

(Pin assignment : SIP/MFP package)

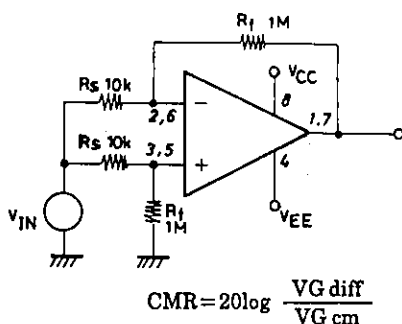
### 1. $V_{IO}$ , SVR



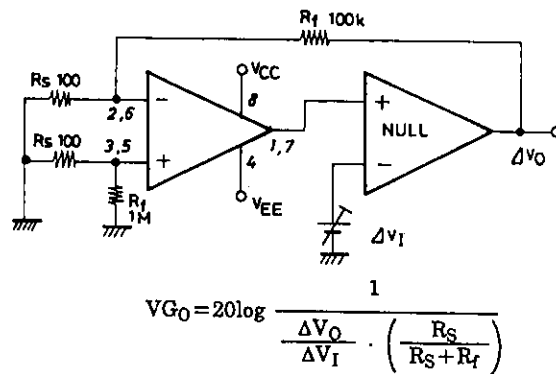
### 2. $I_{IO}$ , $I_B$



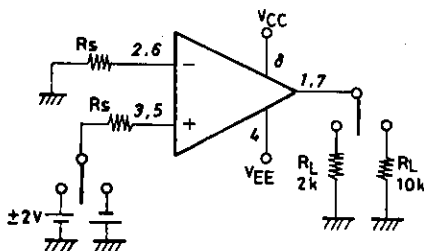
### 3. $V_{ICM}$ , CMR



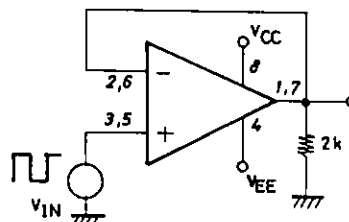
### 4. $V_{GO}$



### 5. $V_O$



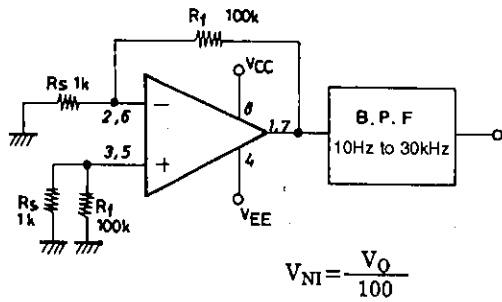
### 6. SR



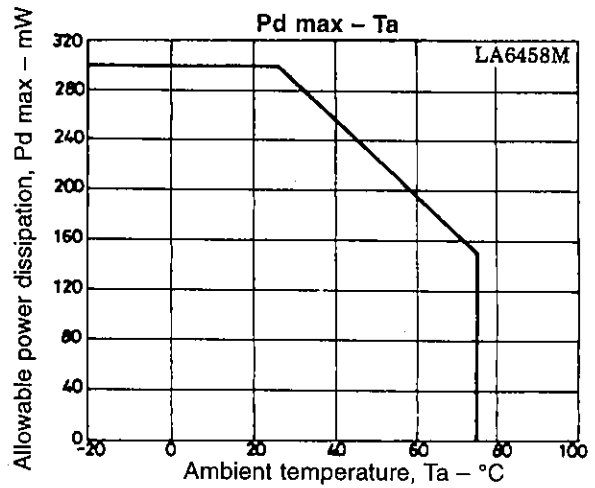
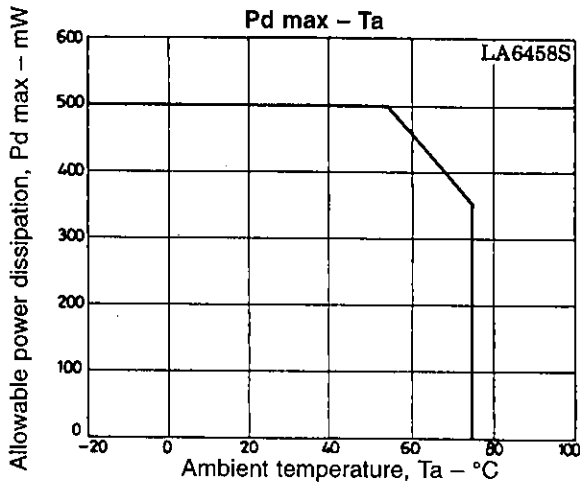
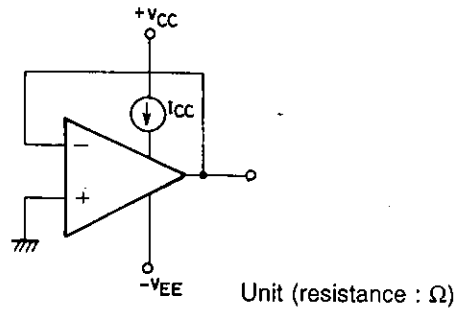
Unit (resistance:  $\Omega$ )

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7.  $V_{NI}$

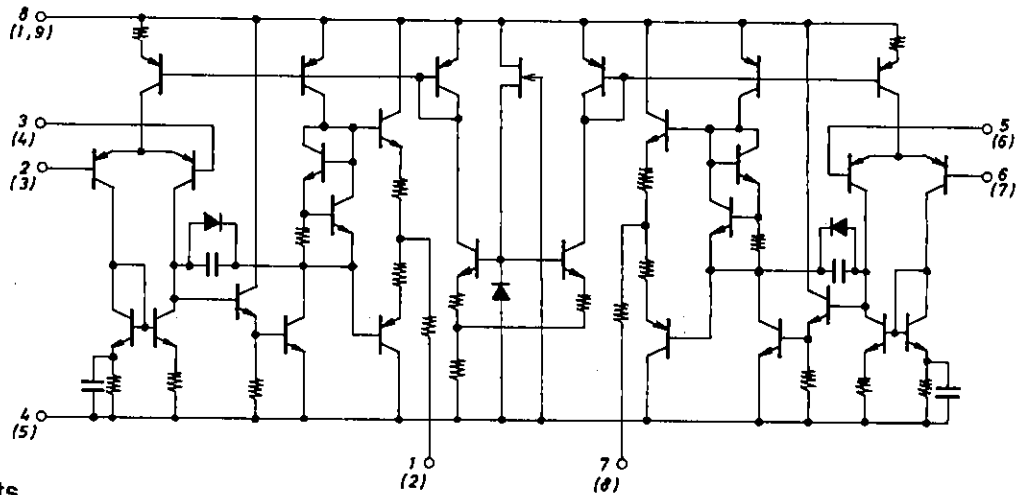


8.  $I_{CC}$

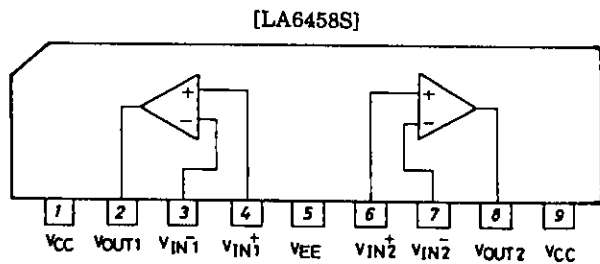
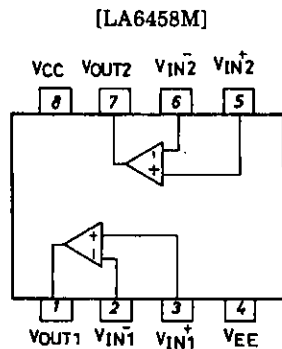


## Equivalent Circuit

Pin No. : LA6458M, ( ) of pin No. : LA6458S



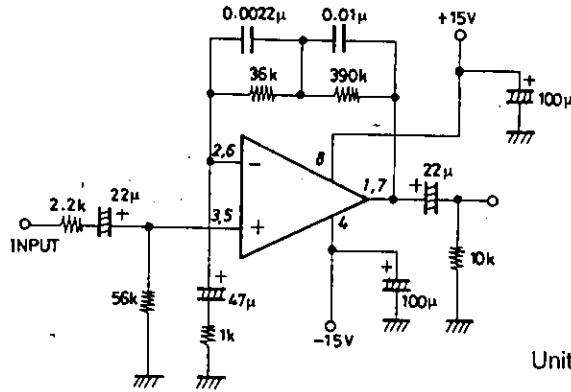
## Pin Assignments



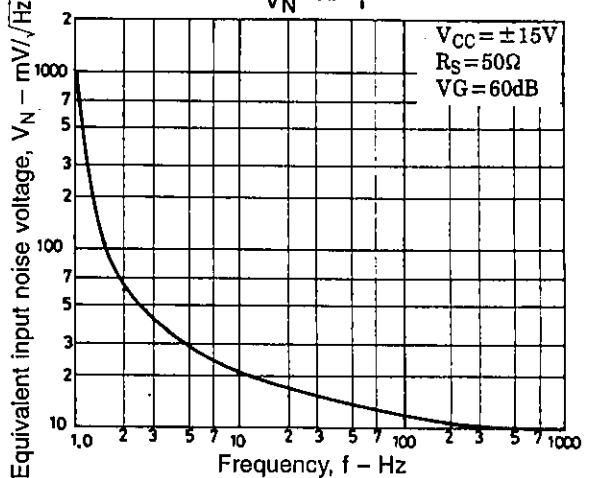
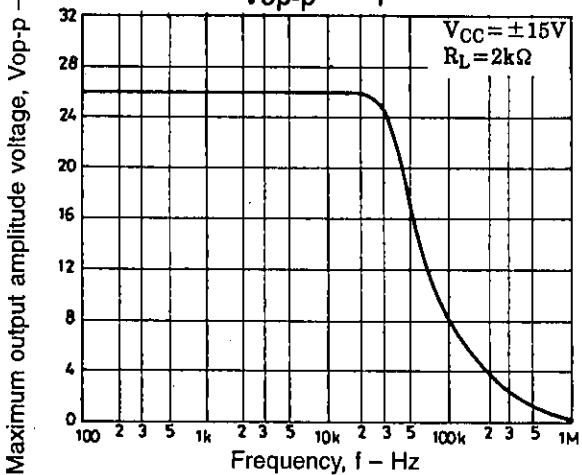
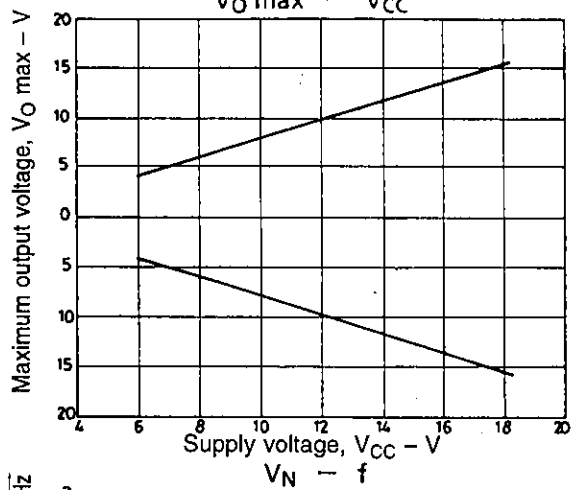
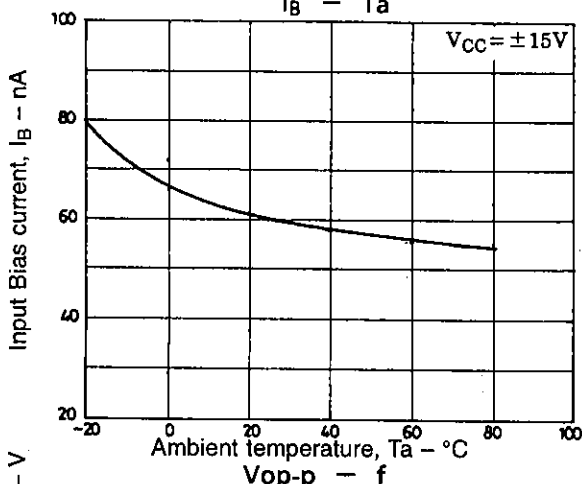
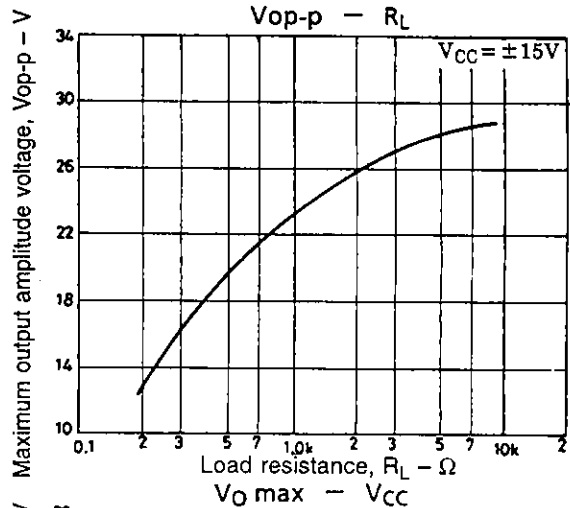
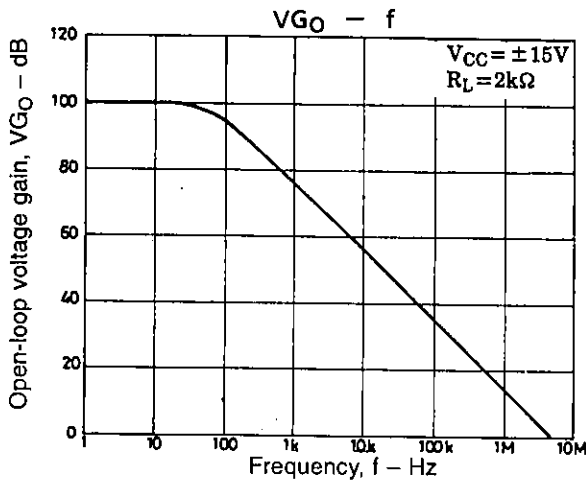
Top view

# LA6458M, 6458S

## Sample Application Circuit RIAA preamplifier (VG = 32.5 dB)



Unit (resistance:  $\Omega$ , capacitance: F)



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