

Ordering number: EN911D



Monolithic Linear IC

LA6458M, 6458S

**High-Performance
Dual Operational Amplifiers**

Overview

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

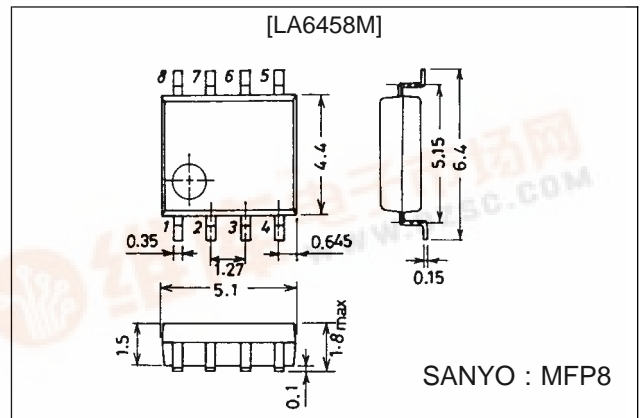
Features

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

Package Dimensions

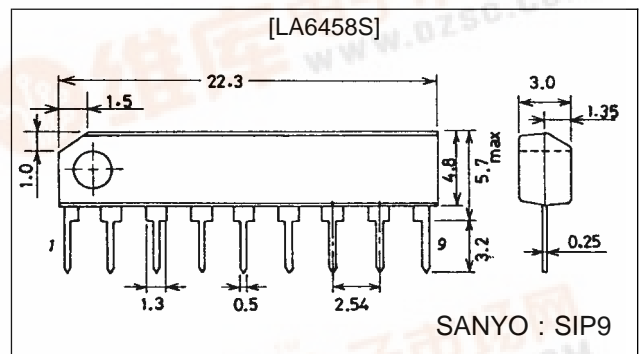
unit : mm

3032B-MFP8



unit : mm

3017C-SIP9



Specifications

Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{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	LA6458M	300	mW
		LA6458S	500	mW
Operating temperature	Topr		-20 to +75	°C
Storage temperature	Tstg		-40 to +125	°C



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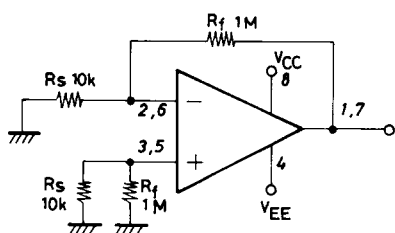
Operating Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC} = 15\text{ V}$, $V_{EE} = -15\text{ V}$

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}		± 12	± 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	$V_O(1)$	$R_L \geq 10\text{ k}\Omega$	± 12	± 14		V
	$V_O(2)$	$R_L \geq 2\text{ k}\Omega$	± 10	± 13		V
Slew rate	SR	LA6458M: $V_G = 0$, $R_L \geq 2\text{ k}\Omega$		1.0		V/ μs
		LA6458S: $V_G = 0$, $R_L \geq 2\text{ k}\Omega$		1.1		V/ μs
Equivalent input noise voltage	V_{NI}	LA6458M: $R_S = 1\text{ k}\Omega$, B.P.F. = 10 Hz to 30 kHz		1.6		μV
		LA6458S: $R_S = 1\text{ k}\Omega$, B.P.F. = 10 Hz to 30 kHz		1.7		μV
Current drain	I_{CC}			3.5	6	mA
Supply voltage rejection	SVR	$R_S \leq 10\text{ k}\Omega$		30	150	$\mu\text{V/V}$

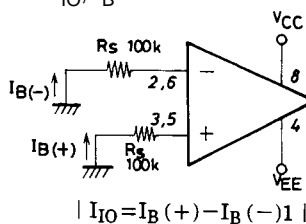
Test Circuits

(Pin assignment : SIP/MFP package)

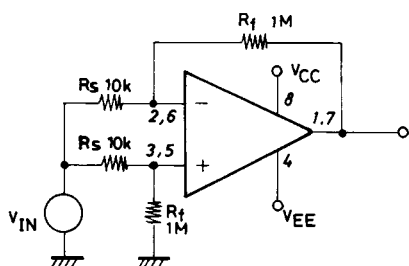
1. V_{IO} , SVR



2. I_{IO} , I_B

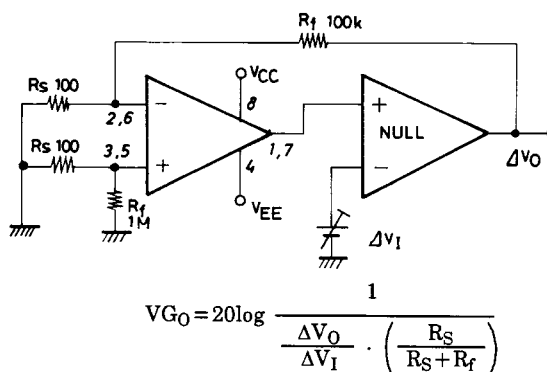


3. V_{ICM} , CMR



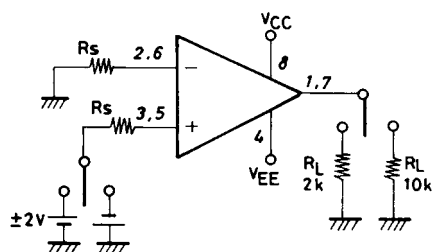
$$CMR = 20 \log \frac{V_{G \text{ diff}}}{V_{G \text{ cm}}}$$

4. V_{GO}

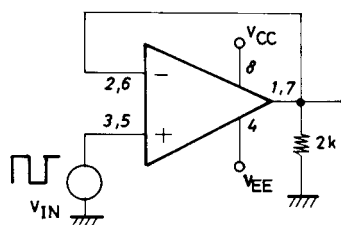


$$V_{GO} = 20 \log \frac{\Delta V_O}{\Delta V_I} \cdot \left(\frac{R_S}{R_S + R_f} \right)$$

5. V_O



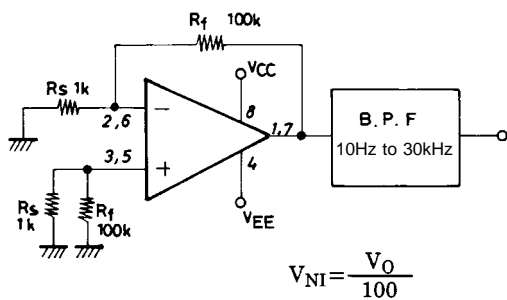
6. SR



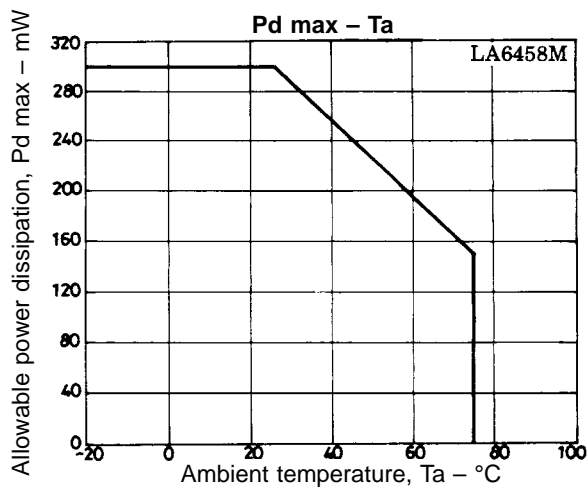
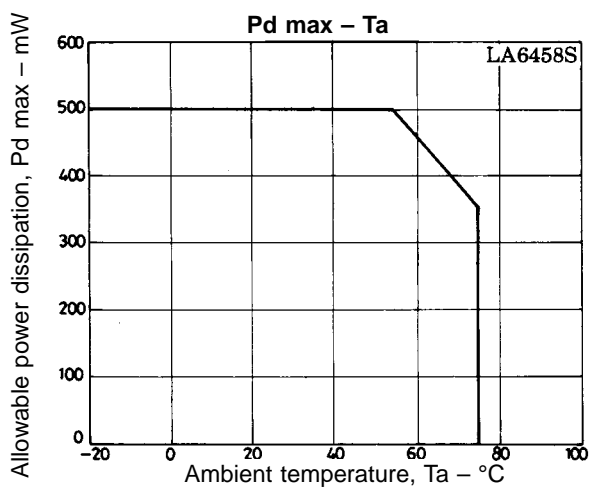
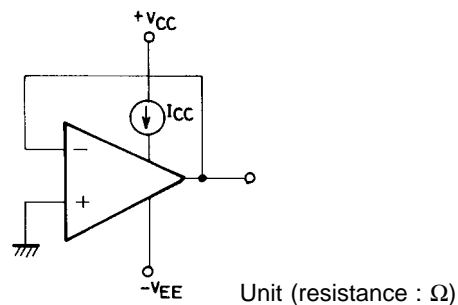
Unit (resistance: Ω)

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7. V_{NI}

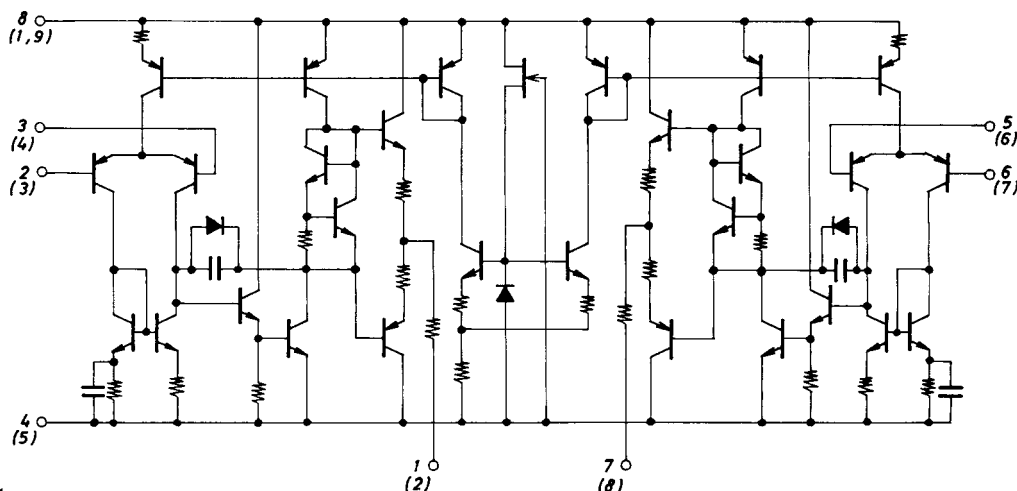


8. I_{CC}

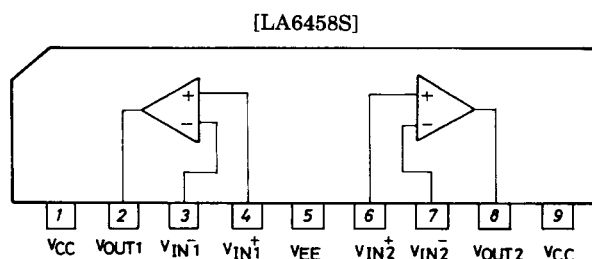
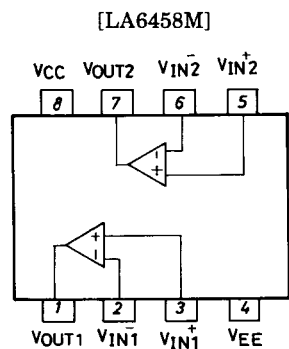


Equivalent Circuit

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



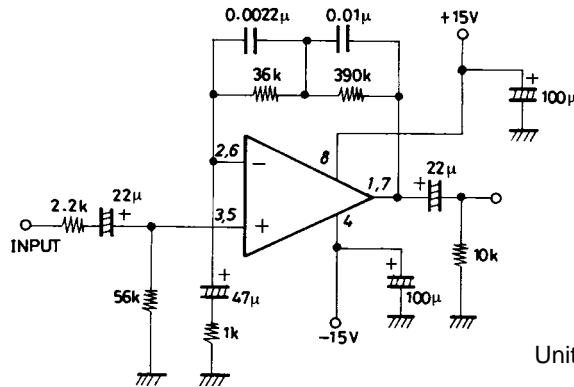
Pin Assignments



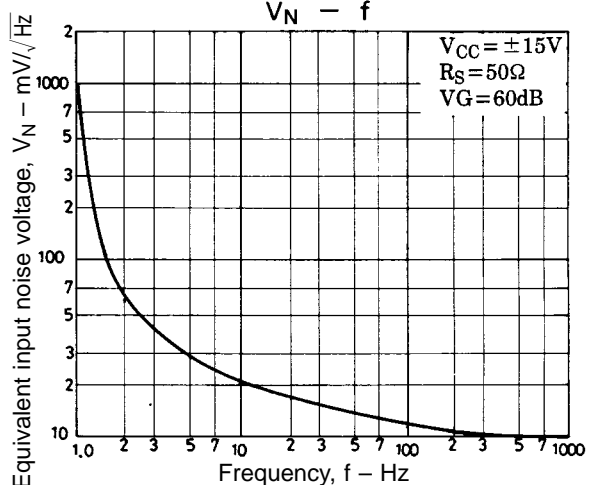
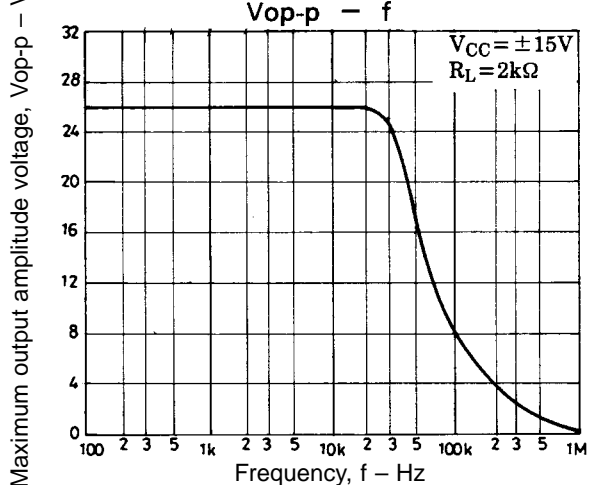
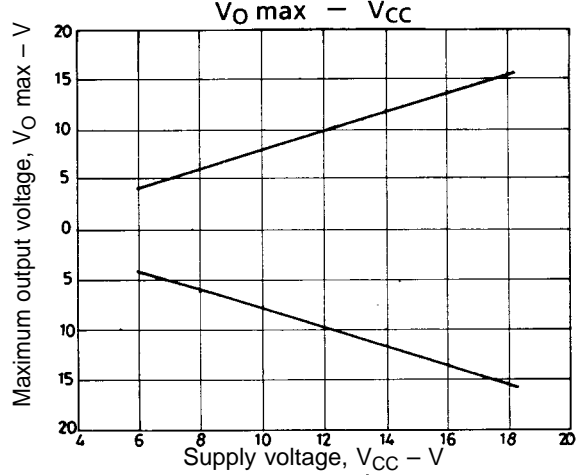
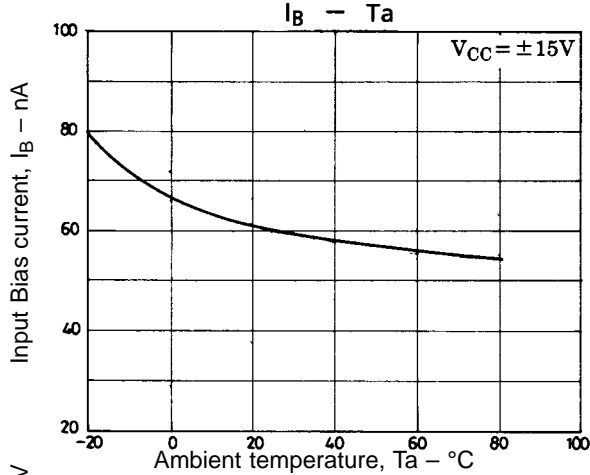
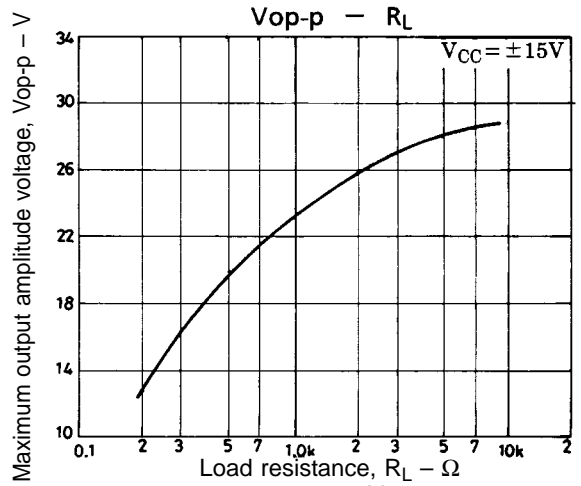
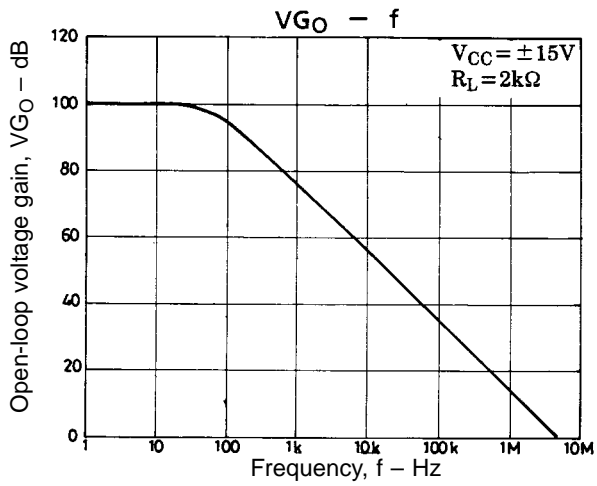
Top view

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Sample Application Circuit RIAA preamplifier ($V_G = 32.5 \text{ dB}$)



Unit (resistance: Ω , capacitance: F)



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