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 : l.1V/μs typ.

Specifications

Maximum Ratings at Ta = 25°C

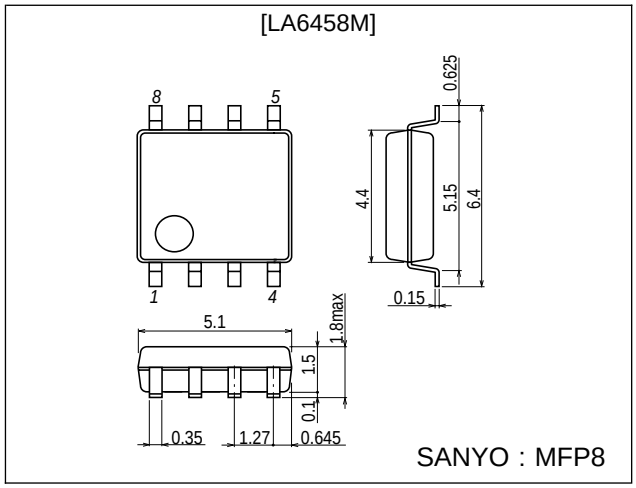
Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC}/V_{EE}		±18	V
Differential input voltage	V_{ID}		±30	V
Common-mode input voltage	V_{IN}		±15	V
Allowable power dissipation	Pd max	LA6458M	300	mW
		LA6458S	500	mW
Operating temperature	Topr		–20 to +75	°C
Storage temperature	Tstg		–40 to +125	°C

Package Dimensions

unit : mm

3032B-MFP8

[LA6458M]

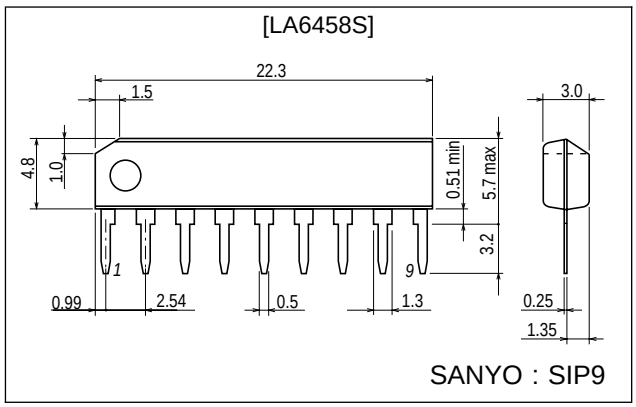


SANYO : MFP8

unit : mm

3017C-SIP9

[LA6458S]



SANYO : SIP9

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63096HA(II)/1100YT/8237KI/8064KI/O064KI,TS No.911-1/5

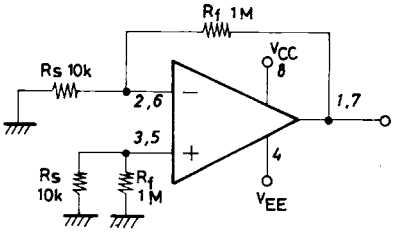
Operating Characteristics at Ta = 25°C, V_{CC} = 15 V, V_{EE} = –15 V

Parameter	Symbol	Conditions	min	typ	max	Unit
Input offset voltage	V_{IO}	R_S = 10 kΩ		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	VG_O	R_L ≧ 2 kΩ, V_O = ±10 V	86	100		dB
Maximum output voltage	V_O (1)	R_L ≧ 10 kΩ	±12	±14		V
	V_O (2)	R_L ≧ 2 kΩ	±10	±13		V
Slew rate	SR	LA6458M: VG = 0, R_L ≧ 2 kΩ		1.0		V/μs
		LA6458S: VG = 0, R_L ≧ 2 kΩ		1.1		V/μs
Equivalent input noise voltage	V_{NI}	LA6458M: R_S = 1 kΩ , B.P.F. = 10 Hz to 30 kHz		1.6		μV
		LA6458S: R_S = 1 kΩ , 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 ≦ 10 kΩ		30	150	μV/V

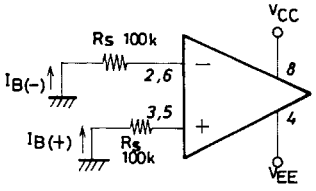
Test Circuits

(Pin assignment : SIP/MFP package)

1. V_{IO}, SVR

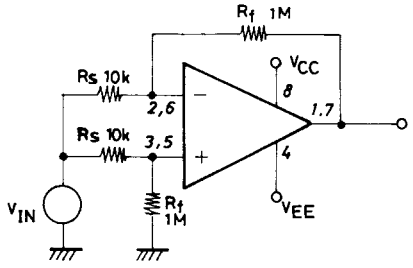


2. I_{IO}, I_B



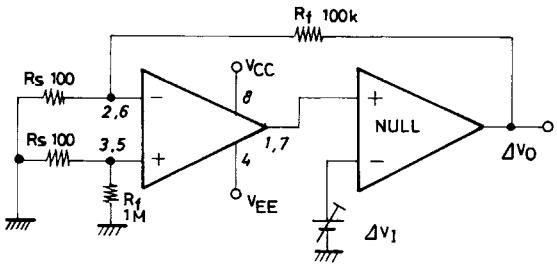
$$| I_{IO} = I_B(+) - I_B(-) |$$

3. V_{ICM}, CMR



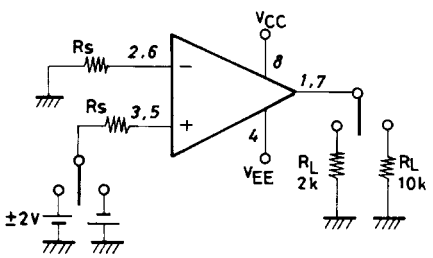
$$CMR = 20\log \frac{VG\,diff}{VG\,cm}$$

4. VG_O

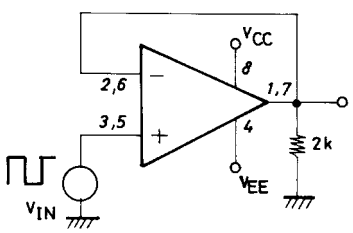


$$VG_O = 20\log \frac{1}{\frac{\Delta V_O}{\Delta V_I} \cdot \left(\frac{R_S}{R_S + R_f}\right)}$$

5. V_O

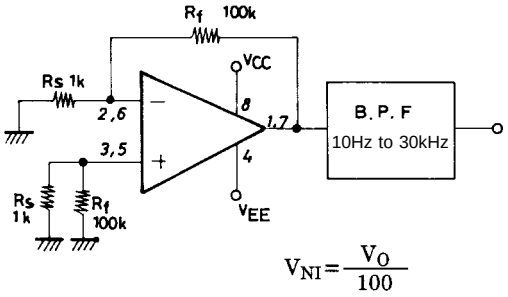


6. SR



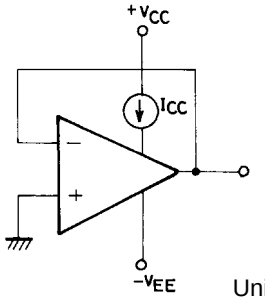
Unit (resistance: Ω)

7. V_{NI}

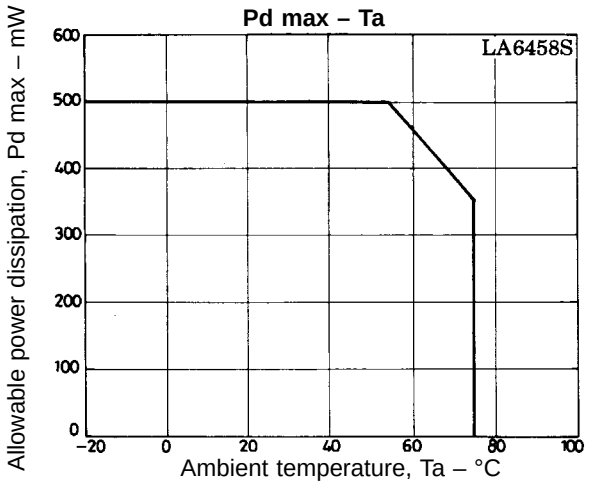


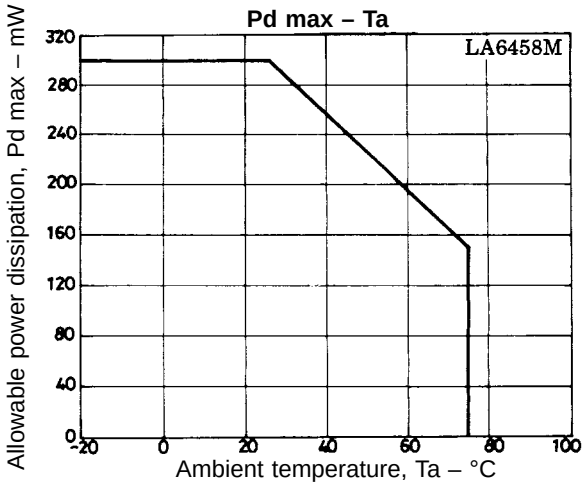
$$V_{NI} = \frac{V_O}{100}$$

8. I_{CO}



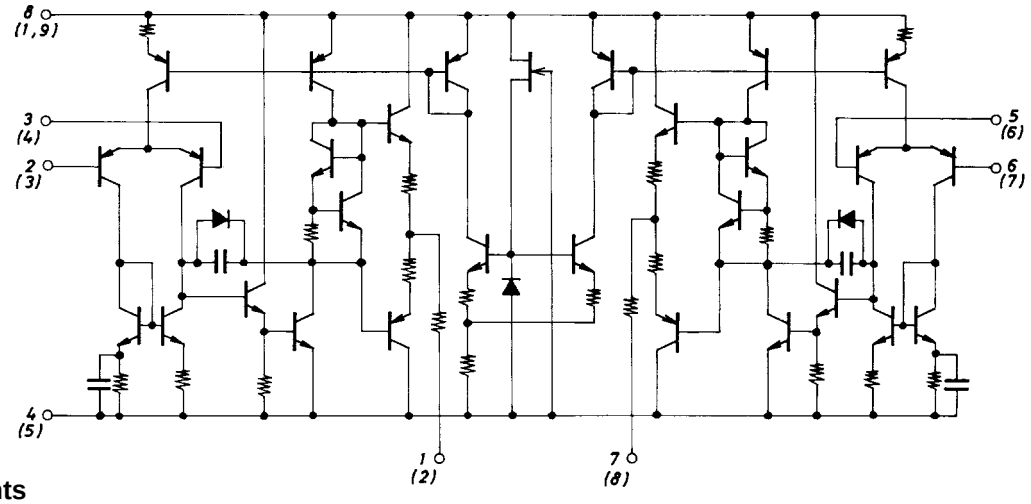
Unit (resistance : Ω)





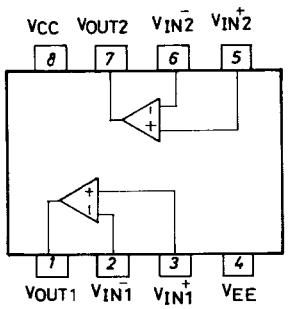
Equivalent Circuit

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

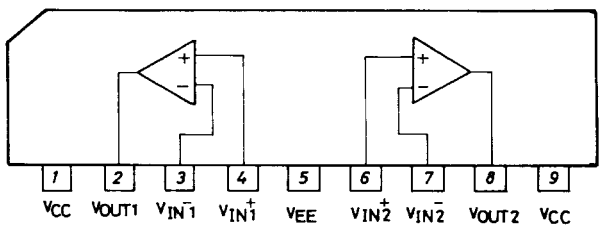


Pin Assignments

[LA6458M]

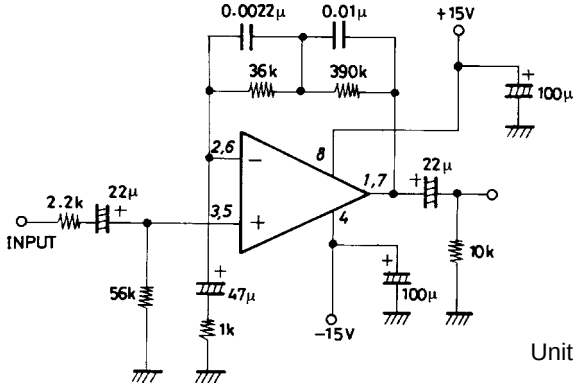


[LA6458S]



Top view

Sample Application Circuit RIAA preamplifier (VG = 32.5 dB)



Unit (resistance: Ω, capacitance: F)