μPC458 / 4741

High Performance Quad Operational Amplifiers

GENERAL DESCRIPTION

The μPC458/4741 are quad operational amplifiers which consist of four independent internally frequency compensated operational amplifiers.

These amplifiers feature AC and DC performance which exceed that of the 741 type amplifiers.

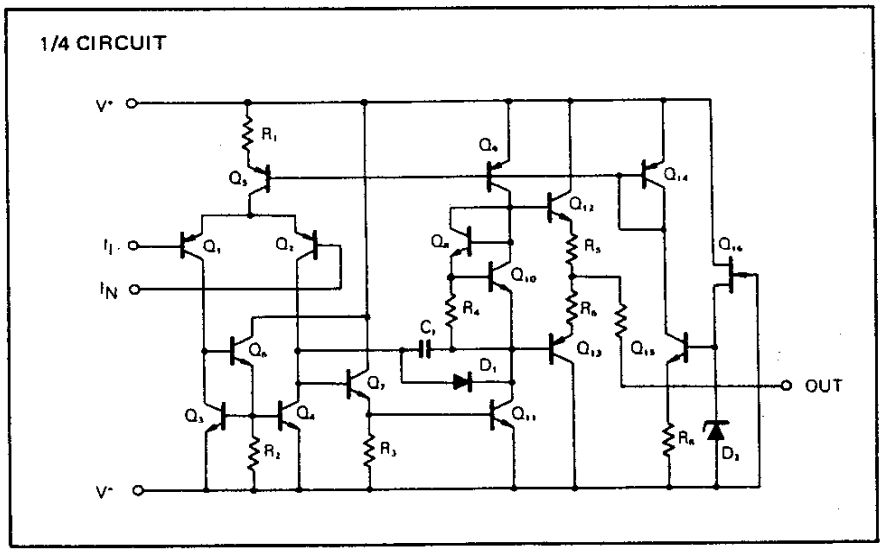
Its superior bandwidth, slewrate and noise characteristics make it an excellent choise for active filter or audio amplifier applications.

Two kinds of ICs are available according to reliability, the μPC458 for industry, the μPC4741 for commercial.

FEATURES

- Internal Frequency Compensation
- Output Short Circuit Protection
- Large Common Mode and Differential Input Voltage Rang
- No Latch Up
- No Crossover Distortion
- Wide Power Supply Range ±2 V to ±20V
- HA4741 Direct Replacement

EQUIVALENT CIRCUIT

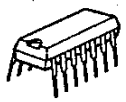


ORDERING INFORMATION

μPC458D

14 pin Ceramic DIP
(Dual In-Line Package)

μPC458C/μPC4741C

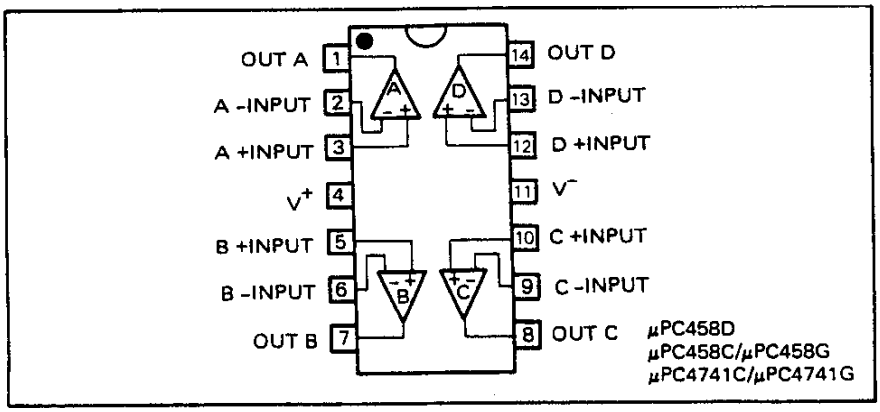


14 pin Plastic Molded DIP
(Dual In-Line Package)

μ PC458G/μPC4741G

14 pin Plastic Molded Flat Package
(MINI FLAT IC)

CONNECTION DIAGRAM (Top View)



μPC458D
μPC458C/μPC458G
μPC4741C/μPC4741G

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

PARAMETER		μPC458	μPC4741	UNIT
Voltage between V^+ and V^-		40	40	V
Power Dissipation*	D Package	900	–	mW
	C Package	570	570	
	G Package	550	550	
Differential Input Voltage		±30	±30	V
Input Voltage (Note 1)		±15	±15	V
Output Short Circuit Duration (Note 2)		Indefinite	Indefinite	s
Operating Temperature Range	D Package	−20 to +80	–	°C
	C or G Package	−20 to +70	0 to 70	
Storage Temperature Range	D Package	−55 to +150	–	°C
	C or G Package	−55 to +125	−55 to +125	

Note 1 For supply voltages less than ±15 V, the absolute maximum input voltage is equal to the supply voltage.

Note 2 Short circuit to ground on one amplifier only.

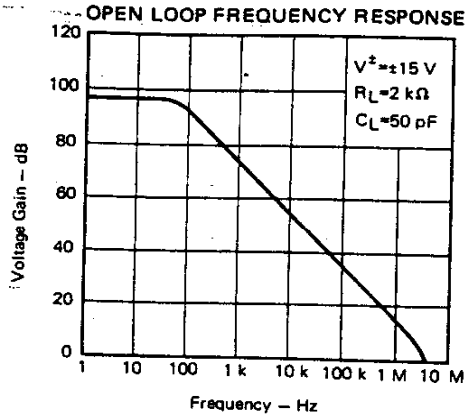
* See thermal information in chapter 11.

ELECTRICAL CHARACTERISTICS (Ta = 25°C, $V^{\pm}$ = ±15 V)

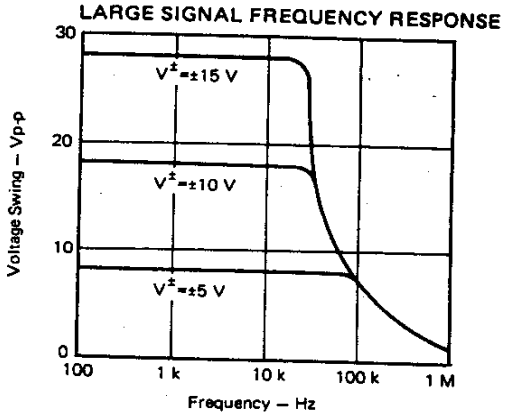
CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Input Offset Voltage		1.0	5.0	mV	$R_S \leq 100\ \Omega$
Input Offset Current		30	50	nA	
Input Bias Current		100	300	nA	
Large Singal Voltage Gain	25,000	50,000			$R_L \geq 2\ k\Omega$, Vo = ±10 V
Power Consumption		150	210	mW	
Common Mode Rejection Ratio	80	90		dB	
Supply Voltage Rejection Ratio		50	100	μV/V	
Output Voltage Swing	±12	±13.7		V	$R_L \geq 10\ k\Omega$
Output Voltage Swing	±10	±12.5		V	$R_L \geq 2\ k\Omega$
Common Mode Input Voltage	±12	±14		V	
Slew Rate		1.6		V/μs	Av = 1
Input Noise Voltage		9		$nV/\sqrt{Hz}$	f = 1 kHz
Channel Separation		108		dB	f = 10 kHz

TYPICAL PERFORMANCE CHARACTERISTICS (Ta=25 °C)

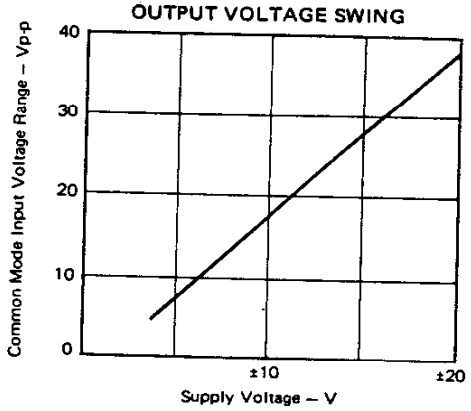
OPEN LOOP FREQUENCY RESPONSE



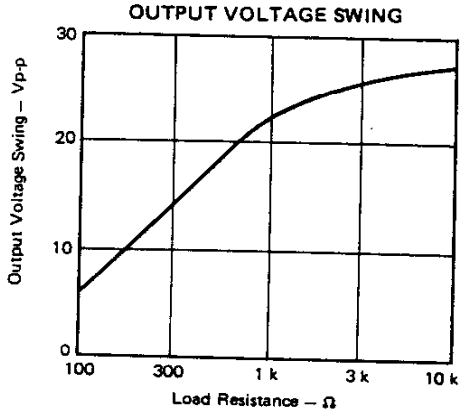
LARGE SIGNAL FREQUENCY RESPONSE



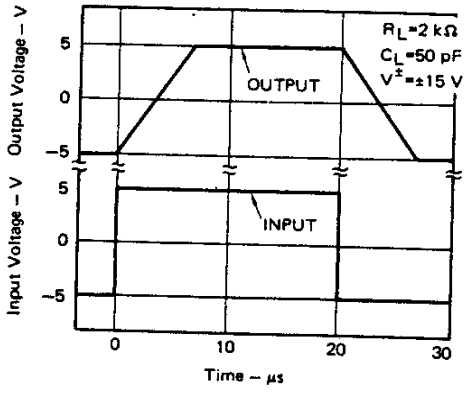
OUTPUT VOLTAGE SWING



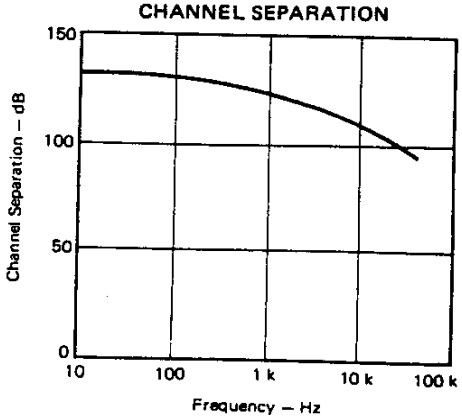
OUTPUT VOLTAGE SWING



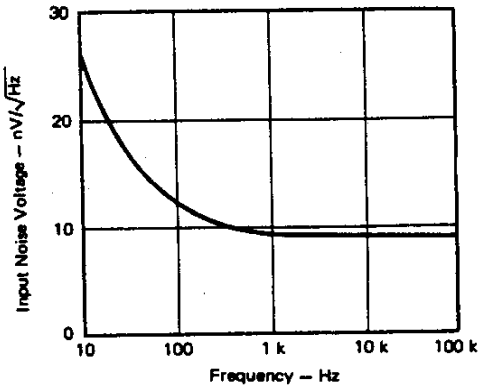
PULSE RESPONSE



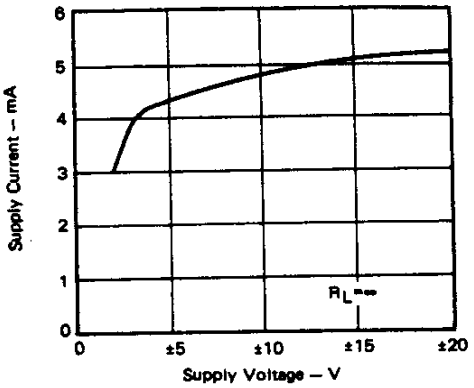
CHANNEL SEPARATION



INPUT NOISE VOLTAGE DENSITY



SUPPLY CURRENT



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