

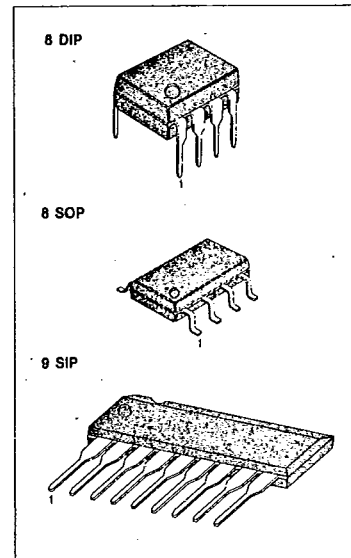
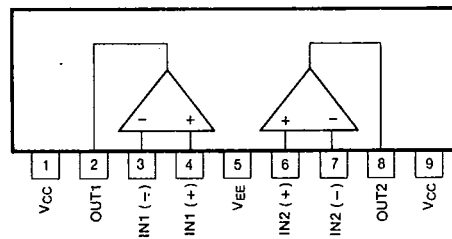
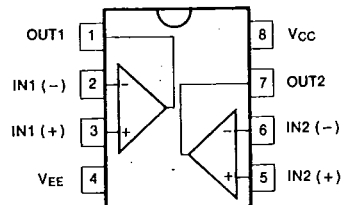
T-79-05-20

MC1458/MC1458C/MC1458I**LINEAR INTERGRATED CIRCUIT****DUAL OPERATIONAL AMPLIFIERS**

The MC1458 series is a dual general purpose operational amplifier. The MC1458 series is a short circuit protected and require no external components for frequency compensation. High common mode voltage range and absence of "latch up" make the MC1458 ideal for use as voltage followers. The high gain and wide range of operating voltage provides superior performance in intergrator, summing amplifier and general feedback applications.

FEATURES

- Internal frequency compensation
- Short circuit protection
- Large common mode and differential voltage range
- No latch up
- Low power consumption

**BLOCK DIAGRAM****ORDERING INFORMATION**

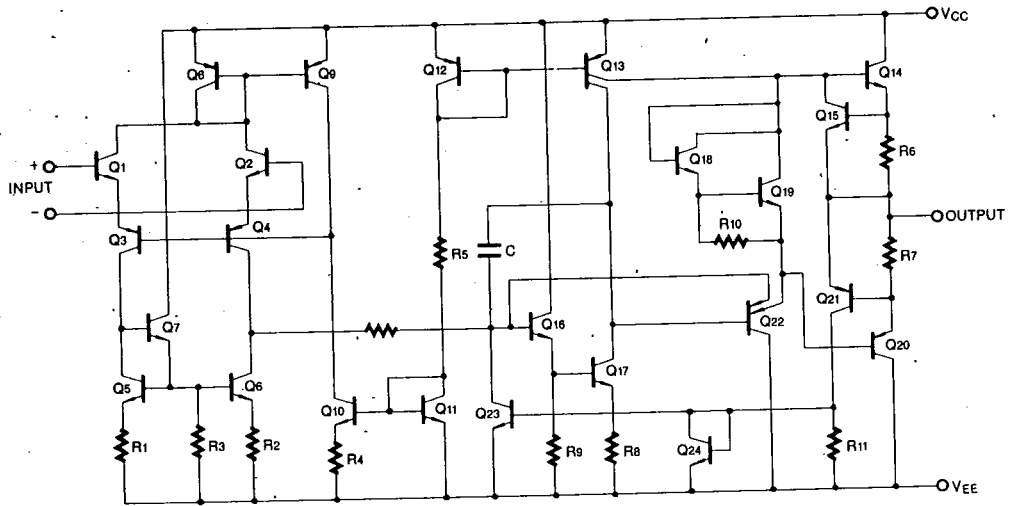
Device	Package	Operating Temperature
MC1458CN MC1458N	8 DIP	0 ~ +70°C
MC1458S	9 SIP	
MC1458D MC1458CD	8 SOP	0 ~ +70°C
MC1458IN MC1458ID	8 DIP 8 SOP	-25 ~ +85°C

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MC1458/MC1458C/MC1458I

LINEAR INTERGRATED CIRCUIT

SCHEMATIC DIAGRAM



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ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Value	Unit
Power Supply Voltage	V_S	± 18	V
Input Differential Voltage	V_{ID}	± 30	V
Input Voltage	V_I	± 15	V
Operating Temperature Range MC1458I	T_{opr}	$-25 \sim +85$	$^{\circ}C$
MC1458/C		$0 \sim +70$	$^{\circ}C$
Storage Temperature Range	T_{stg}	$-65 \sim +150$	$^{\circ}C$

MC1458/MC1458C/MC1458I

LINEAR INTERGRATED CIRCUIT

ELECTRICAL CHARACTERISTICS

(V_S = ±15V, T_a = 25°C, unless otherwise specified)

Characteristic	Symbol	Test Conditions	MC1458/MC1458I			MC1458C			Unit
			Min	Typ	Max	Min	Typ	Max	
Input Offset Voltage	V _{IO}	R _S ≤ 10KΩ		2.0	6.0		2.0	10	mV
Input Offset Current	I _{IO}			20	200		20	300	nA
Input Bias Current	I _{IB}			80	500		80	700	nA
Large Signal Voltage Gain	A _V	V _o = ±10V, R _L ≥ 2.0KΩ	20	100		20	100		V/mV
Input Voltage Range	V _{ICR}		±12	±13		±11	±13		V
Input Resistance	R _I		0.3	1.0			1.0		MΩ
Common Mode Rejection Ratio	CMRR	R _S ≤ 10KΩ	70	90		60	90		dB
Power Supply Rejection Ratio	PSRR	R _S ≤ 10KΩ	77	90		77	90		dB
Supply Current (Both Amplifier)	I _S			2.3	5.6		2.3	8.0	mA
Output Voltage Swing	V _{OUT}	R _L = 10KΩ	±12	±14		±11	±14		V
		R _L = 2KΩ	±10	±13		±9	±13		
Output Short Circuit Current	I _{OS}			20			20		mA
Power Consumption	P _C	V _o = 0V		70	170		70	240	mA
Transient Response (Unity Gain)									
Rise Time	t _r	V _i = 20mV, R _L ≥ 2KΩ, C _L ≤ 100pF		0.3			0.3		μs
Overshoot	OS	V _i = 20mV, R _L ≥ 2KΩ, C _L ≤ 100pF		15			15		%
Slew Rate	SR	V _i = 10V, R _L ≥ 2KΩ, C _L ≤ 100pF		0.8			0.8		V/μs

ELECTRICAL CHARACTERISTICS

(T_{amin} ≤ T_a ≤ T_{amax}, V_S = ±15V, unless otherwise specified)

Characteristic	Symbol	Test Conditions	MC1458/MC1458I			MC1458C			Unit
			Min	Typ	Max	Min	Typ	Max	
Input Offset Voltage	V _{IO}	R _S ≤ 10KΩ			7.5			12	mV
Input Offset Current	I _{IO}				300			400	nA
Input Bias Current	I _{IB}				800			1000	nA
Large Signal Voltage Gain	A _V	V _o = ±10V, R _L ≥ 2.0K	15			15			V/mV
Common Mode Rejection Ratio	CMRR	R _S ≤ 10K	70	90		70	90		dB
Power Supply Rejection Ratio	PSRR	R _S ≤ 10K	77	90		77	90		dB
Output Voltage Swing	V _{OUT}	R _L = 10K	±12	±14		±11	±14		V
		R _L = 2K	±10	±13		±9	±13		
Input Voltage Range	V _{ICR}		±12			±12			V

* T_{amin} ≤ T_a ≤ T_{amax}MC1458I: T_{amin} = -25°C, T_{amax} = +85°CMC1458C: T_{amin} = 0°C, T_{amax} = 70°C

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MC1458/MC1458C/MC1458I

LINEAR INTEGRATED CIRCUIT

TYPICAL PERFORMANCE CHARACTERISTICS

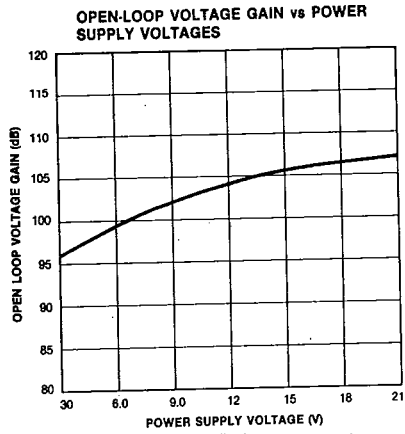


Fig. 1

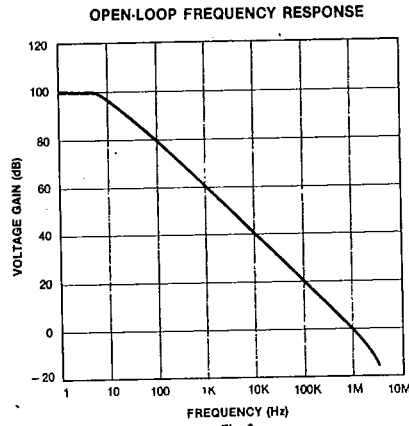


Fig. 2

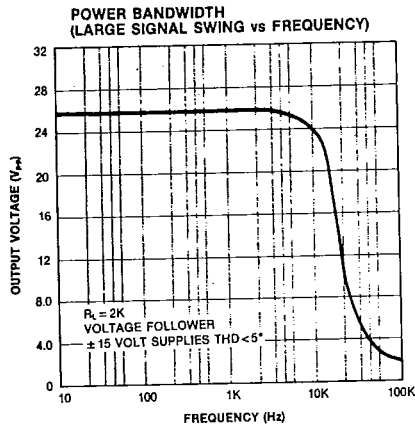


Fig. 3

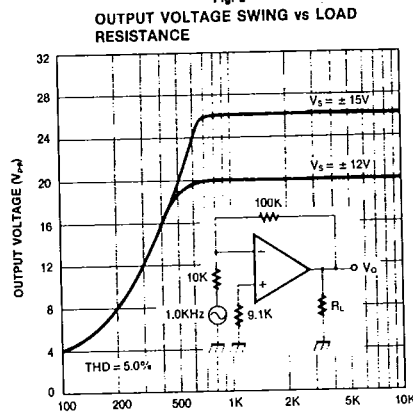


Fig. 4