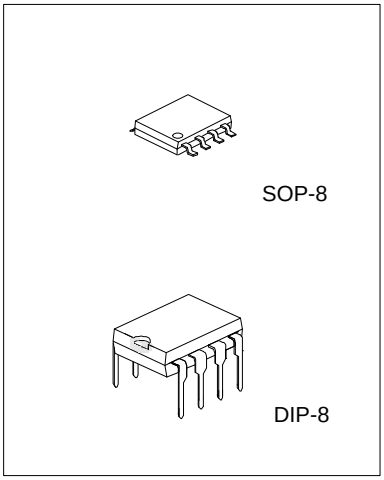
UTC MC1458 LINEAR INTEGRATED CIRCUIT

DUAL OPERATIONAL AMPLIFIERS



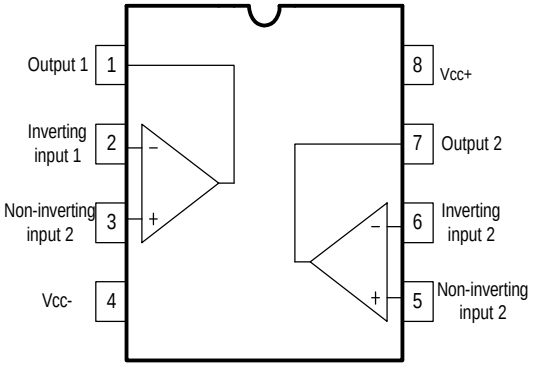
DESCRIPTION

The MC1458 is a high performance monolithic dual operational amplifier constructed on a single silicon chip. It is intended for a wide range of analog applications.(Summing amplifier, Voltage follower, integrator, Active filter, function generator) The high gain and wide range of operating voltages provide superior performance in integrator, summing amplifier, and general feed back applications.

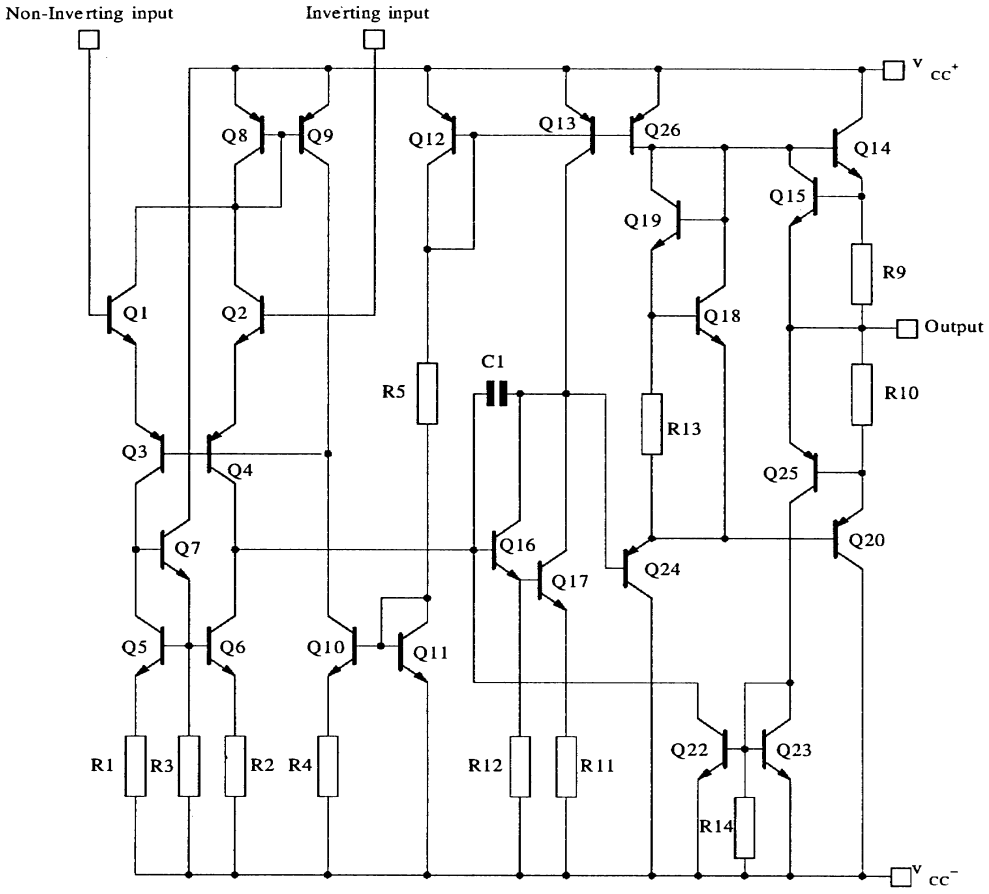
FEATURES

*Low power consumption
*Large input voltage range
*No latch-up
*High gain
*Short-circuit protection
*No frequency compensation required

PING CONFIGURATIONS



TEST CIRCUIT



ABSOLUTE MAXIMUM RATINGS(Ta=25°C)

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	Vcc	-22 to +22	V
Differential Input Voltage	Vid	-30 to +30	V
Input Voltage	Vi	-15 to +15	V
Power Dissipation	Ptot	300 (SOP8) 500 (DIP8)	mW
Output Short Circuit Duration		Infinite	
Operating Free-air Temperature Range	Toper	0 to 70	°C
Storage Temperature Range	Tstg	-65 to +150	°C

ELECTRICAL CHARACTERISTICS(VCC=+-15V,Tamb=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Offset Voltage (RS<=10kΩ)	VIO	TAMB=+25°C		1	5	mV
		0°C <=TAMB<=70°C			6	mV
Input Offset Current	IIO	TAMB=+25°C		2	200	nA
		0°C <=TAMB<=70°C			300	nA
Input Bias Current	IIB	TAMB=+25°C		30	500	nA
		0°C <=TAMB<=70°C			800	nA
Large Signal Voltage Gain (Vo=+-10V,RL=2kΩ)	AVD	TAMB=+25°C	50	200		V/mV
		0°C <=TAMB<=70°C	25			V/mV
Supply Voltage Rejection Ratio (Rs<=10kΩ)	SVR	TAMB=+25°C	77	90		dB
		0°C <=TAMB<=70°C	77			dB
Supply Current, all Amp, no Load	Icc	TAMB=+25°C		2.3	5	mA
		0°C <=TAMB<=70°C			6	mA
Input Common Mode Voltage Range	VICM	TAMB=+25°C	+-12			V
		0°C <=TAMB<=70°C	+-12			V
Common-mode Rejection Ratio (RS<=10kΩ)	CMR	TAMB=+25°C	70	90		dB
		0°C <=TAMB<=70°C	70			dB
Output Short-circuit Current	Ios	TAMB=+25°C	10	20	35	mA
Output Voltage Swing	+-Vopp	TAMB=+25°C,RL=10kΩ	12	14		V
		TAMB=+25°C,RL=2kΩ	10	13		V
		0°C <=TAMB<=70°C, RL=10kΩ	12			V
		0°C <=TAMB<=70°C, RL=2kΩ	10			V
Slew Rate	SR	VI=+-10V,RL=2kΩ,CL=100pF, TAMB=+25°C, unity gain	0.2	0.8		V/μs
Rise Time	tr	VI=20mV,RL=2kΩ,CL=100pF, TAMB=+25°C, unity gain		0.3		μs
Overshoot	Kov	VI=20mV,RL=2kΩ,CL=100pF, TAMB=+25°C, unity gain		5		%
Input resistance	Rj		0.3	2		MΩ
Common-mode Input Impedance	Zic			200		MΩ
Input Capacitance	CI			1.4		pF
Output Resistance	Ro			75		Ω
Full Power Bandwidth	FPB	RL=2kΩ,Vo>=+-10V, AVD=1,THD<=5%		14		KHz
Unity Gain bandwidth	B	VI=10mV,RL=2kΩ,CL=100pF, TAMB=+25°C		1		MHz
Gain bandwidth Product	GBP	VI=10mV,RL=2kΩ,CL=100pF, t=100kHz,TAMB=+25°C	0.4	1		MHz
Total harmonic distortion	THD	F=1kHz, Av=20dB,RL=2kΩ, Vo=2Vpp,CL=100pF,Tamb=25°C		0.02		%
Equivalent Input Noise voltage	en	F=kHz,Rs=100Ω		45		$\frac{nV}{\sqrt{Hz}}$
Phase Margin	ϕm			65		Degress
Gain Margin	Am			11		dB
Channel Separation	Vo1/Vo2			120		dB