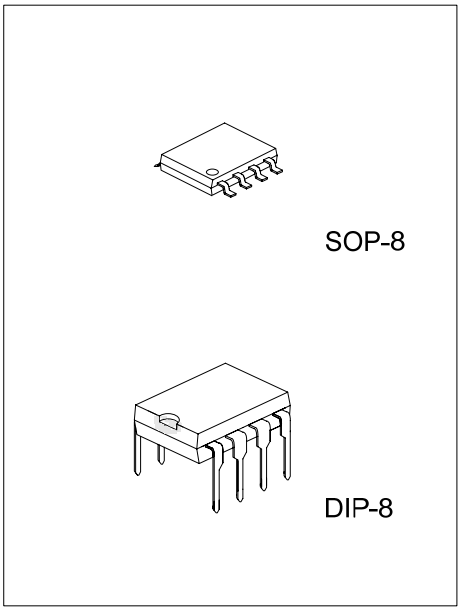
MC1458

LINEAR INTEGRATED CIRCUIT

DUAL OPERATIONAL AMPLIFIER



*Pb-free plating product number: MC1458L

■ DESCRIPTION

The UTC **MC1458** is a high performance dual operational amplifier. It is designed for a wide range of analog applications. The high gain and wide range of operating voltages provide superior performance in summing amplifier, voltage follower, integrator, active filter, function generator and general feed back applications.

■ FEATURES

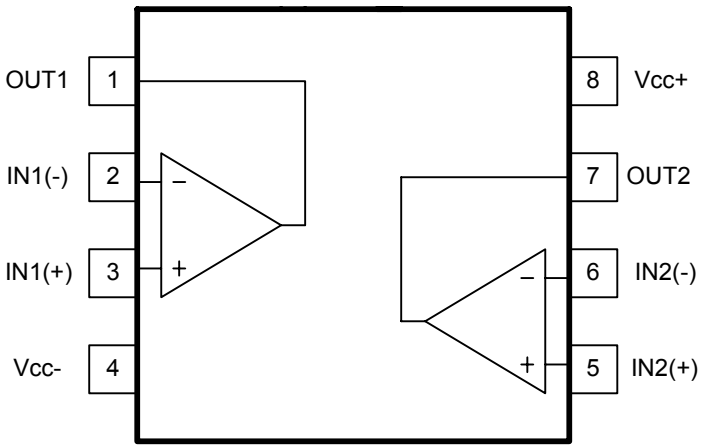
* Low power consumption
* Wide input voltage range
* No latch-up
* High gain
* Short-circuit protection
* Frequency compensation is unnecessary

■ ORDERING INFORMATION

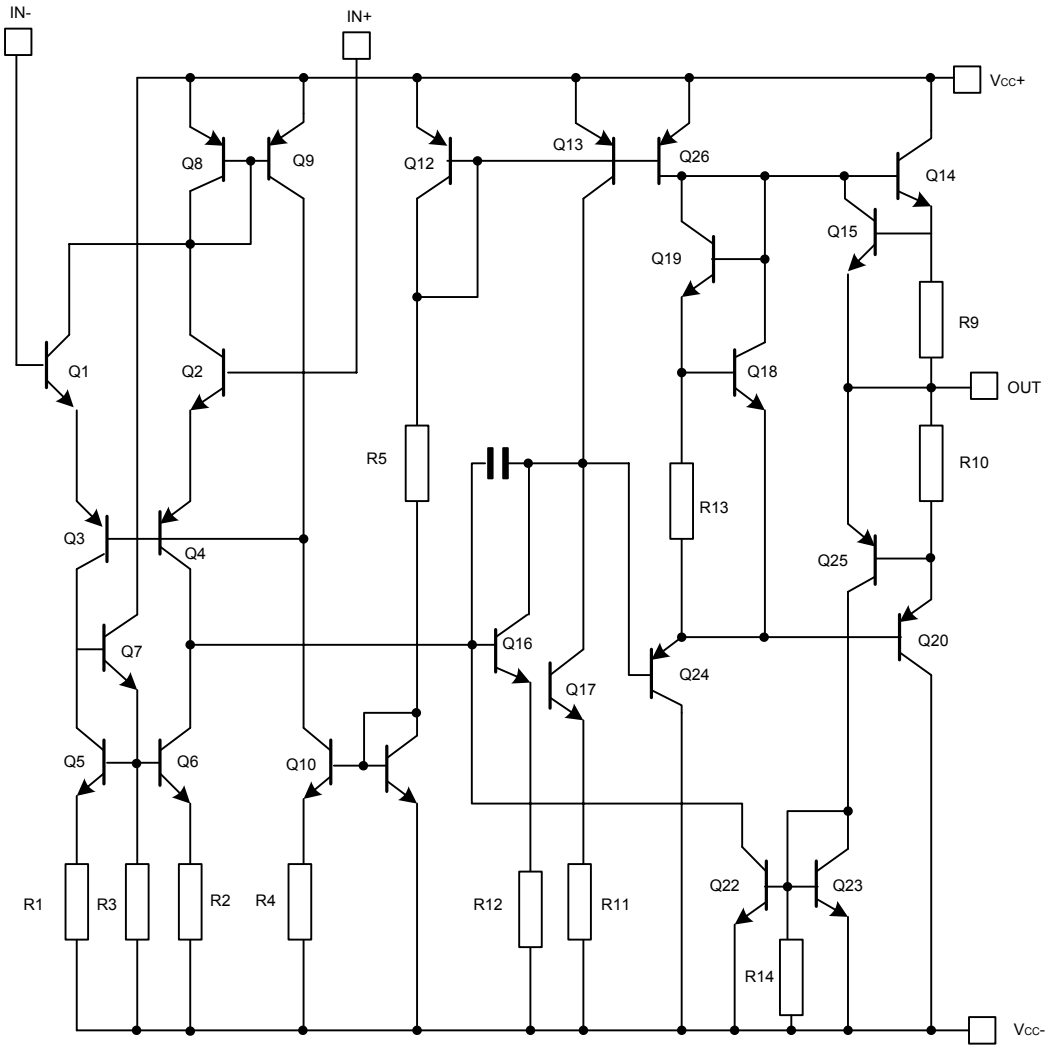
Order Number		Package	Packing
Normal	Lead Free Plating		
MC1458-D08-T	MC1458L-D08-T	DIP-8	Tube
MC1458-S08-R	MC1458L-S08-R	SOP-8	Tape Reel
MC1458-S08-T	MC1458L-S08-T	SOP-8	Tube

MC1458L-D08-T (1)Packing Type (2)Package Type (3)Lead Plating	(1) R: Tape Reel, T: Tube (2) D08: DIP-8, S08: SOP-8 (3) L: Lead Free Plating, Blank: Pb/Sn

■ PIN CONFIGURATIONS



■ TEST CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V_{CC}	-22 ~ +22	V
Differential Input Voltage		$V_{I(DIFF)}$	-30 ~ +30	V
Input Voltage		V_{IN}	-15 ~ +15	V
Power Dissipation	SOP-8	P_D	300	mW
	DIP-8		500	
Output Short Circuit Duration			Infinite	
Operating Ambient Temperature Range		T_{OPR}	0 ~ 70	°C
Storage Temperature Range		T_{STG}	-65~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (V_{CC}=±15V,Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Input Offset Voltage (R_S≤10kΩ)	$V_{I(OFF)}$	Ta=+25°C			1	5	mV
		0°C ≤Ta ≤ 70°C				6	mV
Input Offset Current	$I_{I(OFF)}$	Ta=+25°C			2	200	nA
		0°C ≤ Ta ≤ 70°C				300	nA
Input Bias Current	$I_{I(BIAS)}$	Ta=+25°C			30	500	nA
		0°C ≤Ta ≤ 70°C				800	nA
Large Signal Voltage Gain (Vo=+-10V,RL=2kΩ)	G_V	Ta=+25°C		50	200		V/mV
		0°C ≤Ta ≤ 70°C		25			V/mV
Supply Voltage Rejection Ratio (Rs≤10kΩ)	SVR	Ta=+25°C		77	90		dB
		0°C ≤Ta≤70°C		77			dB
Supply Current(all Amp, no Load)	I_{CC}	Ta=+25°C			2.3	5	mA
		0°C ≤Ta ≤ 70°C				6	mA
Input Common Mode Voltage Range	$V_{IN(CM)}$	Ta=+25°C		±12			V
		0°C ≤Ta ≤ 70°C		±12			V
Common-Mode Rejection Ratio (R_S≤10kΩ)	CMR	Ta=+25°C		70	90		dB
		0°C ≤ Ta ≤ 70°C		70			dB
Output Short-Circuit Current	Ios	Ta=+25°C		10	20	35	mA
Output Voltage Swing	±Vopp	Ta=+25°C	R_L=10kΩ	12	14		V
			R_L=2kΩ	10	13		V
		0°C ≤Ta ≤70°C	R_L=10kΩ	12			V
			R_L=2kΩ	10			V
Slew Rate	SR	V_{IN}=±10V, R_L=2kΩ, C_L=100pF, Ta=+25°C, unity gain		0.2	0.8		V/μs
Rise Time	tr	V_{IN}=20mV, R_L=2kΩ, C_L=100pF, Ta=+25°C, unity gain			0.3		μs
Over-Shoot	Kos	V_{IN}=20mV, R_L=2kΩ,C_L=100pF, Ta=+25°C, unity gain			5		%
Input Resistance	R_{IN}			0.3	2		MΩ
Common-Mode Input Impedance	Z_{IN}				200		MΩ
Input Capacitance	C_{IN}				1.4		pF
Output Resistance	R_{OUT}				75		Ω
Full Power Bandwidth	FB_W	R_L=2kΩ,V_{OUT} ≥ ±10V, G_V=1,THD ≤ 5%			14		KHz
Unity Gain Bandwidth	GB_W	V_{IN}=10mV, R_L=2kΩ, C_L=100pF, Ta=+25°C			1		MHz
Gain Bandwidth Product	GBP	V_{IN}=10mV,R_L=2kΩ, C_L=100pF, t=100kHz,Ta=+25°C		0.4	1		MHz

■ ELECTRICAL CHARACTERISTICS(Cont.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Total Harmonic Distortion	THD	F=1kHz, Av=20dB, R_L=2kΩ, V_{OUT}=2Vpp,C_L=100pF,Ta=25°C		0.02		%
Equivalent Input Noise Voltage	eN	F=kHz, Rs=100Ω		45		$\frac{nV}{\sqrt{Hz}}$
Phase Margin	ϕm			65		Deg.
Gain Margin	Am			11		dB
Channel Separation	Vo1/Vo2			120		dB