



MC1458

LINEAR INTEGRATED CIRCUIT

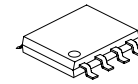
DUAL OPERATIONAL AMPLIFIER

DESCRIPTION

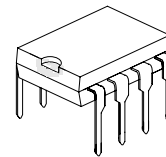
The UTC **MC1458** is a high performance dual operational amplifier. It is designed for a wide range of analog applications. The high gain and wide range of operating voltages provide superior performance in summing amplifier, voltage follower, integrator, active filter, function generator and general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

FEATURES

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



SOP-8



DIP-8

*Pb-free plating product number: MC1458L

ORDERING INFORMATION

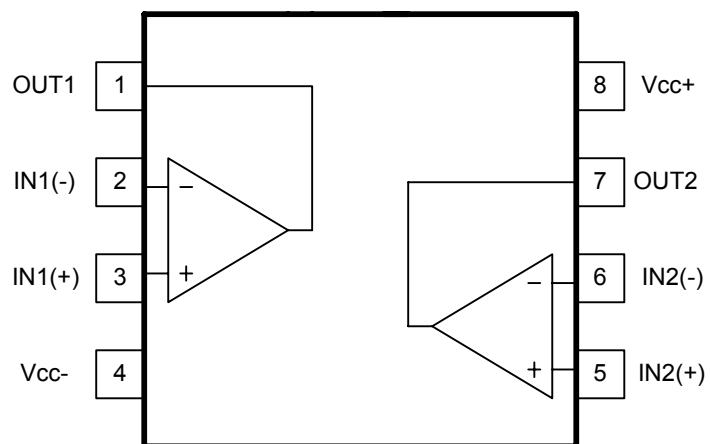
Order Number		Package	Packing
Normal	Lead Free Plating		
MC1458-D08-T	MC1458L-D08-T	DIP-8	Tube
MC1458-S08-R	MC1458L-S08-R	SOP-8	Tape Reel
MC1458-S08-T	MC1458L-S08-T	SOP-8	Tube

MC1458L-D08-T

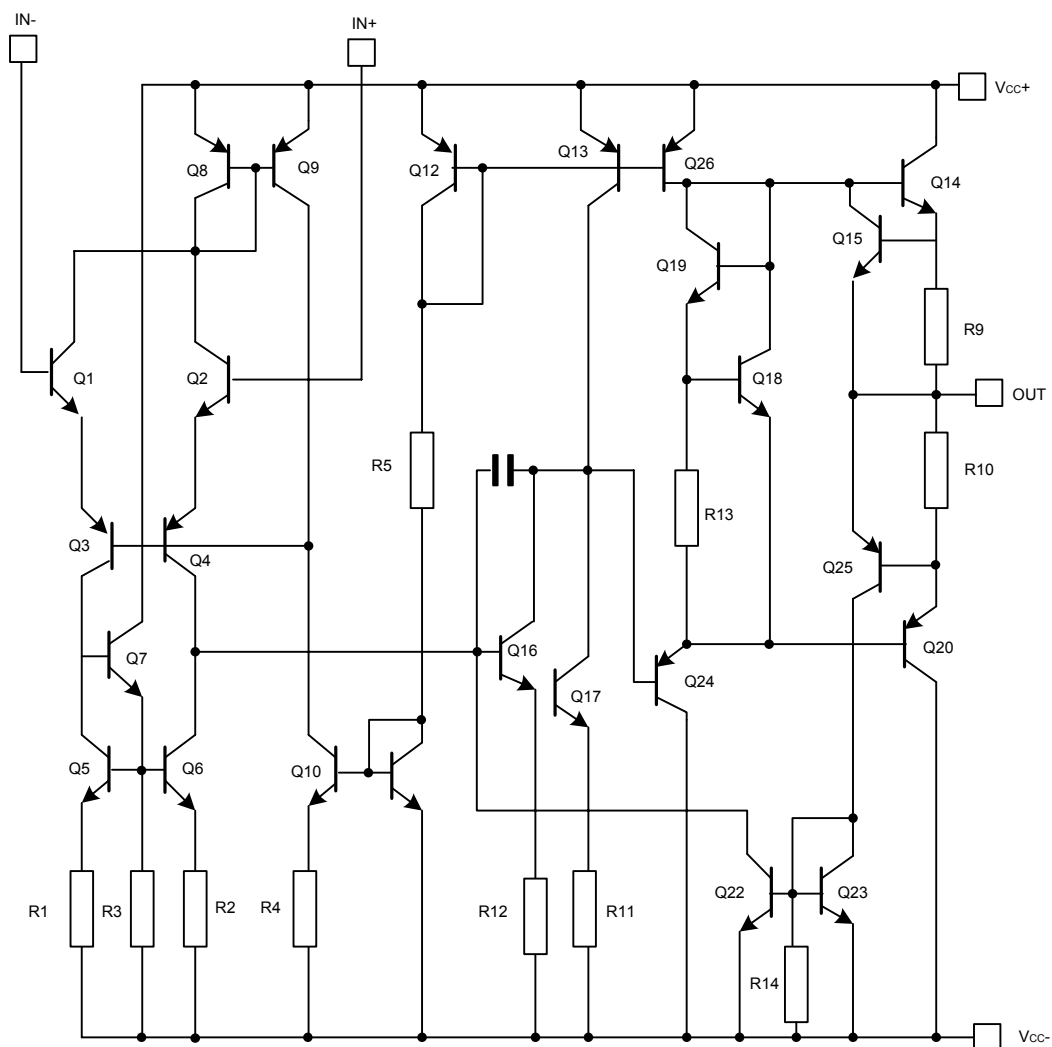
- (1)Packing Type
- (2)Package Type
- (3)Lead Plating

- (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 ($V_{CC}=\pm 15V$, Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Offset Voltage ($R_S \leq 10k\Omega$)	$V_{I(OFF)}$	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 ($V_O = \pm 10V, R_L = 2k\Omega$)	G_V	Ta=+25°C	50	200		V/mV
		0°C ≤ Ta ≤ 70°C	25			V/mV
Supply Voltage Rejection Ratio ($R_S \leq 10k\Omega$)	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 ($R_S \leq 10k\Omega$)	CMR	Ta=+25°C	70	90		dB
		0°C ≤ Ta ≤ 70°C	70			dB
Output Short-Circuit Current	I_{OS}	Ta=+25°C	10	20	35	mA
Output Voltage Swing	$\pm V_{opp}$	Ta=+25°C	$R_L = 10k\Omega$	12	14	V
			$R_L = 2k\Omega$	10	13	V
		0°C ≤ Ta ≤ 70°C	$R_L = 10k\Omega$	12		V
			$R_L = 2k\Omega$	10		V
Slew Rate	SR	$V_{IN} = \pm 10V, R_L = 2k\Omega, C_L = 100pF$, Ta=+25°C, unity gain	0.2	0.8		V/μs
Rise Time	t_r	$V_{IN} = 20mV, R_L = 2k\Omega, C_L = 100pF$, Ta=+25°C, unity gain		0.3		μs
Over-Shoot	K_{OS}	$V_{IN} = 20mV, R_L = 2k\Omega, C_L = 100pF$, 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	FBW	$R_L = 2k\Omega, V_{OUT} \geq \pm 10V$, $G_V = 1, THD \leq 5\%$		14		KHz
Unity Gain Bandwidth	GBW	$V_{IN} = 10mV, R_L = 2k\Omega, C_L = 100pF$, Ta=+25°C		1		MHz
Gain Bandwidth Product	GBP	$V_{IN} = 10mV, R_L = 2k\Omega, C_L = 100pF$, $t = 100kHz, Ta = +25^\circ C$	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 =2k Ω , V _{OUT} =2V _{pp} , C _L =100pF, Ta=25°C		0.02		%
Equivalent Input Noise Voltage	eN	F=kHz, R _s =100 Ω		45		$\frac{nV}{\sqrt{Hz}}$
Phase Margin	ϕ_m			65		Deg.
Gain Margin	A _m			11		dB
Channel Separation	Vo1/Vo2			120		dB

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