

# UTC MC4558      LINEAR INTEGRATED CIRCUIT

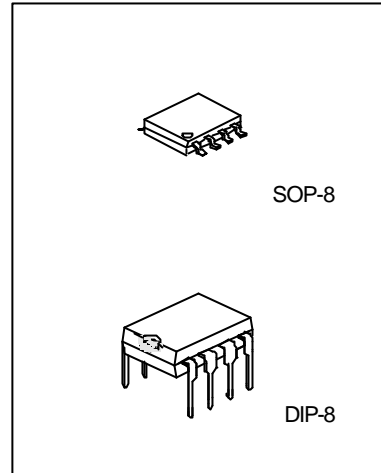
## DUAL OPERATIONAL AMPLIFIER

### DESCRIPTION

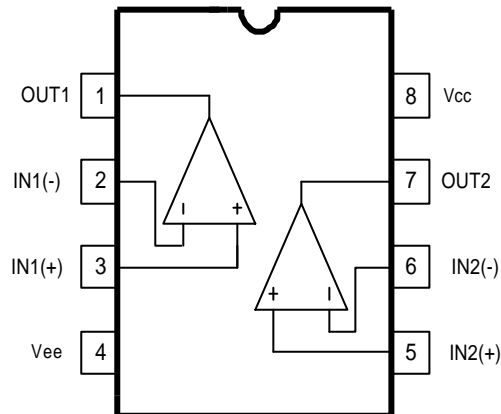
The UTC MC4558 is a monolithic integrated circuit designed for dual operational amplifier.

### FEATURES

- \*No frequency compensation required
- \*No latch-up
- \*Large common mode and differential voltage range
- \*Parameter tracking over temperature range
- \*Gain and phase match between amplifiers
- \*Internally frequency compensated
- \*Low noise input transistors

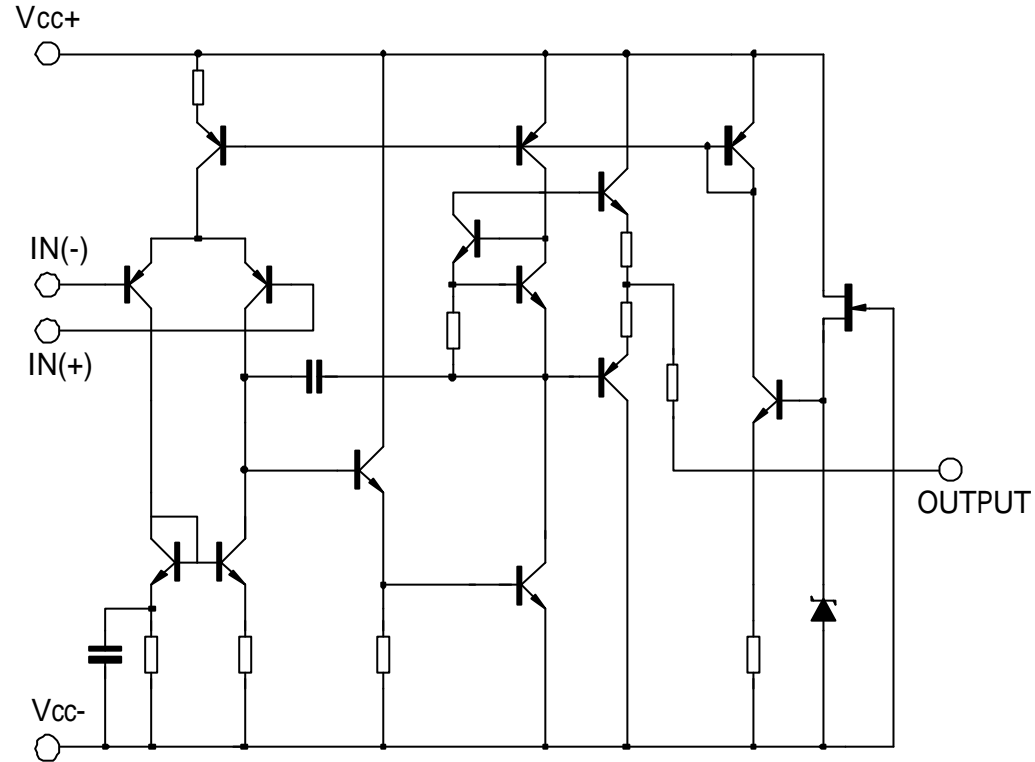


### PIN CONFIGURATIONS



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## BLOCK DIAGRAM



## ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V <sub>cc</sub>	+22	V
Differential input voltage	V <sub>I(DIFF)</sub>	+18	V
Power Dissipation	P <sub>D</sub>	600	mW
	P <sub>D</sub>	400	mW
Input Voltage	V <sub>I</sub>	+15	V
Operating Temperature	T <sub>OPR</sub>	0 ~ +70	°C
Storage Temperature	T <sub>STG</sub>	-65 ~ +150	°C

## ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C, V<sub>cc</sub>=15V, V<sub>ee</sub>=-15V)

PARAMETER	SYMBOL	TEST CONDUCTION	MIN	TYP	MAX	UNIT
Supply Current, all Amp, no load	I <sub>cc</sub>			2.3	4.5	mA
Input offset voltage	V <sub>IO</sub>	R <sub>s</sub> <10kΩ		2	6	mV
Input offset current	I <sub>IO</sub>			5	200	nA
Input bias current	I <sub>BIAS</sub>			30	500	nA

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PARAMETER	SYMBOL	TEST CONDUCTION	MIN	TYP	MAX	UNIT
Large signal voltage gain	Gv	Vo(p-p)=±10V, RL≤2kΩ	20	200		V/mV
Common Mode Input Voltage Range	VI(R)		+12	+13		V
Common Mode Rejection Ratio	CMRR	Rs≤10kΩ	70	90		dB
Supply Voltage Rejection Ratio	PSRR	Rs≤10kΩ	76	90		dB
Output Voltage swing	Vo(p-p)	RL≥10kΩ		+12	+14	V
Power Consumption	Pc			70	170	mV
Slew Rate	SR	Vi=±10V, RL≥2kΩ, CL≤100pF	1.2	2.2		V/μs
Rise Time	TRIS	Vi=±20mV, RL≥2kΩ, CL≤100pF		0.3		μs
Overshoot	OS	Vi=±20mV, RL≥2kΩ, CL≤100pF		15		%
Input Resistance	Ri		0.3	2		MΩ
Output Resistance	Ro			75		Ω
Total Harmonic Distortion	THD	f=1kHz, Av=20dB, RL=2kΩ, Vo=2Vpp, CL=100pF		0.008		%
Channel Separation	Vo1/Vo2			120		dB

## FREQUENCY CHARACTERISTICS (Ta=25°C, Vcc=15V, Vee=-15V)

PARAMETER	SYMBOL	TEST CONDUCTION	MIN	TYP	MAX	UNIT
Unity Gain Bandwidth	BW		2.0	2.8		MHz

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## TYPICAL PERFORMANCE CHARACTERISTICS

Fig. 1 Burst Noise vs  $R_s$

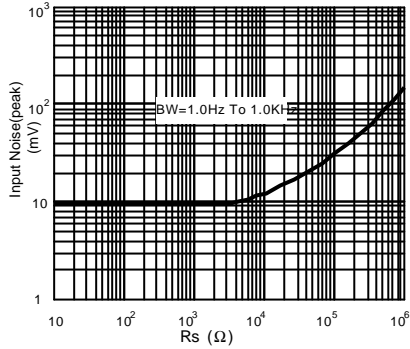


Fig. 2 RMS Noise vs  $R_s$

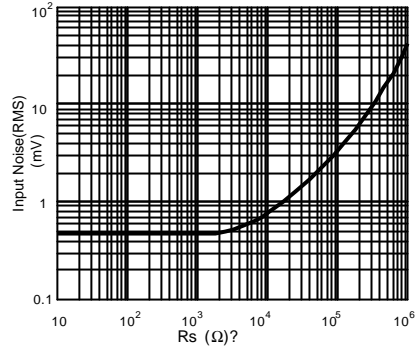


Fig. 3 Output Noise vs  $R_s$

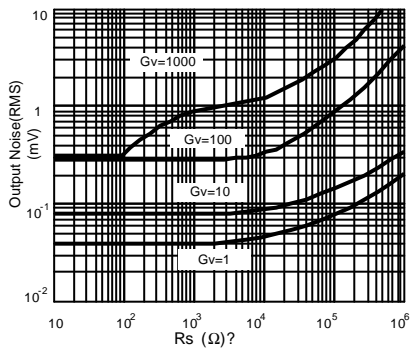


Fig. 4 Spectral Noise Density

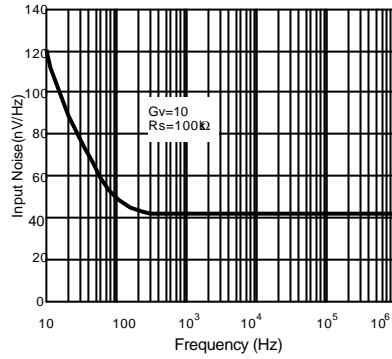


Fig. 5 Open loop frequency response

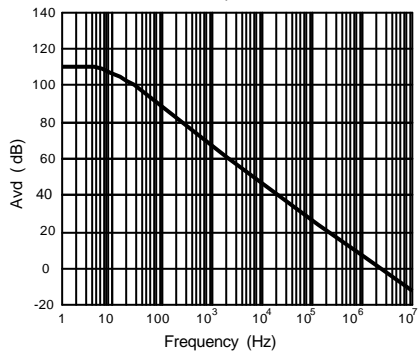
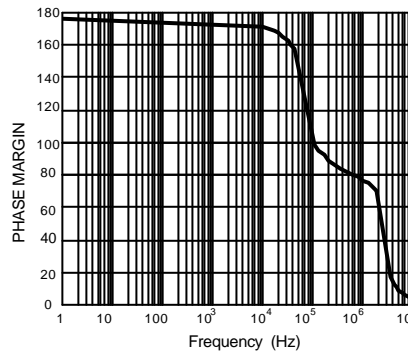


Fig. 6 PHASE MARGIN vs FREQUENCY



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