

UTC MC4558 LINEAR INTEGRATED CIRCUIT

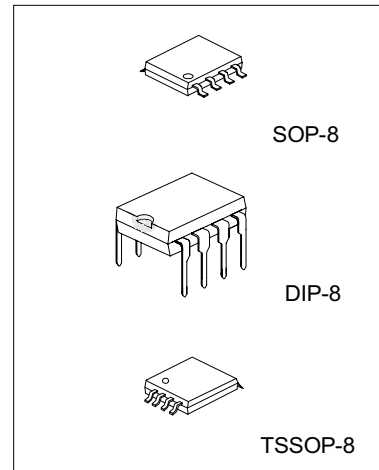
DUAL OPERATIONAL AMPLIFIER

DESCRIPTION

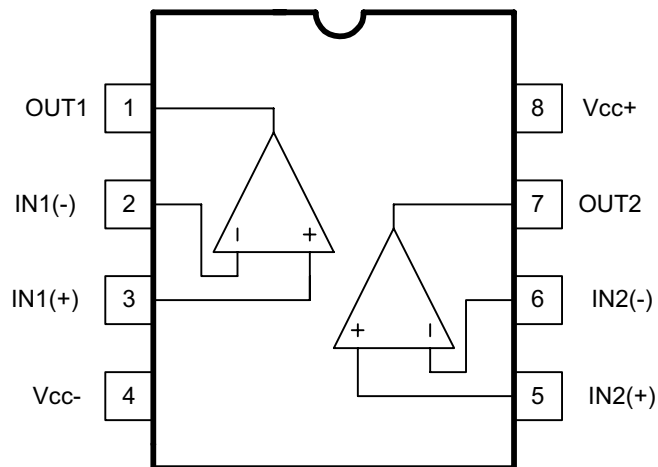
The UTC MC4558 is a monolithic integrated circuit designed for dual operational amplifier.

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

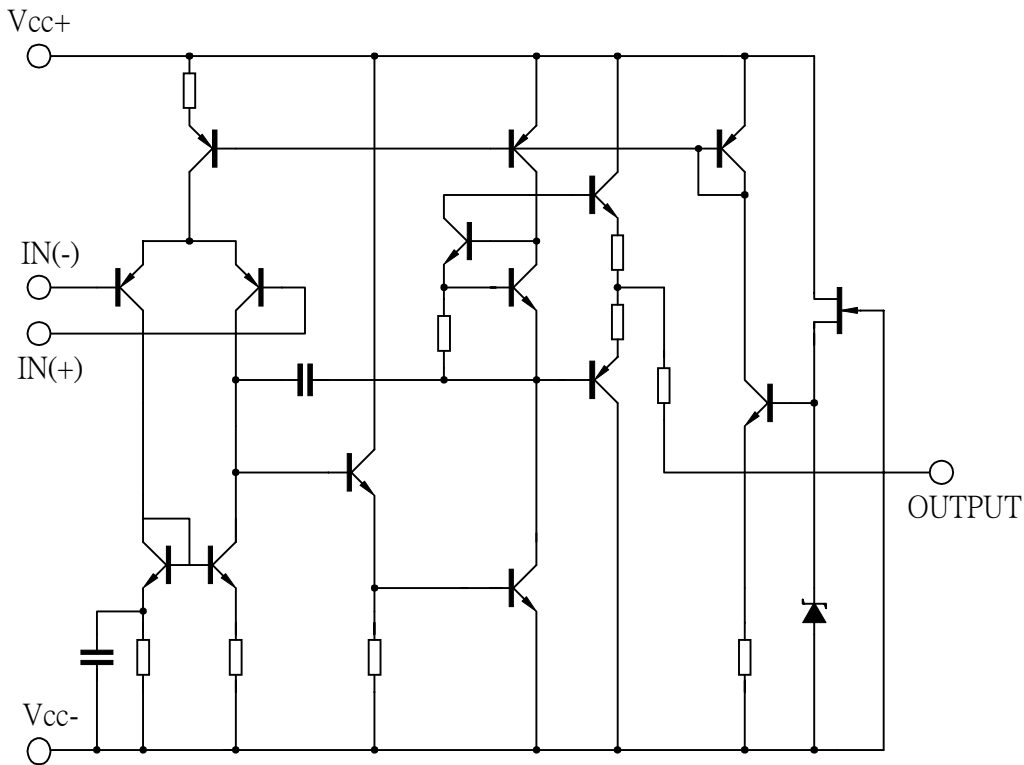


PIN CONFIGURATIONS



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BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V_{CC}	+22	V
Differential input voltage	$V_I(\text{DIFF})$	+18	V
Power Dissipation	P_D	600	mW
DIP-8			
SOP-8		400	mW
TSSOP-8		250	mW
Input Voltage	V_I	+15	V
Operating Temperature	T_{OPR}	0 ~ +70	°C
Storage Temperature	T_{STG}	-65 ~ +150	°C

ELECTRICAL CHARACTERISTICS($T_a=25^{\circ}\text{C}$, $V_{CC}=15\text{V}$, $V_{EE}=-15\text{V}$)

PARAMETER	SYMBOL	TEST CONDUCTION	MIN	TYP	MAX	UNIT
Supply Current, all Amp, no load	I_{CC}			2.3	4.5	mA
Input offset voltage	V_{IO}	$R_s < 10\text{k}\Omega$		2	6	mV
Input offset current	I_{IO}			5	200	nA

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PARAMETER	SYMBOL	TEST CONDUCTION	MIN	TYP	MAX	UNIT
Input bias current	I _{BIAS}			30	500	nA
Large signal voltage gain	G _v	V _o (p-p)=+-10V, R _L <=2k Ω	20	200		V/mV
Common Mode Input Voltage Range	V _{I(R)}		+12	+13		V
Common Mode Rejection Ratio	CMRR	R _s <=10k Ω	70	90		dB
Supply Voltage Rejection Ratio	PSRR	R _s <=10k Ω	76	90		dB
Output Voltage swing	V _o (p-p)	R _L >=10k Ω		+12	+14	V
Power Consumption	P _c			70	170	mV
Slew Rate	SR	V _i =+-10V, R _L >=2k Ω , C _L <=100pF	1.2	2.2		V/ μ s
Rise Time	T _{RIS}	V _i =+-20mV, R _L >=2k Ω , C _L <=100pF		0.3		μ s
Overshoot	OS	V _i =+-20mV, R _L >=2k Ω , C _L <=100pF		15		%
Input Resistance	R _i		0.3	2		M Ω
Output Resistance	R _o			75		Ω
Total Harmonic Distortion	THD	f=1kHz, A _v =20dB, R _L =2k Ω , V _o =2Vpp, C _L =100pF		0.008		%
Channel Separation	V _{o1} /V _{o2}			120		dB

FREQUENCY CHARACTERISTICS (T_a=25°C, V_{cc}=15V, V_{ee}=-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

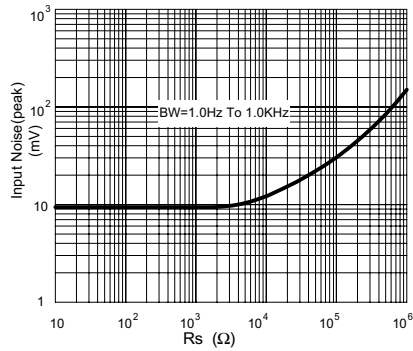


Fig. 2 RMS Noise vs R_s

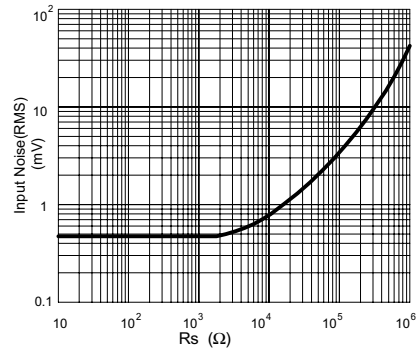


Fig. 3 Output Noise vs R_s

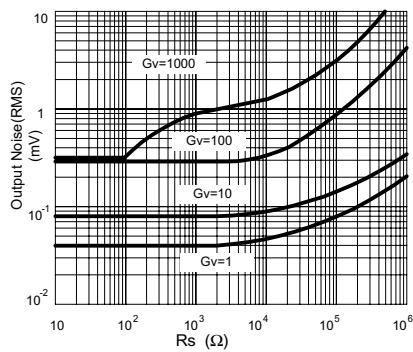


Fig. 4 Spectral Noise Density

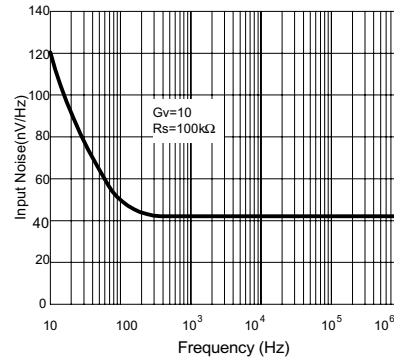


Fig. 5 Open loop frequency response

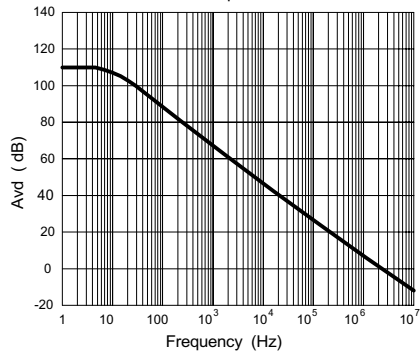
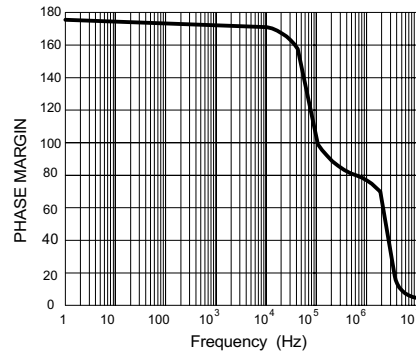


Fig. 6 PHASE MARGIN vs FREQUENCY



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