

**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

ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
MC4558L-D08-T	MC4558G-D08-T	DIP-8	Tube
MC4558L-G08-T	MC4558G-G08-T	SIP-8	Tube
MC4558L-L09-T	MC4558G-G09-T	SIP-9	Tube
MC4558L-P08-R	MC4558G-P08-R	TSSOP-8	Tape Reel
MC4558L-S08-R	MC4558G-S08-R	SOP-8	Tape Reel
MC4558L-SM1-R	MC4558G-SM1-R	MSOP-8	Tape Reel

MC4558G-D08-T

(1) Packing Type

(2) Package Type

(3) Green Package

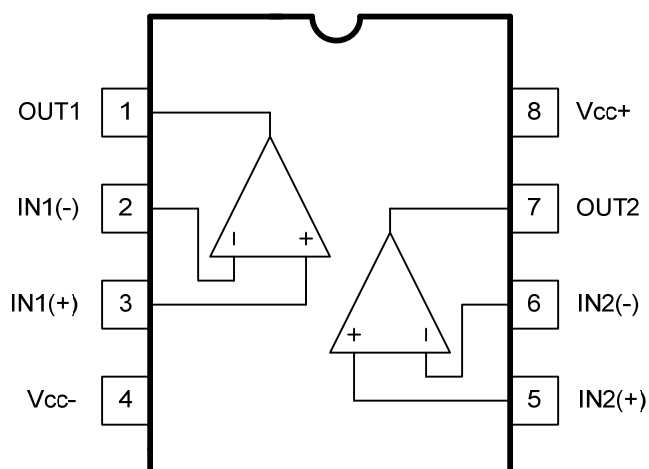
- (1) T: Tube, R: Tape Reel
- (2) D08: DIP-8, G08: SIP-8, G09: SIP-9,
P08: TSSOP-8, S08: SOP-8, SM1: MSOP-8
- (3) G: Halogen Free and Lead Free, L: Lead Free

MARKING

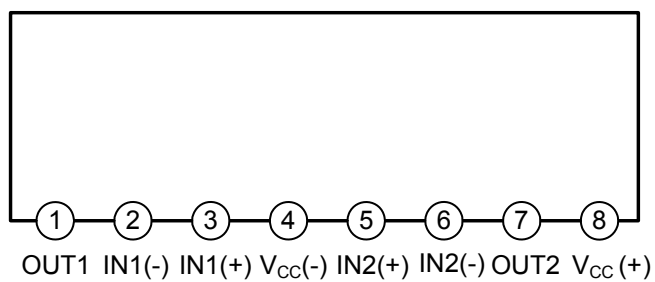
DIP-8	SOP-8/MSOP-8
8 7 6 5 → Date Code UTC □□□□ L: Lead Free MC4558 □ G: Halogen Free 1 2 3 4 → Lot Code	8 7 6 5 → Date Code UTC □□□□ L: Lead Free MC4558 □ G: Halogen Free 1 2 3 4 → Lot Code
TSSOP-8	SIP-8 / SIP-9
8 7 6 5 → Date Code UTC □□□□ L: Lead Free MC4558 □ G: Halogen Free 1 2 3 4 → Lot Code	8 7 6 5 → Date Code UTC □□□□ L: Lead Free MC4558 □ G: Halogen Free 1 2 3 4 → Lot Code

■ PIN CONFIGURATIONS

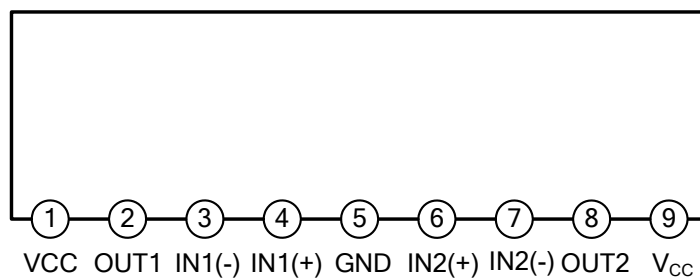
SOP-8/DIP-8/MSOP-8/TSSOP-8



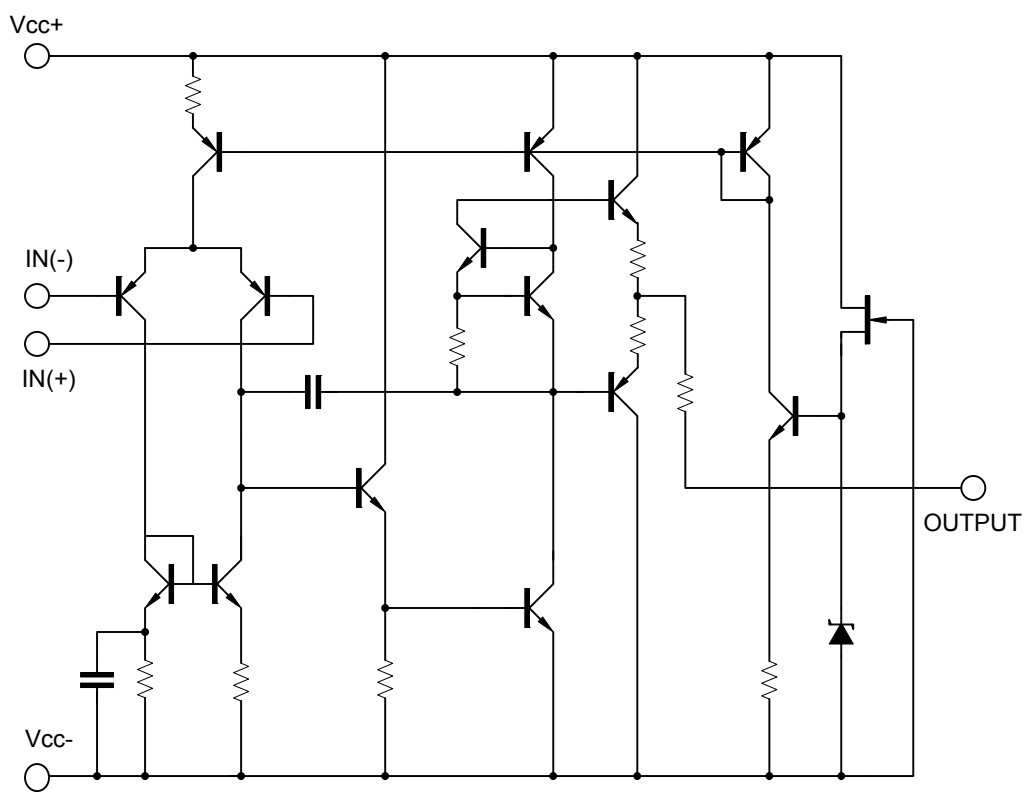
SIP-8



SIP-9



■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATING	UNIT
Supply Voltage		V_{CC}	± 22	V
Differential input voltage		$V_{I(DIFF)}$	± 18	V
Power Dissipation	DIP-8	P_D	600	mW
	SOP-8		400	mW
	TSSOP-8		300	mW
	SIP-8		750	mW
	SIP-9			
	MSOP-8		250	mW
Input Voltage		V_{IN}	± 15	V
Junction Temperature		T_J	+125	°C
Operating Temperature		T_{OPR}	-20 ~ +85	°C
Storage Temperature		T_{STG}	-40 ~ +150	°C

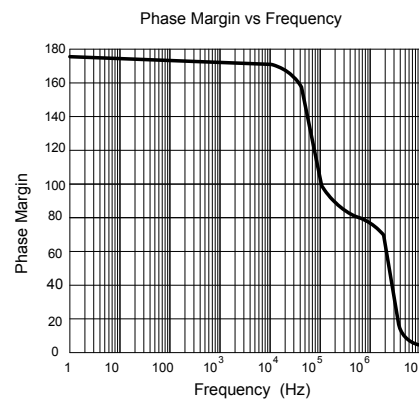
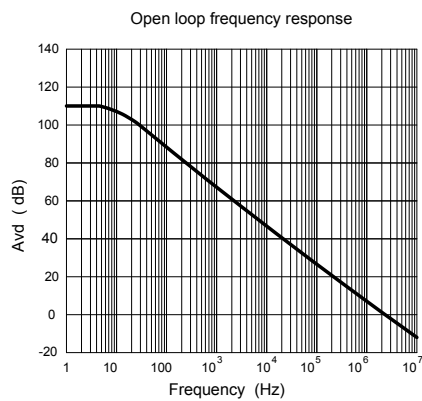
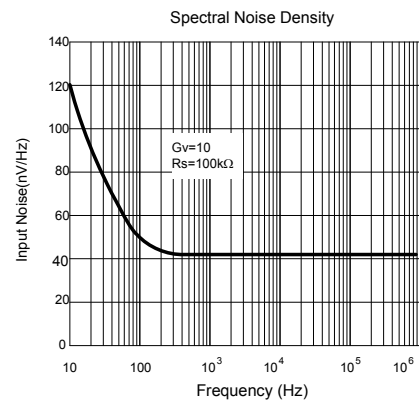
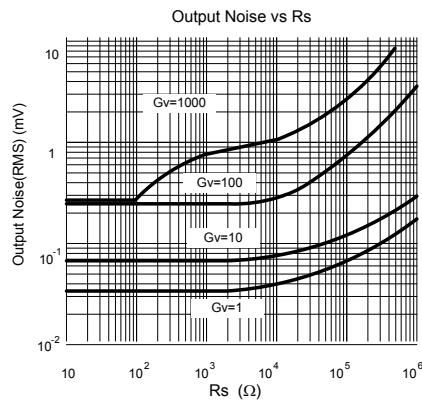
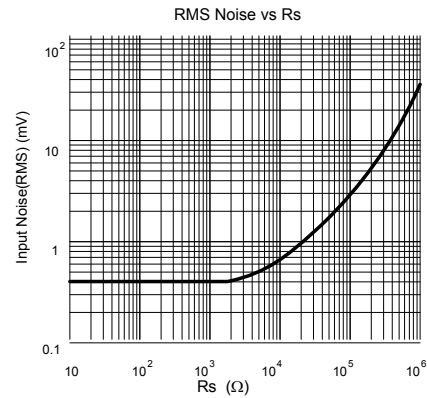
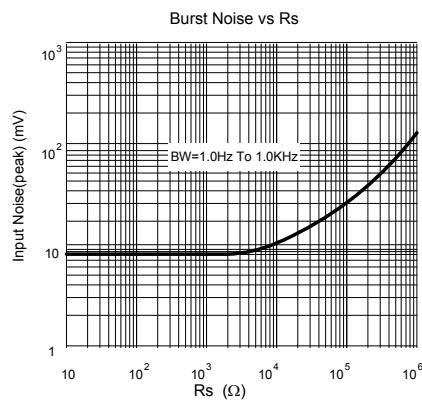
Note 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. The device is guaranteed to meet performance specification within 0°C ~ +70°C operating temperature range and assured by design from -20°C ~ +85°C.

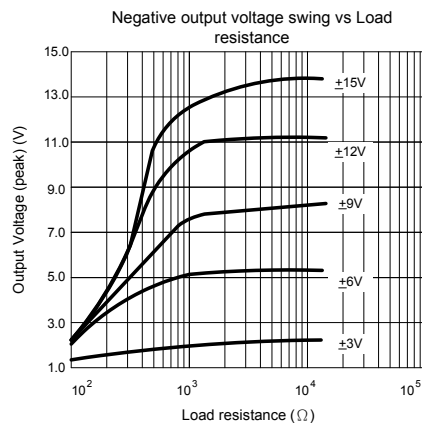
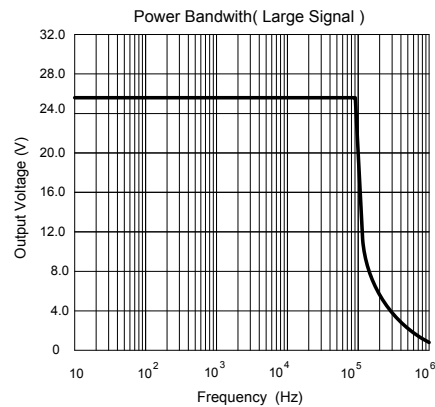
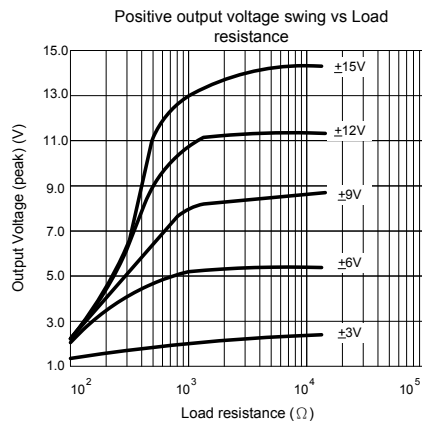
■ ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$, $V_{CC}=15\text{V}$, $V_{EE}=-15\text{V}$)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Current, all Amp, no load	I_{CC}			2.3	4.5	mA
Input offset voltage	$V_{I(OFF)}$	$R_S < 10\text{k}\Omega$		2	6	mV
Input offset current	$I_{I(OFF)}$			5	200	nA
Input bias current	$I_{I(BIAS)}$			30	500	nA
Large signal voltage gain	G_V	$V_o(p-p) = \pm 10\text{V}$, $R_L \leq 2\text{k}\Omega$	20	200		V/mV
Common Mode Input Voltage Range	$V_{I(COM)}$		± 12	± 13		V
Common Mode Rejection Ratio	$RR_{(COM)}$	$R_S \leq 10\text{k}\Omega$	70	90		dB
Supply Voltage Rejection Ratio	$RR_{(VCC)}$	$R_S \leq 10\text{k}\Omega$	76	90		dB
Output Voltage swing	$V_{O(p-p)}$	$R_L \geq 10\text{k}\Omega$	± 12	± 14		V
Power Consumption	P_C			70	170	mW
Slew Rate	SR	$V_{IN} = \pm 10\text{V}$, $R_L \geq 2\text{k}\Omega$, $C_L \leq 100\text{pF}$	1.2	2.2		V/ μs
Rise Time	T_{RIS}	$V_{IN} = \pm 20\text{mV}$, $R_L \geq 2\text{k}\Omega$, $C_L \leq 100\text{pF}$		0.3		μs
Overshoot	OS	$V_{IN} = \pm 20\text{mV}$, $R_L \geq 2\text{k}\Omega$, $C_L \leq 100\text{pF}$		15		%
Input Resistance	R_{IN}		0.3	2		M Ω
Output Resistance	R_{OUT}			75		Ω
Total Harmonic Distortion	THD	$f=1\text{kHz}$, $A_v=20\text{dB}$, $R_L=2\text{k}\Omega$, $V_{OUT}=2\text{Vpp}$, $C_L=100\text{pF}$		0.008		%
Channel Separation	V_{O1}/V_{O2}			120		dB
FREQUENCY CHARACTERISTIC						
Unity Gain Bandwidth	BW		2.0	2.8		MHz

■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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