



MC4580

LINEAR INTEGRATED CIRCUIT

DUAL OPERATIONAL AMPLIFIER

DESCRIPTION

The UTC **MC4580** is the dual operational amplifier, specially designed for improving the tone control, which is most suitable for the audio application.

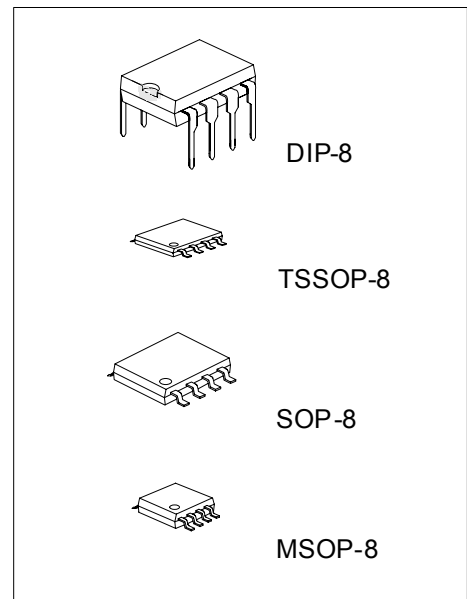
Featuring noiseless, higher gain bandwidth, high output current and low distortion ratio, and it is most suitable not only for acoustic electronic parts of audio pre-amp and active filter, but also for the industrial measurement tools. It is also suitable for the head phone amp at higher output current, and further more, it can be applied for the handy type set operational amplifier of general purpose in application of low voltage single supply type which is properly biased of the input low voltage source.

FEATURES

- *Operating voltage (±2V ~ ±18V)
- *Low input noise voltage (0.8μVrms typ.)
- *Wide gain bandwidth product (15MHz typ.)
- *Low distortion (0.0005% typ.)
- *Slew rate (5V/μs typ.)
- *Bipolar technology

ORDERING INFORMATION

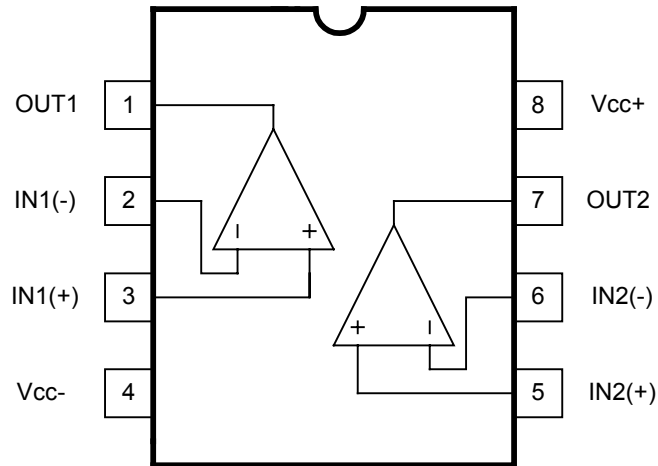
Order Number		Package	Packing
Normal	Lead Free Plating		
MC4580-D08-T	MC4580L-D08-T	DIP-8	Tube
MC4580-P08-R	MC4580L-P08-R	TSSOP-8	Tape Reel
MC4580-P08-T	MC4580L-P08-T	TSSOP-8	Tube
MC4580-S08-R	MC4580L-S08-R	SOP-8	Tape Reel
MC4580-S08-T	MC4580L-S08-T	SOP-8	Tube
MC4580-SM1-R	MC4580L-SM1-R	MSOP-8	Tape Reel
MC4580-SM1-T	MC4580L-SM1-T	MSOP-8	Tube



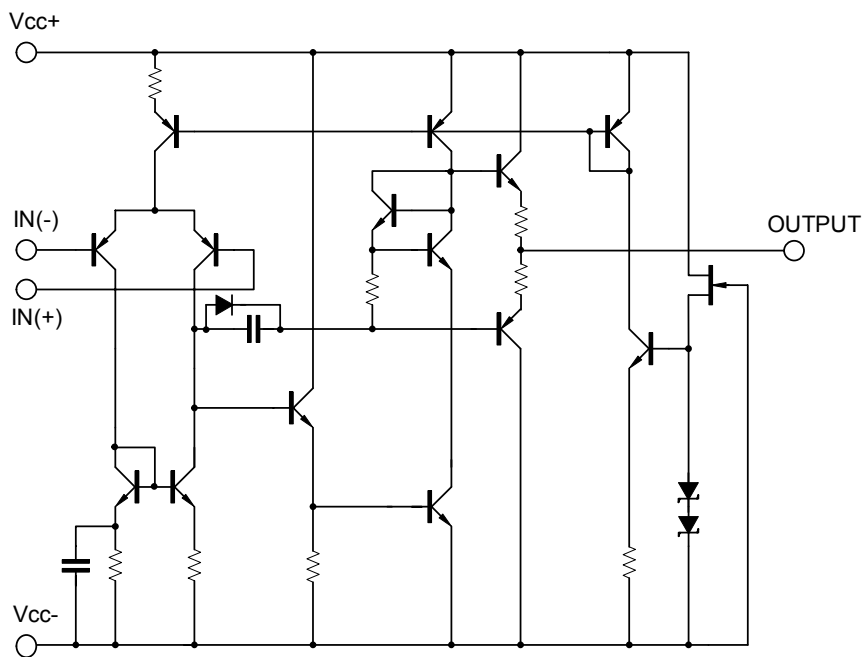
*Pb-free plating product number: MC4580L

<p>MC4580L-D08-R</p> <p>(1)Packing Type (2)Package Type (3)Lead Plating</p>	<p>(1) R: Tape Reel, T: Tube (2) D08: DIP-8, P08: TSSOP-8, S08: SOP-8, SM 1: MSOP-8 (3) L: Lead Free Plating, Blank: Pb/Sn</p>
---	--

■ PIN CONFIGURATION



■ TEST CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

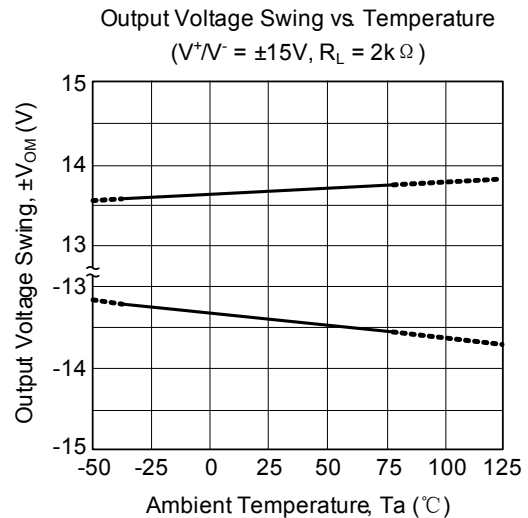
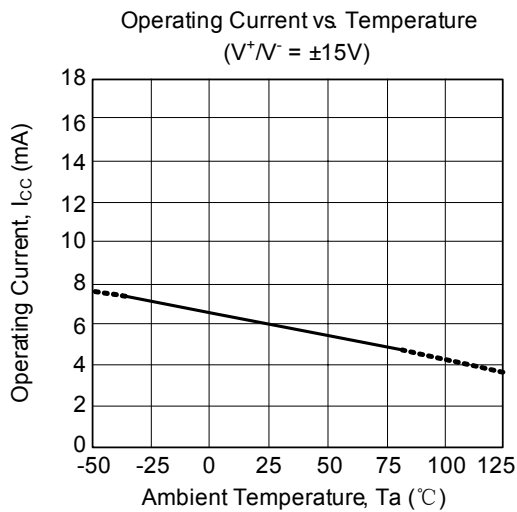
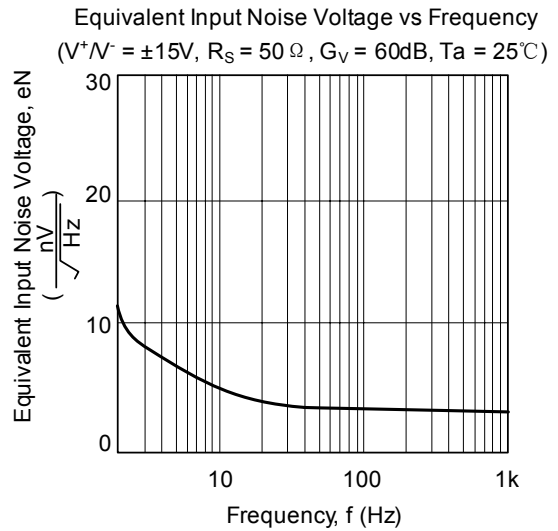
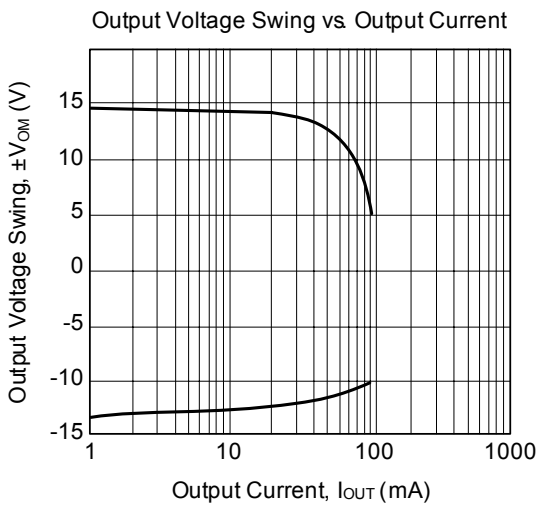
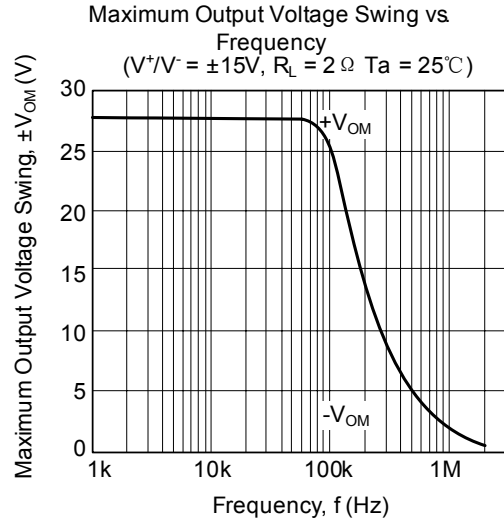
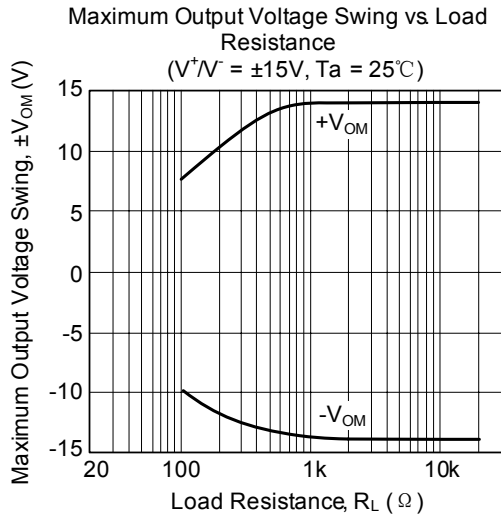
PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V^+/V^-	±18	V
Input Voltage		V_{IN}	±15	V
Differential Input Voltage		$V_{I(DIFF)}$	±30	V
Output Current		I_{OUT}	±50	mA
Power Dissipation	SOP-8	P_D	300	mW
	DIP-8		800	
	TSSOP-8		250	
	MSOP-8		250	
Junction Temperature		T_J	+125	°C
Operating Temperature		T_{OPR}	-40~+85	°C
Storage Temperature		T_{STG}	-40~+125	°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+ /V- = ±15V, Ta=25°C)

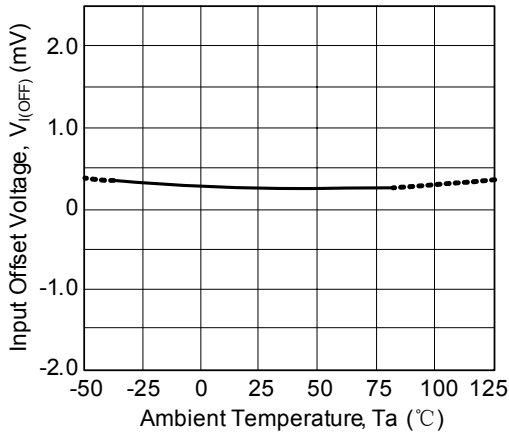
PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Input Offset Voltage	$V_{I(OFF)}$	$R_S \cong 10k\Omega$	-	0.5	3	mV
Input Offset Current	$I_{I(OFF)}$		-	5	200	nA
Input Bias Current	$I_{I(BIAS)}$		-	100	500	nA
Large Signal Voltage Gain	G_V	$V_{OUT} = \pm 10V, R_L \cong 2k\Omega$	90	110	-	dB
Output Voltage Swing	V_{OM}	$R_L \cong 2k\Omega$	±12	±13.5	-	V
Input Common Mode Voltage	$V_{I(CM)}$		±12	±13.5	-	V
Common Mode Rejection Ratio	RR	$R_S \cong 10k\Omega$	80	110	-	dB
Supply Voltage Rejection Ratio	SVR	$R_S \cong 10k\Omega$	80	110	-	dB
Operating Current	I_{CC}		-	6	9	mA
Slew Rate	SR	$R_L \cong 2k\Omega$	-	5	-	V/ μ s
Gain bandwidth Product	GB	f=10KHz	-	15	-	MHz
Total Harmonic Distortion	THD	$G_V = 20dB, V_{OUT} = 5V, R_L = 2k\Omega, f = 1KHz$	-	0.0005	-	%
Input Noise Voltage	eN	RIAA $R_S = 2.2 k\Omega, 30kHzLPF$	-	0.8	-	μ Vrms

■ TYPICAL CHARACTERISTICS

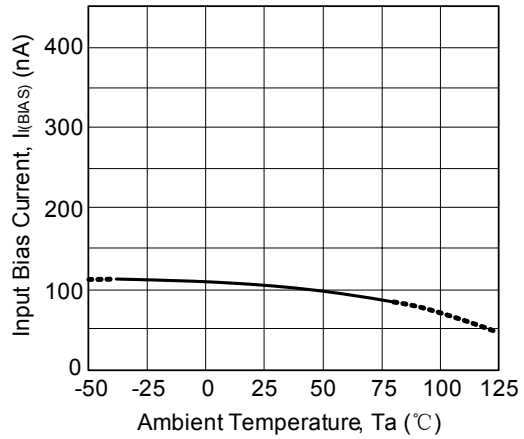


■ TYPICAL CHARACTERISTICS(Cont.)

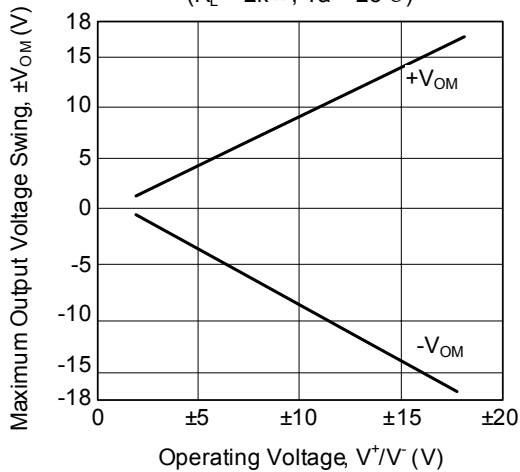
Input Offset Voltage vs. Temperature
($V^+/V^- = \pm 15V$)



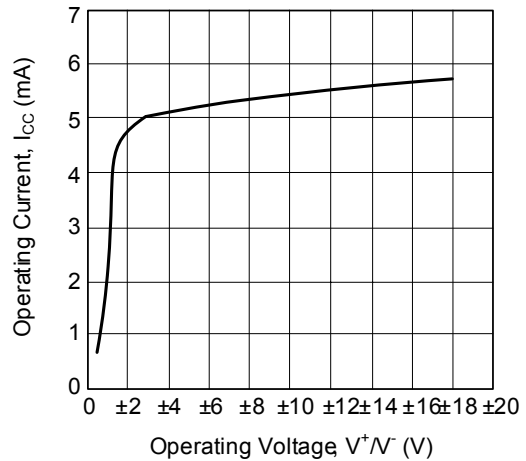
Input Bias Current vs. Temperature
($V^+/V^- = \pm 15V$)



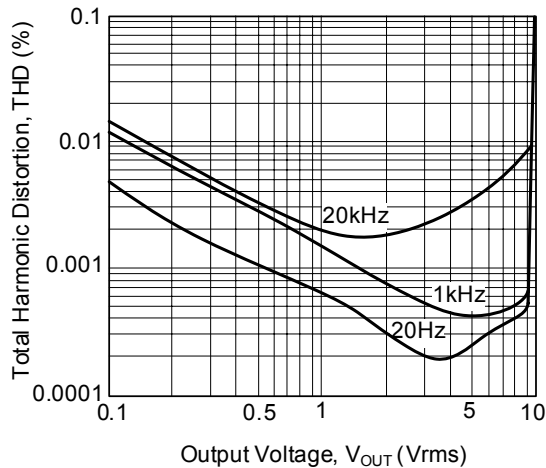
Maximum Output Voltage Swing vs. Operating Voltage
($R_L = 2k\Omega$, $T_a = 25^\circ C$)



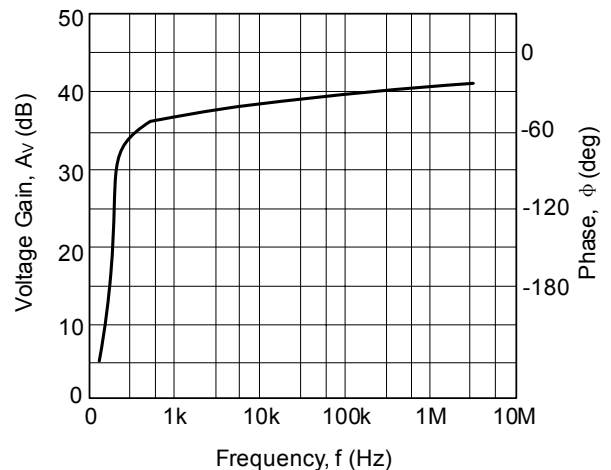
Operating Current vs. Operating Voltage
($T_a = 25^\circ C$)



Total Harmonic Distortion vs. Output Voltage
($V^+/V^- = \pm 15V$, Gain = 20dB, $R_L = 2k\Omega$)



Voltage Gain, Phase vs. Frequency
($V^+/V^- = \pm 15V$, $R_L = 2k\Omega$, 40dB/Amp, $T_a = 25^\circ C$)



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.