



MC4560

LINEAR INTEGRATED CIRCUIT

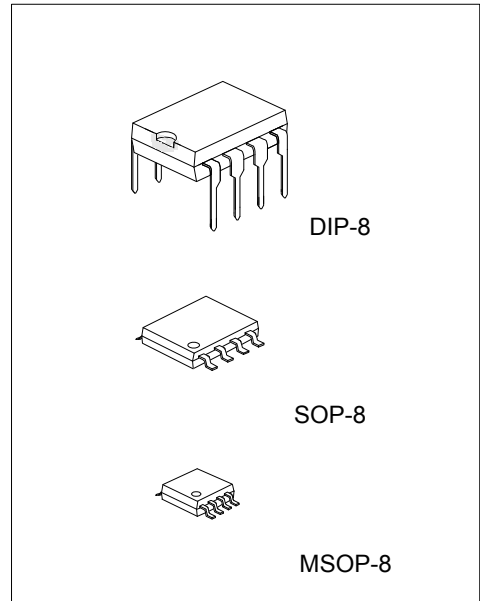
DUAL OPERATIONAL AMPLIFIER

DESCRIPTION

The UTC **MC4560** is a dual operational amplifier suitable for driving 20V peak-to-peak into 400Ω loads. It offer many features which provide the capability of wider bandwidth, and higher slew rate to make it ideal for active filters, data and telecommunications, and many instrumentation applications.

FEATURES

- *Operating Voltage (±4V~±18V)
- *Wide Gain Bandwidth Product. (10MHz typ.)
- *Slew Rate (4V / μs typ.)
- *Bipolar Technology



ORDERING INFORMATION

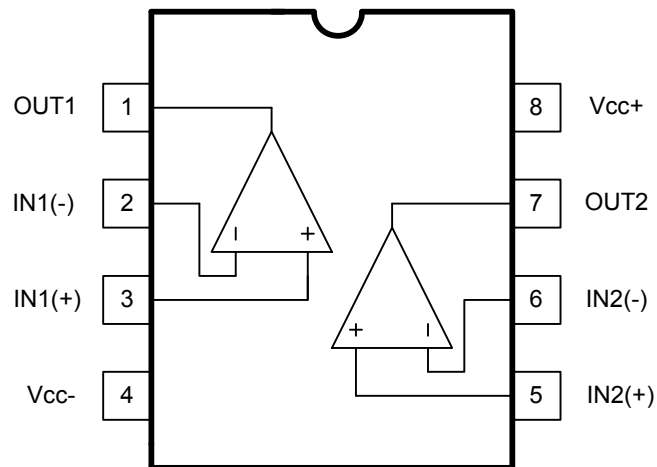
Ordering Number		Package	Packing
Lead Free	Halogen Free		
MC4560L-D08-T	MC4560G-D08-T	DIP-8	Tube
MC4560L-S08-R	MC4560G-S08-R	SOP-8	Tape Reel
MC4560L-SM1-R	MC4560G-SM1-R	MSOP-8	Tape Reel

<p>MC4560G-D08-T</p> <p>(1)Packing Type (2)Package Type (3)Green Package</p>	<p>(1) T: Tube, R: Tape Reel (2) D08: DIP-8, S08: SOP-8, SM1: MSOP-8 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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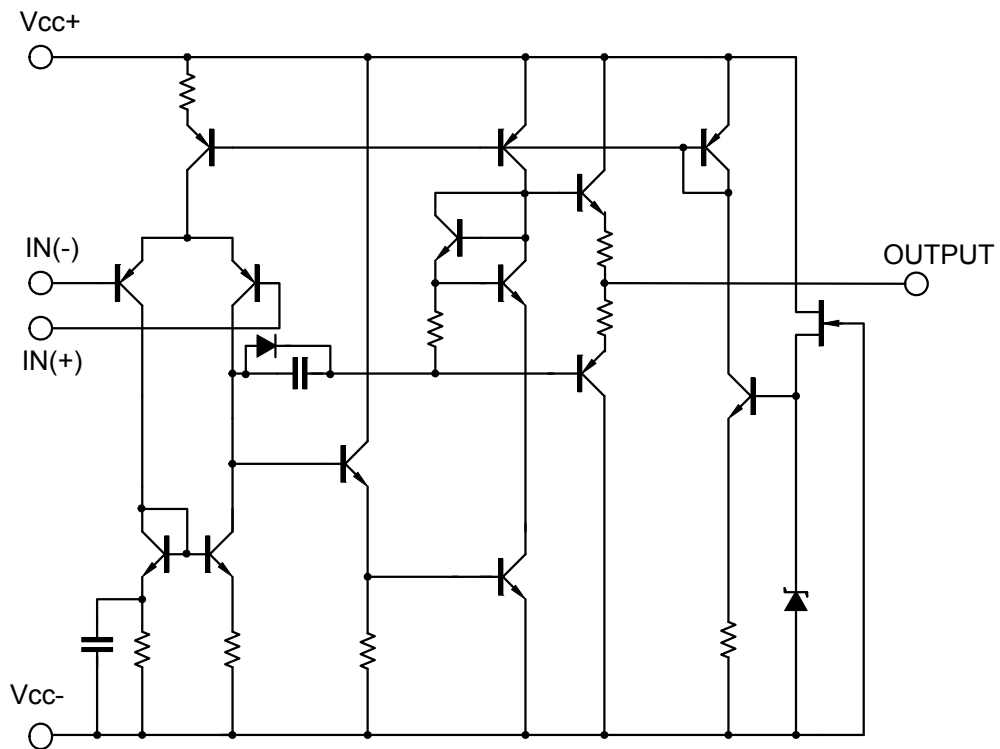
MARKING

DIP-8	SOP-8 / MSOP-8
<p>Date Code L: Lead Free G: Halogen Free Lot Code</p>	<p>Date Code L: Lead Free G: Halogen Free Lot Code</p>

■ PIN CONFIGURATION



■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V+/V-	± 18	V
Differential Input Voltage		$V_{I(\text{DIFF})}$	± 30	V
Input Voltage		V_{IN}	± 15 (Note1)	V
Power Dissipation	DIP-8	P_D	500	mW
	SOP-8		300	mW
	MSOP-8		250	mW
Operating Temperature Range		T_{OPR}	-20 ~ +75	$^\circ\text{C}$
Storage Temperature Range		T_{STG}	-40 ~ +125	$^\circ\text{C}$

Note: 1. The absolute maximum input voltage is equal to the supply voltage in case supply voltage less than $\pm 15\text{V}$.

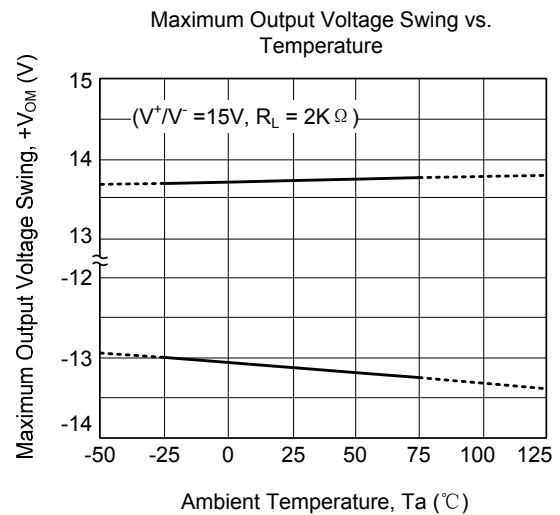
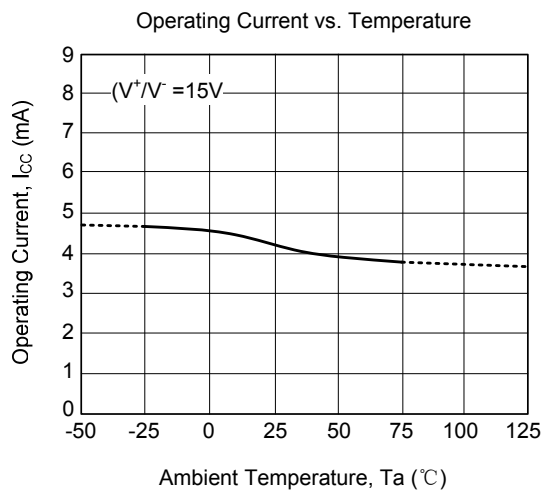
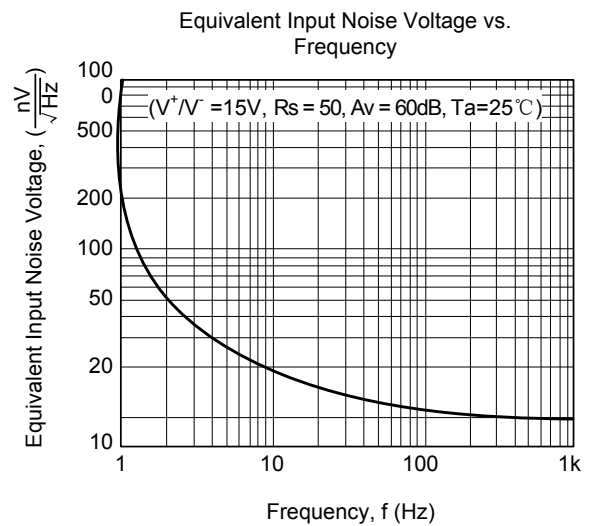
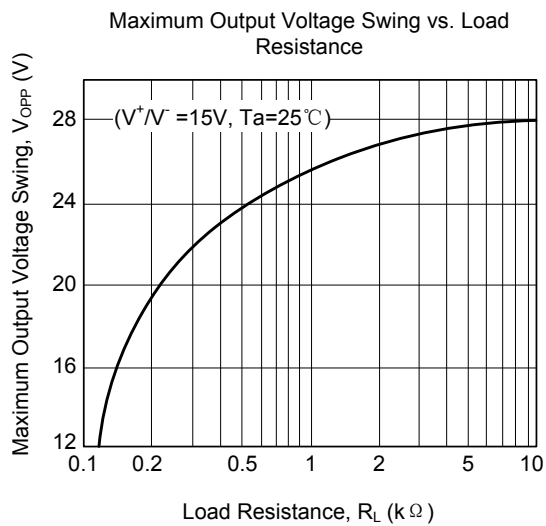
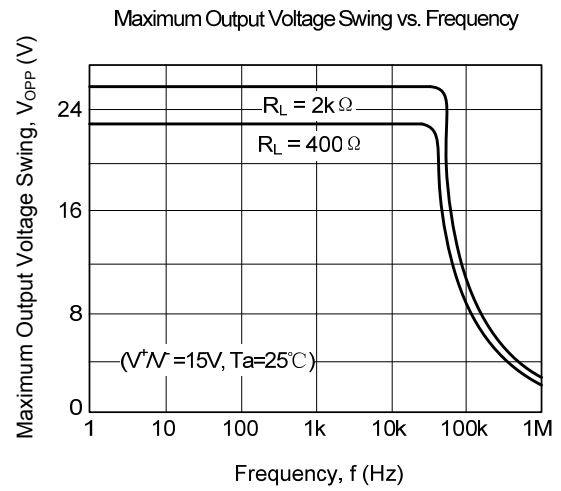
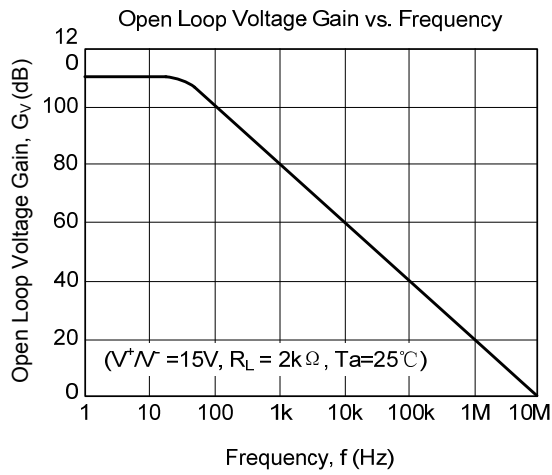
2. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

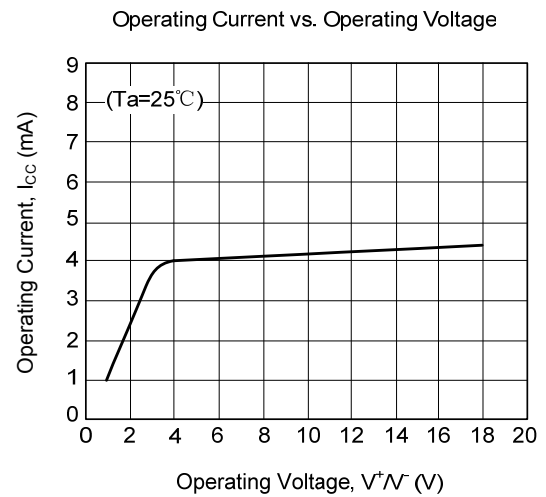
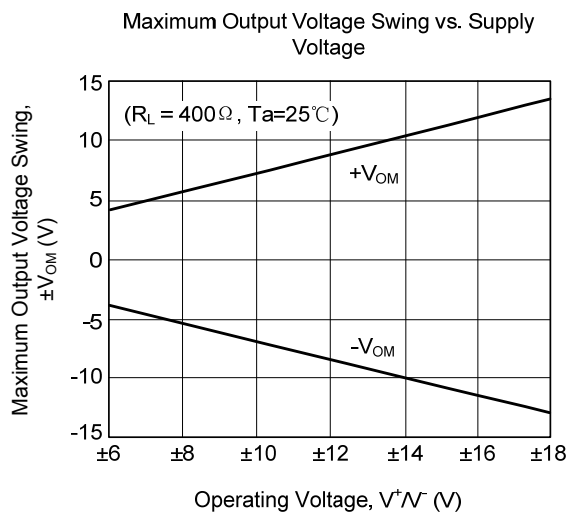
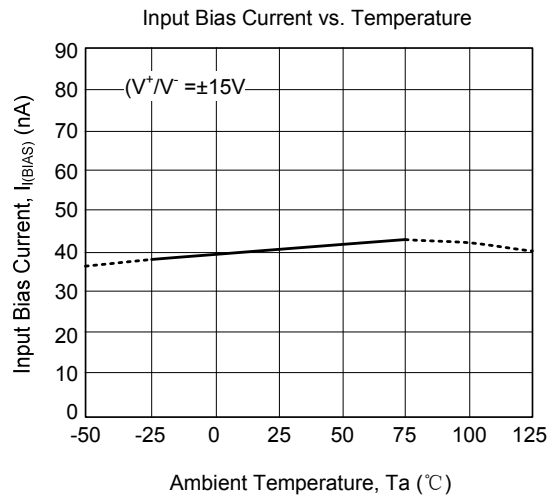
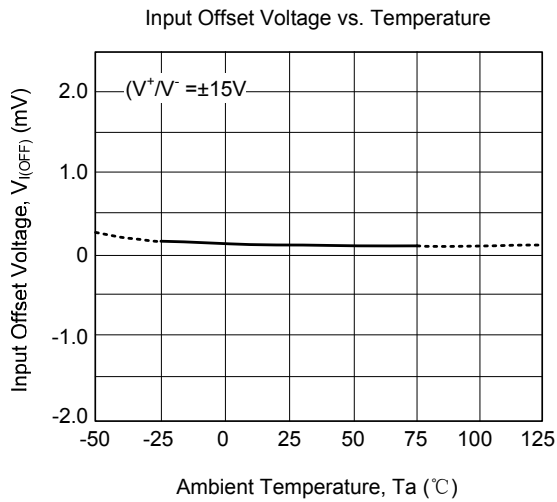
■ ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$, $V^+/V^- = \pm 15\text{V}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input offset voltage	$V_{I(\text{OFF})}$	$R_s \leq 10\text{k}\Omega$		0.5	6	mV
Input offset current	$I_{I(\text{OFF})}$			5	200	nA
Input bias current	$I_{I(\text{BIAS})}$			40	500	nA
Input Resistance	R_{IN}		0.3	5		$\text{M}\Omega$
Large Signal Voltage Gain	G_V	$R_L \geq 2\text{k}\Omega$, $V_{\text{OUT}} = \pm 10\text{V}$	86	100		dB
Maximum Output Voltage 1	V_{OM1}	$R_L \geq 2\text{k}\Omega$	± 12	± 14		V
Maximum Output Voltage 2	V_{OM2}	$I_{\text{OUT}} = 25\text{mA}$	± 10	± 11.5		V
Input Common Mode Voltage Range	V_{ICM}		± 12	± 14		V
Common Mode Rejection Ratio	CMR	$R_s \leq 10\text{k}\Omega$	70	90		dB
Supply Voltage Rejection Ratio	SVR	$R_s \leq 10\text{k}\Omega$	76.5	90		dB
Operating Current	I_{CC}			4.3	5.7	mA
Slew Rate	SR			4		$\text{V}/\mu\text{s}$
Gain Bandwidth Product	GBP			10		MHz
Equivalent Input Noise Voltage	eN	RIAA, $R_s = 2\text{k}\Omega$, 30kHz LPF		1.2		μV_{rms}

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



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