

MC14576A•MC14577A

MAXIMUM RATINGS*

Symbol	Parameter	Value	Unit
V _{DD}	DC Supply Voltage (Referenced to V _{SS})	-0.5 to +14	V
V _{in}	DC Input Voltage	V _{SS} -0.5 to V _{DD} +0.5	V
V _{out}	DC Output Voltage	V _{SS} -0.5 to V _{DD} +0.5	V
T _{stg}	Storage Temperature	-65 to +150	°C
T _L	Lead Temperature (10-Second Soldering)	260	°C

* Maximum Ratings are those values beyond which damage to the device may occur.

This device contains protection circuitry to guard against damage due to high static voltages or electric fields. However, precautions must be taken to avoid applications of any voltage higher than maximum rated voltages to this high-impedance circuit. For proper operation, V_{in} and V_{out} should be constrained to the range V_{SS} ≤ (V_{in} or V_{out}) ≤ V_{DD}.

Unused inputs must always be tied to an appropriate voltage level (e.g., either V_{SS} or V_{DD}). Unused outputs must be left open.

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ELECTRICAL CHARACTERISTICS (T_A=25°C, Reference Figures 1 and 2, R_L=150 Ω Unless Otherwise Indicated)

Symbol	Parameter	Test Condition	V _{DD} V	V _{SS} V	Guaranteed Limit	Unit
V _{DD}	Power Supply Voltage Range (Referenced to V _{SS}) P Suffix F Suffix		— —	— —	5.0 to 12 5.0 to 10	V
I _{DD}	Maximum Power Supply Current (Per Package)	V _{in} = 0 V, R _L = ∞ (open)	+5.0	-5.0	40	mA
N	Maximum Output Noise	V _{in} = 0 V, BW = 30 Hz to 25 MHz	+5.0	-5.0	250	μV RMS
A _v	Closed-Loop Voltage Gain	V _{in} = 2.0 V p-p, f = 4.43 MHz	+5.0	-5.0	5.0 to 7.0	dB
BW	Bandwidth	V _{in} = 2.0 V p-p, A _v within ±3.0 dB of the gain at 4.43 MHz	+5.0	-5.0	10	MHz
V _{out}	Minimum Output Voltage Swing	V _{in} = 4.0 V p-p, f = 10 MHz V _{in} = 1.5 V p-p, f = 5.0 MHz	+5.0 +2.5	-5.0 -2.5	3.5 2.0	V p-p
—	Maximum Differential Gain	V _{in} = 300 mV p-p biased from -0.5 to +0.5 V, f = 4.43 MHz	+5.0	-5.0	3.0	%
—	Maximum Differential Phase	V _{in} = 300 mV p-p biased from -0.5 to +0.5 V, f = 4.43 MHz	+5.0	-5.0	3.0	Degrees
PSRR	Minimum Power Supply Rejection Ratio, V _{DD} or V _{SS} pins	V _{in} = 0 V, ΔV _{DD} or ΔV _{SS} = 400 mV p-p @ 100 kHz	+5.0	-5.0	43	dB
—	Minimum Channel Separation	V _{in} = 1.0 V p-p, f = 4.43 MHz	+5.0	-5.0	40	dB
C _{in}	Maximum Input Capacitance	V _{in} = 1.0 V p-p, f = 4.43 MHz	+5.0	-5.0	TBD	pF
R _{in}	Minimum Input Resistance, all Inputs except Input A- and Input B- of the MC14576A		+5.0	-5.0	10 ⁷ **	Ω

**Typical value only; not guaranteed.

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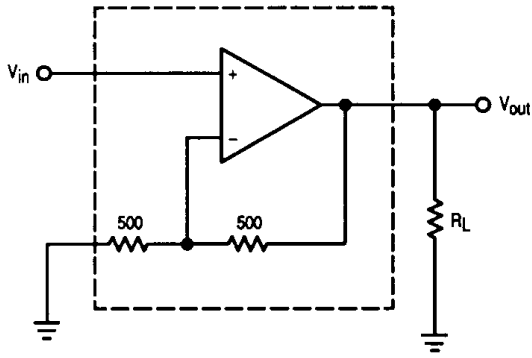


Figure 1. MC14576A Test Circuit

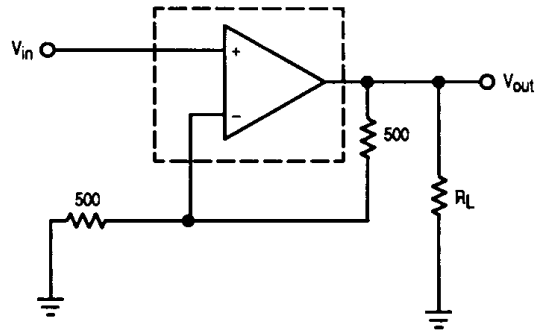


Figure 2. MC14577A Test Circuit

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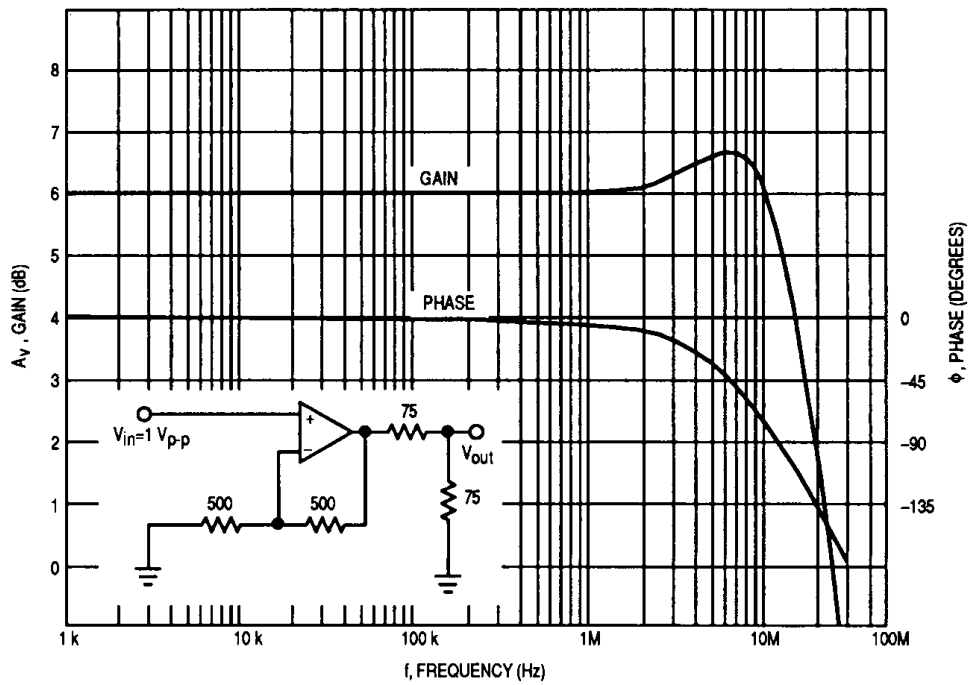


Figure 3. Typical Gain/Phase-Frequency Response (Not Guaranteed)

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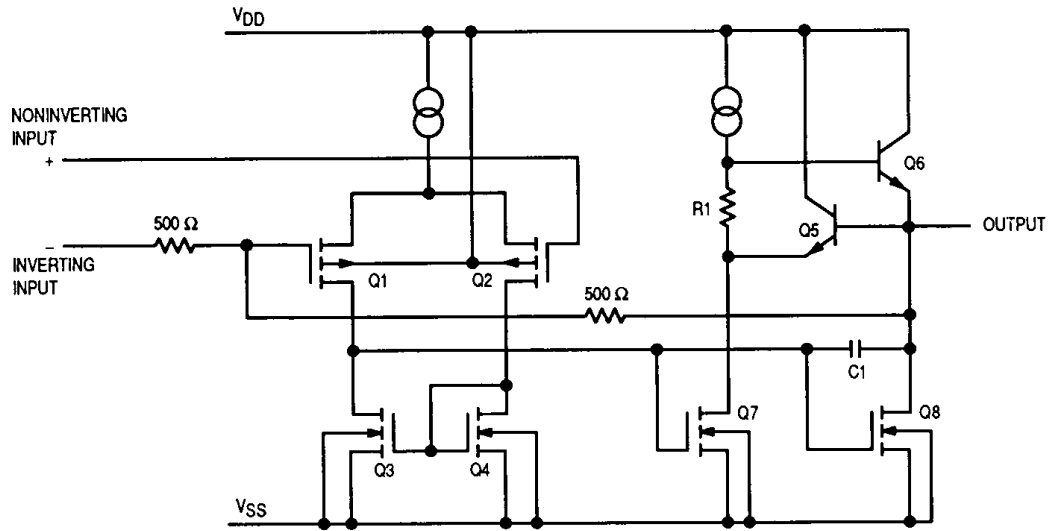


Figure 4. MC14576A Schematic

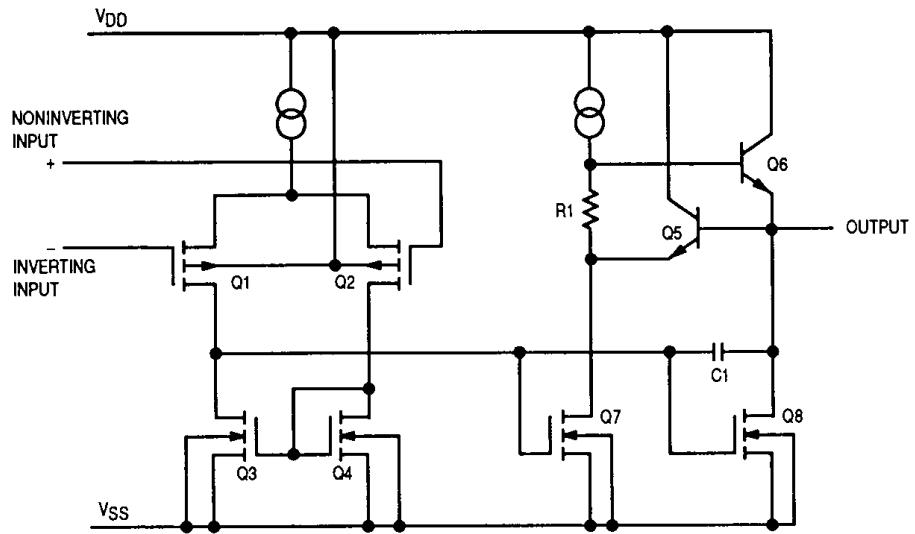


Figure 5. MC14577A Schematic

APPLICATIONS

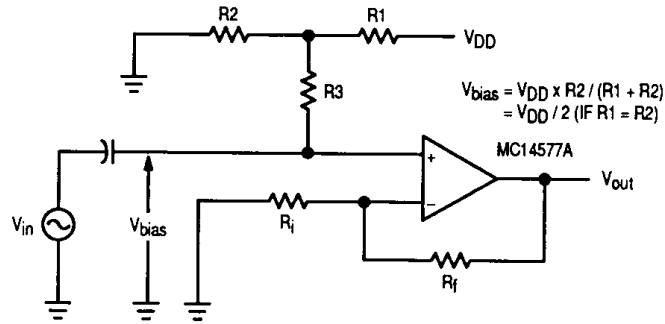


Figure 6. AC-Coupled Noninverting Amplifier with Single-Supply Operation

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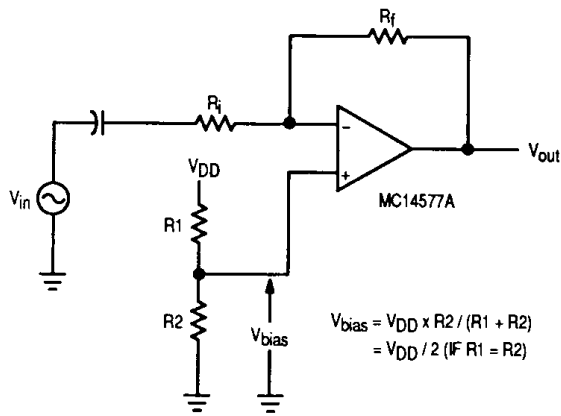


Figure 7. AC-Coupled Inverting Amplifier with Single-Supply Operation

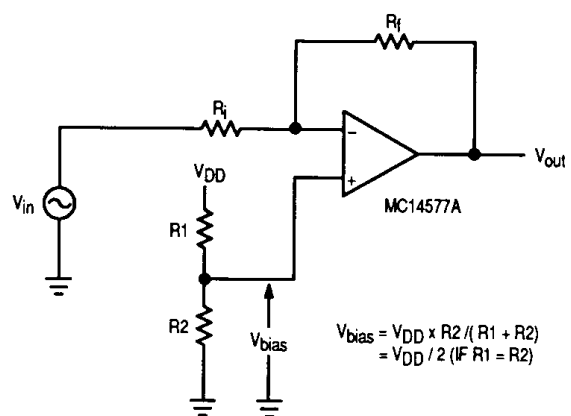


Figure 8. DC-Coupled Inverting Amplifier with Single-Supply Operation

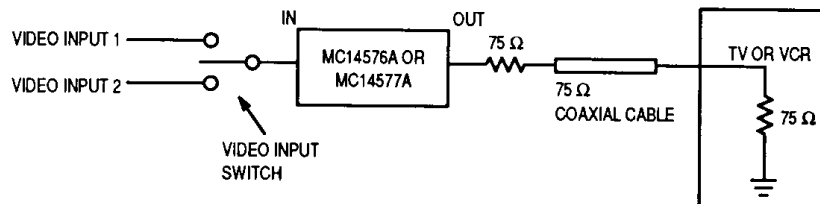


Figure 9. Typical Application of MC14576/77A

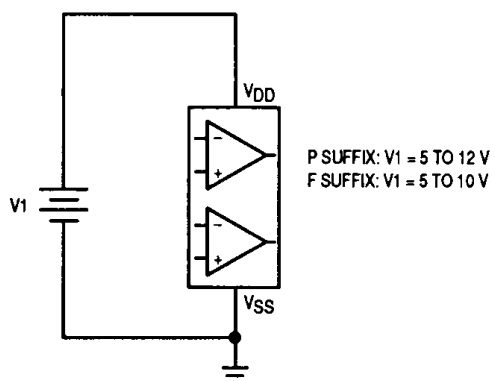


Figure 10. Single-Supply Operation

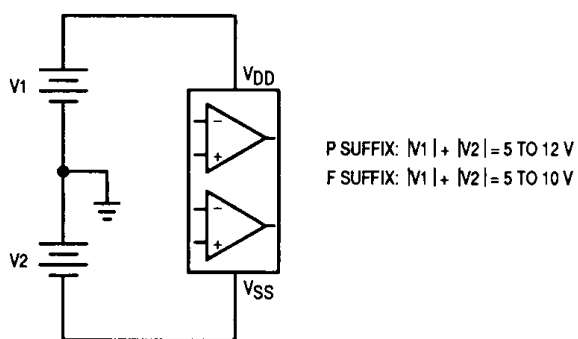


Figure 11. Dual- or Split-Supply Operation

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Operational Amplifiers/Comparators

	Page No.
MC14471 Low-Power Comparators plus Alarm Driver Circuitry	4-3
MC14573 Quad Programmable Op Amp	4-8
MC14574 Quad Programmable Comparator	4-8
MC14575 Programmable Dual Op Amp/Dual Comparator	4-8
MC14576A Dual Video Amplifier	4-17
MC14577A Dual Video Amplifier	4-17
MC14578 Micro-Power Comparator plus Voltage Follower	4-23

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SELECTOR GUIDE

Function	Quantity Per Package	Single Supply Voltage Range	Dual Supply Voltage Range	Frequency Range	Device Number
Operational Amplifiers	4	3 to 15 V	± 1.5 to ± 7.5 V	DC to ~1 MHz	MC14573
Video Amplifiers	2	5 to 12 V*	± 2.5 to ± 6 V*	up to 10 MHz	MC14576A MC14577A
Comparators	4	3 to 15 V	± 1.5 to ± 7.5 V	DC to ~1 MHz	MC14574
Micro-Power Comparator	1	3.5 to 14 V	± 1.75 to ± 7 V	—	MC14578
Low-Power Comparators	2	6 to 12 V	—	—	MC14471
Operational Amplifiers and Comparators	2 and 2	3 to 15 V	± 1.5 to ± 7.5 V	DC to ~1 MHz	MC14575

*5 to 10 V for surface-mount package.

* ± 2.5 to ± 5 V for surface-mount package.