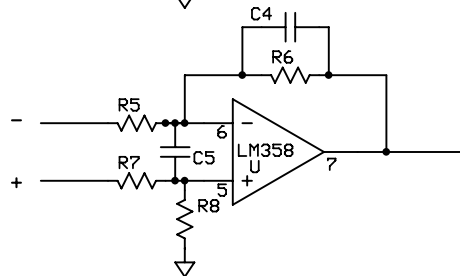
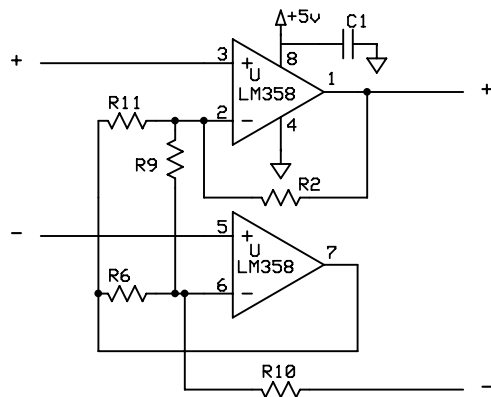


Inverting Amplifier
 $V_{out} = R2/R1 * V_{in}(-)$



Non-Inverting Amplifier
 $V_{out} = (R1+R2)/R1 * V_{in}(+)$

DUAL OP AMP
 Populate as needed

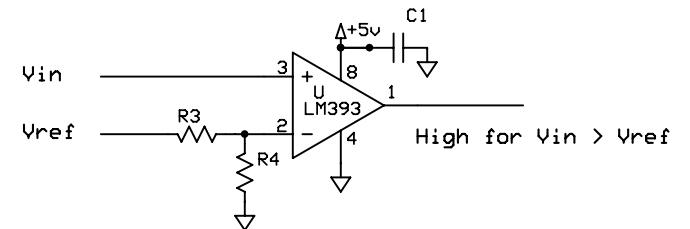


N1EKV DIFFERENTIAL AMP

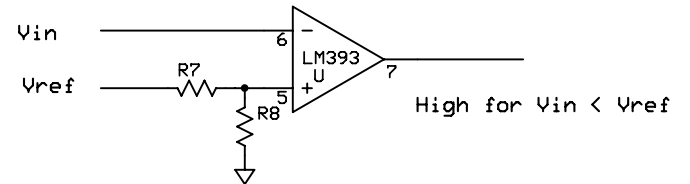
$R2 = R10$

$R6 = R11$

$R9 = \text{Gain Adjust}$



High for $V_{in} > V_{ref}$



High for $V_{in} < V_{ref}$

DUAL COMPARATOR
 Populate as needed

NOTES:

Pinout is good for nearly all dual op-amps and comparators.

LM358⁺ is good, cheap op-amp, and LM393 is good, cheap comparator. Many higher performance types are available.

See AN-20 at www.national.com

"An Applications Guide to Op Amps"

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W1GHZ	Rev 1.1	Page # or name
	1/20/2005	