MC1710C

DIFFERENTIAL COMPARATOR

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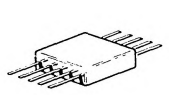
. . . designed for use in level detection, low-level sensing, and memory applications.



F SUFFIX
CERAMIC PACKAGE
CASE 606
TO-91

L SUFFIX
CERAMIC PACKAGE
CASE 632
TO-116

Lead 4 connected to case

G SUFFIX
METAL PACKAGE
CASE 601
TO-99

Typical Amplifier Features:

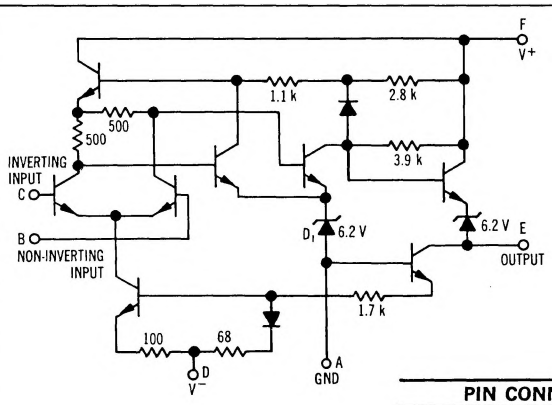
- Differential Input Characteristics:
  Input Offset Voltage = 1.5 mV
  Offset Voltage Drift = 5.0 μV/°C
- Fast Response Time — 40 ns
- Output Compatible with All Saturating Logic Forms
  V_{out} = +3.2 V to -0.5 V typical
- Low Output Impedance — 200 ohms

MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

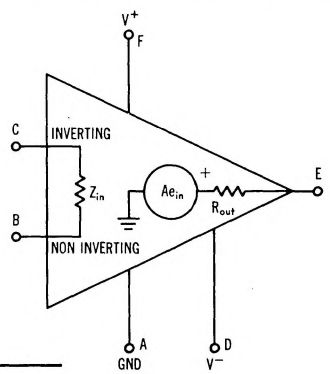
Rating	Symbol	Value	Unit
Power Supply Voltage	V^+ V^-	+14 -7.0	Vdc Vdc
Differential Input Signal	V_{in}	±5.0	Volts
Common Mode Input Swing	CMV_{in}	±7.0	Volts
Peak Load Current	I_L	10	mA
Power Dissipation (package limitation) Metal Can Derate above 25°C Flat Package Derate above 25°C Plastic Package Derate above 25°C	P_D	 680 4.6 500 3.3 400 3.3	 mW mW/°C mW mW/°C mW mW/°C
Operating Temperature Range*	T_A	0 to +75	°C
Storage Temperature Range Metal Can and Flat Package Plastic Package	T_{stg}	 -65 to +150 -65 to +125	°C

*For full temperature range (-55°C to + 125° C) and characteristic curves, see MC1710 data sheet.

CIRCUIT SCHEMATIC



EQUIVALENT CIRCUIT



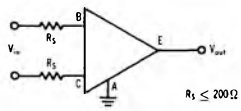
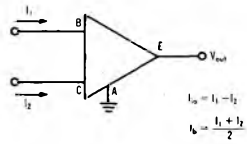
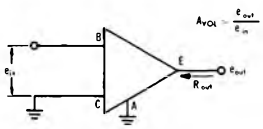
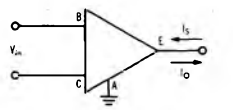
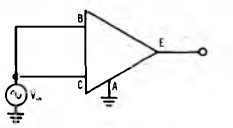
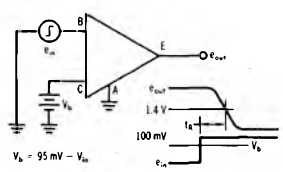
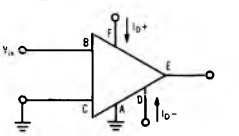
PIN CONNECTIONS

Schematic	A	B	C	D	E	F
"G" Package	1	2	3	4	7	8
"F" Package	1	2	3	5	6	8
"L" Package	2	3	4	6	9	11

See Packaging Information Section for outline dimensions.

See current MCC1710/1710C data sheet for standard linear chip information.

ELECTRICAL CHARACTERISTICS ($V^+ = +12$ Vdc, $V^- = -6$ Vdc, $T_A = 25°C$ unless otherwise noted)

Characteristic Definitions	Characteristic	Symbol	Min	Typ	Max	Unit
	Input Offset Voltage V_{out} = 1.4 Vdc, T_A = 25°C V_{out} = 1.5 Vdc, T_A = 0°C V_{out} = 1.2 Vdc, T_A = +70°C	V_{io}	- - -	1.5 - -	5.0 6.5 6.5	mVdc
	Temperature Coefficient of Input Offset Voltage	TC_{Vio}	-	5.0	-	µV/°C
	Input Offset Current V_{out} = 1.4 Vdc, T_A = 25°C V_{out} = 1.5 Vdc, T_A = 0°C V_{out} = 1.2 Vdc, T_A = +70°C	I_{io}	- - -	1.0 - -	5.0 7.5 7.5	µAdc
	Input Bias Current V_{out} = 1.4 Vdc, T_A = 25°C V_{out} = 1.5 Vdc, T_A = 0°C V_{out} = 1.2 Vdc, T_A = -70°C	I_b	- - -	15 25 -	25 40 40	µAdc
	Voltage Gain T_A = 25°C T_A = 0 to +70°C	A_{VOL}	1000 800	1500 -	- -	V/V
	Output Resistance	R_{out}	-	200	-	ohms
	Differential Voltage Range	V_{in}	±5.0	-	-	Vdc
	Positive Output Voltage $V_{in} \geq$ 5.0 mV, $0 \leq I_O \leq$ 5.0 mA	V_{OH}	2.5	3.2	4.0	Vdc
	Negative Output Voltage $V_{in} \geq$ -5.0 mV	V_{OL}	-1.0	-0.5	0	Vdc
	Output Sink Current $V_{in} \geq$ -5.0 mV, $V_{out} \geq 0$ T_A = 25°C T_A = 0°C	I_s	 1.6 0.5	 2.5 -	 - -	mAdc
	Input Common Mode Range V^- = -7.0 Vdc	CMV_{in}	±5.0	-	-	Volts
	Common Mode Rejection Ratio $R_S \leq$ 200 Ω	CM_{rej}	70	100	-	dB
	Propagation Delay Time For Positive and Negative Going Input Pulse	t_{pd}	- -	40	-	ns
	Power Supply Current $V_{out} \leq 0$ Vdc	I_D^+ I_D^-	- -	6.4 5.5	9.0 7.0	mAdc
	Power Consumption		-	110	150	mW