

Low Power Dual Comparators

GENERAL DESCRIPTION

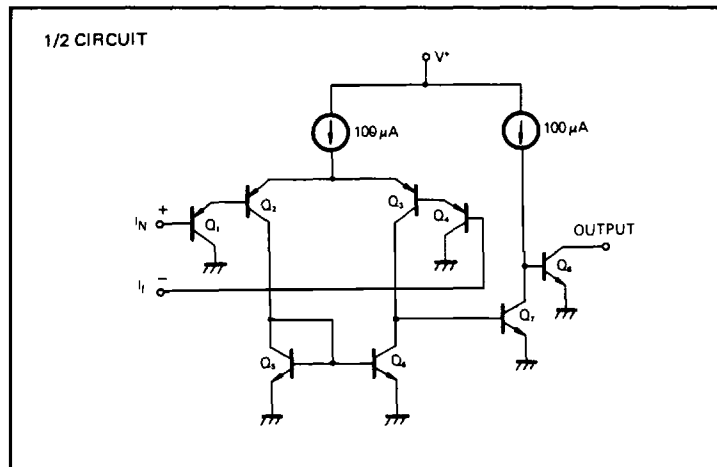
The μ PC277/393 are dual comparators which are designed to operate from a single power supply over a wide range of voltage. Operation from split power supplies is also possible and the power supply current drain is very low. Further advantage, the input common-mode voltage includes ground, even though operated from a single power supply voltage.

Two kinds of ICs are available according to reliability, the μ PC277 for industry, the μ PC393 for commercial.

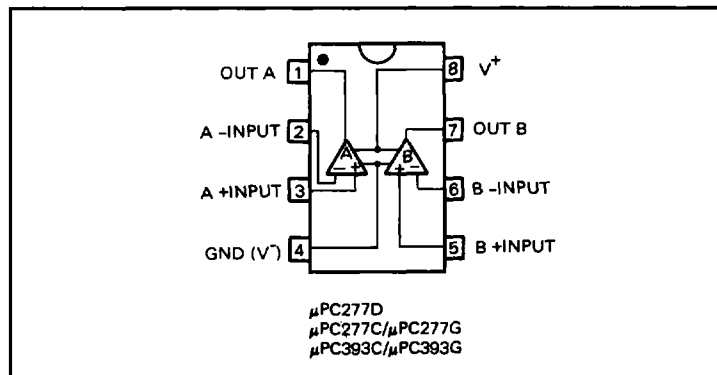
FEATURES

- Input Common-Mode Voltage Range Includes Ground
- Wide Power Supply Range
Single Supply 2 V to 36 V DC
Dual Supplies ± 1 V to ± 18 V DC
- Low Power Consumption
- Compatible with All Forms Logic
- LM393 Direct Replacement

EQUIVALENT CIRCUIT



CONNECTION DIAGRAM (Top View)



ORDERING INFORMATION

μ PC277D 8 pin Ceramic DIP (Dual In-Line Package)
μ PC277C/ μ PC393C 8 pin Plastic Molded DIP (Dual In-Line Package)
μ PC277G/ μ PC393G 8 pin Plastic Molded Flat Package (MINI FLAT IC)

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

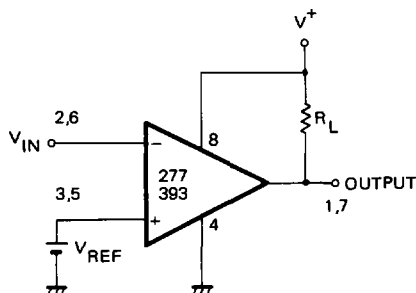
PARAMETER		μPC277	μPC393	UNIT
Voltage between V ⁺ and V ⁻		36	36	V
Differential Input Voltage		36	36	V
Common Mode Input Voltage		-0.3 to +36	-0.3 to +36	V
Power Dissipation*	D Package	500	—	mW
	C Package	350	350	
	G Package	440	440	
Output Short Circuit to Ground		Indefinite	Indefinite	s
Operating Temperature Range	D Package	-20 to +80	—	°C
	C or G Package	-20 to +70	0 to +70	
Storage Temperature Range	D Package	-55 to +150	—	°C
	C or G Package	-55 to +125	-55 to +125	

* See thermal information in chapter 11.

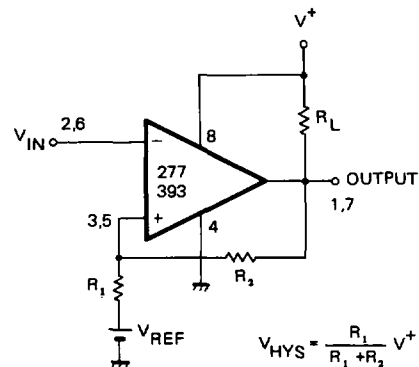
ELECTRICAL CHARACTERISTICS (Ta = 25°C, V⁺ = 5V)

CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Input Offset Voltage		2	5	mV	Vo = 1.4 V, VREF = 1.4 V, Rs = 0 Ω
Input Bias Current		25	250	nA	Vo ≈ 1.4 V
Input Offset Current		5	50	nA	Vo ≈ 1.4 V
Common Mode Input Voltage Range	0		V ⁺ - 1.5	V	
Supply Current		0.6	1	mA	RL = ∞
Voltage Gain		200		V/mV	RL = 15 kΩ
Large Signal Response Time		1.3		μs	RL = 5.1 kΩ, VRL = 5 V
Output Sink Current	6	16		mA	VIN(-) = 1 V, VIN(+) = 0 V, Vo ≤ 1.5 V
Saturation Voltage		0.2	0.4	V	VIN(-) = 1 V, VIN(+) = 0 V, Isink = 3 mA
Output Leakage Current		0.1		nA	VIN(+) = 1 V, VIN(-) = 0 V, Vo = 5 V

TYPICAL APPLICATIONS



$$V_{REF} = 0 \sim V^+ - 1.5 \text{ V}$$



$$V_{HYS} = \frac{R_1}{R_1 + R_2} V^+$$

$$V_{REF} = 0 \sim V^+ - 1.5 \text{ V}$$

TYPICAL PERFORMANCE CHARACTERISTICS (Ta=25 °C)

