

General Purpose Operational Amplifiers

GENERAL DESCRIPTION

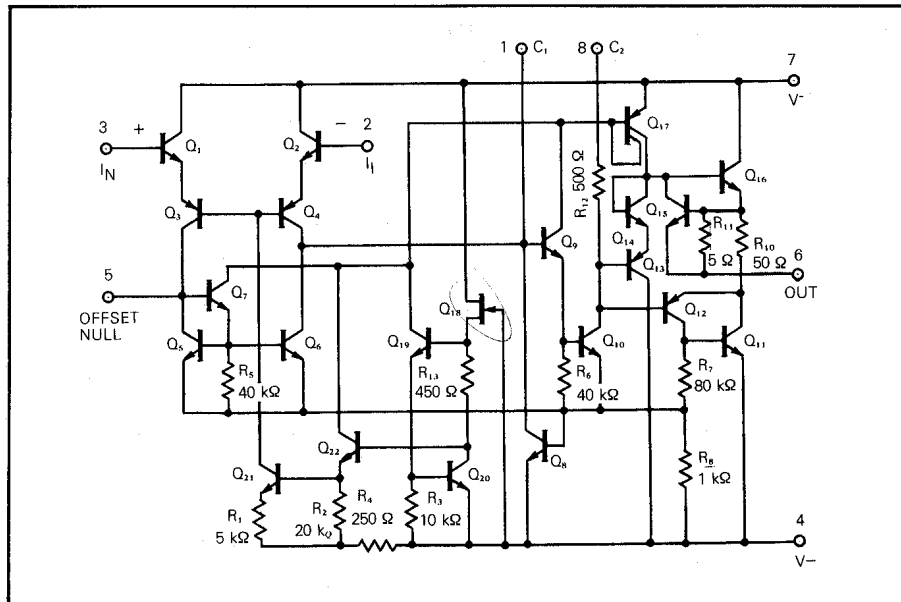
μ PC157/301A are general purpose operational amplifiers which features higher performance than that of 709 type. This amplifier offers many features which make its application nearly foolproof: overload protection on the input and output, no latch up when the common mode range is exceeded, freedom from oscillations with a single 30 pF capacitor. Frequency compensation can be tailored to the individual circuit with single external capacitor.

Two kinds of ICs are available according to reliability, the μ PC157 for industry, the μ PC301A for commercial.

FEATURES

- Wide Common Mode and Differential Voltage Range
- Short Circuit Protection
- No Latch Up
- Offset Voltage Null Capability
- Frequency and Transient Response Characteristics Adjustable
- LM301A Direct Replacement

EQUIVALENT CIRCUIT



ORDERING INFORMATION

μ PC157A



8 pin Metal Can Package

μ PC157D



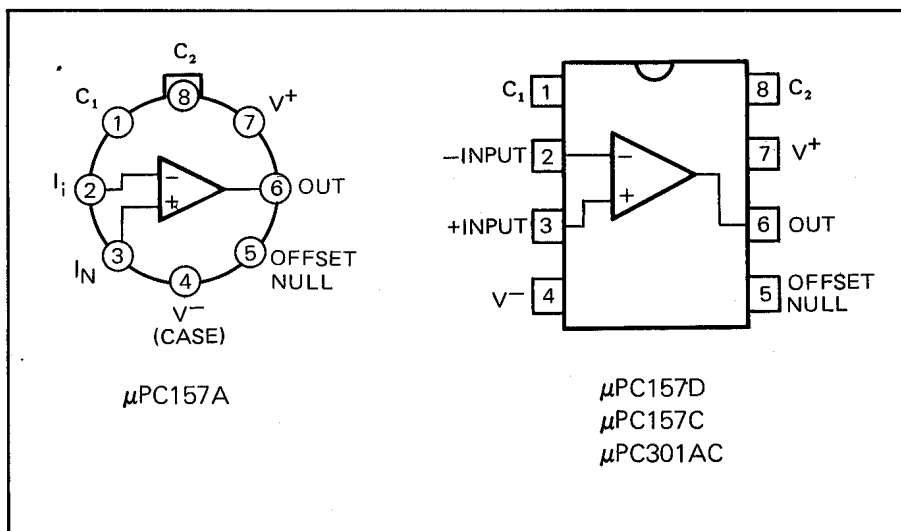
8 pin Ceramic DIP
(Dual In-Line Package)

μ PC157C/ μ PC301AC



8 pin Plastic Molded DIP
(Dual In-Line Package)

CONNECTION DIAGRAM (Top View)



ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

PARAMETER			μPC157	μPC301A	UNIT
Voltage between V ⁺ and V ⁻			36	36	V
Power Dissipation*	A or D Package		500	—	mW
	C Package		350	350	
Differential Input Voltage			±30	±30	V
Input Voltage (Note 1)			±15	±15	V
Output Short Circuit Duration			Indefinite	Indefinite	s
Operating Temperature Range	A or D Package		-20 to +80	—	°C
	C Package		-20 to +70	0 to +70	
Storage Temperature Range	A Package		-65 to +175	—	°C
	D Package		-55 to +150	—	
	C Package		-55 to +125	-55 to +125	

Note 1: For supply voltages less than ±15 V, the absolute maximum input voltage is equal to the supply voltage.

* See thermal information in Chapter 11.

ELECTRICAL CHARACTERISTICS (Ta = 25°C, V[±] = ±5 V to ±15 V)

CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Input Offset Voltage		2.0	7.5	mV	R _S ≤ 50 kΩ
Average Input Offset Voltage Drift		6.0	30	μV/°C	R _S ≤ 50 kΩ, V [±] = ±15 V
Input Offset Current		3	50	nA	
Average Input Offset Current Drift		0.02	0.6	nA/°C	V [±] = ±15 V
Input Bias Current		70	250	nA	
Input Impedance	0.5	2		MΩ	
Large Signal Voltage Gain	25,000	160,000			V [±] = ±15 V, V _O = ±10 V, R _L ≥ 2 kΩ
Supply Current		1.8	3	mA	
Output Voltage Swing	±12	±14		V	V [±] = ±15 V, R _L ≥ 10 kΩ
Output Voltage Swing	±10	±13		V	V [±] = ±15 V, R _L ≥ 2 kΩ
Common-Mode Input Voltage Range	±12			V	V [±] = ±15 V
Common-Mode Rejection Ratio	70	90		dB	R _S ≤ 50 kΩ
Supply Voltage Rejection Ratio	70	90		dB	R _S ≤ 50 kΩ

Standard Compensation and
Offset Balance Circuit

