



# PM-741

## COMPENSATED OPERATIONAL AMPLIFIER

Precision Monolithics Inc.

### FEATURES

- Industry Standard 741 Specifications
- Internal Frequency Compensation
- Continuous Short-Circuit Protection
- Silicon-Nitride Passivation
- Low Noise

### ORDERING INFORMATION †

$T_a = +25^\circ\text{C}$ $V_{os} \text{ MAX}$ (mV)	PACKAGE	OPERATING TEMPERATURE RANGE
	TO-99	
6.0	PM741CJ	COM

† Burn-in is available on commercial and industrial temperature range parts in CerDIP, plastic DIP, and TO-can packages. For ordering information, see PMI's Data Book, Section 2.  
Also available with JAN38510 processing. Refer to 10101 slash sheet for electrical/processing parameters.

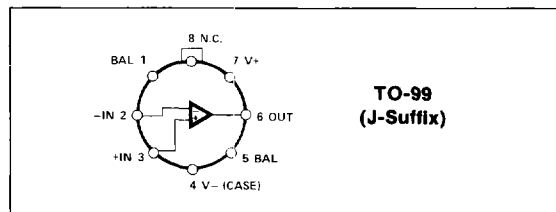
MIL-M-38510-10101BGA	PM741AJ5
MIL-M-38510-10101BGC	PM741AJ1
MIL-M-38510-10101SGA	PM741"S"AJ5*

\* Undergoing Part I qualification. Consult PMI for availability.

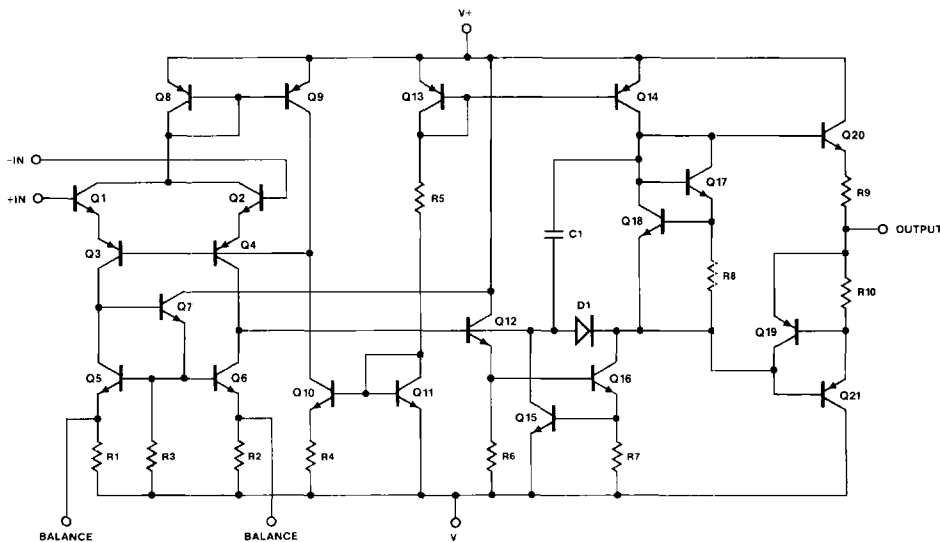
### GENERAL DESCRIPTION

The PM-741 series of internally-compensated operational amplifiers provide industry-standard 741 specifications. In addition, Precision Monolithics' exclusive Silicon-Nitride "Triple Passivation" process provides high reliability and long-term stability of parameters. For higher performance general purpose op amps, refer to the OP-02 data sheet. See the OP-04/OP-14 data sheet for duals.

### PIN CONNECTIONS



### SIMPLIFIED SCHEMATIC



OPERATIONAL AMPLIFIERS/BUFFERS

**ABSOLUTE MAXIMUM RATINGS** (Note 1)

Supply Voltage .....	±18V
Differential Input Voltage .....	±30V
Input Voltage .....	Supply Voltage
Output Short-Circuit Duration .....	Indefinite

Storage Temperature Range .....	-65°C to +150°C
Lead Temperature Range (Soldering, 60 sec) .....	+300°C
Operating Temperature Range .....	0°C to +70°C

PACKAGE TYPE	$\theta_{JA}$ (Note 1)	$\theta_{JC}$	UNITS
TO-99 (J)	150	18	°C/W

**NOTES:**

1.  $\theta_{JA}$  is specified for worst case mounting conditions, i.e.,  $\theta_{JA}$  is specified for device in socket for TO package.

**ELECTRICAL CHARACTERISTICS** at  $T_A = 25^\circ\text{C}$ ,  $V_S = \pm 15\text{V}$ , unless otherwise noted.

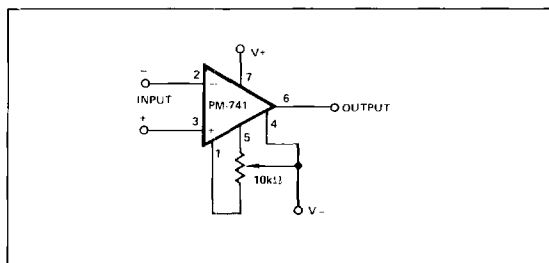
PARAMETER	SYMBOL	CONDITIONS	PM-741			PM-741C			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
Input Offset Voltage	$V_{OS}$	$R_S \leq 10\text{k}\Omega$	—	—	5.0	—	—	6.0	mV
Input Offset Current	$I_{OS}$		—	—	200	—	—	200	nA
Input Bias Current	$I_B$		—	—	500	—	—	500	nA
Input Resistance	$R_{IN}$	(Note 1)	0.3	—	—	0.3	—	—	M $\Omega$
Large-Signal Voltage Gain	$A_{VO}$	$R_L \geq 2\text{k}\Omega$ , $V_O = \pm 10\text{V}$	50,000	—	—	25,000	—	—	V/V
Supply Current	$I_{SY}$	$V_{OUT} = 0$	—	—	2.8	—	—	2.8	mA

**ELECTRICAL CHARACTERISTICS** at  $-55^\circ\text{C} \leq T_A \leq +125^\circ\text{C}$  for PM741,  $0^\circ\text{C} \leq T_A \leq +70^\circ\text{C}$  for PM741C,  $V_S = \pm 15\text{V}$ , unless otherwise noted.

PARAMETER	SYMBOL	CONDITIONS	PM-741			PM-741C			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
Input Offset Voltage	$V_{OS}$	$R_S \leq 10\text{k}\Omega$	—	—	6.0	—	—	7.5	mV
Input Offset Current	$I_{OS}$		—	—	500	—	—	300	nA
Input Bias Current	$I_B$		—	—	1.5	—	—	0.8	$\mu\text{A}$
Large-Signal Voltage Gain	$A_{VO}$	$R_L \geq 2\text{k}\Omega$ , $V_O = \pm 10\text{V}$	25,000	—	—	15,000	—	—	V/V
Output Voltage Swing	$V_O$	$R_L \geq 10\text{k}\Omega$ $R_L \geq 1\text{k}\Omega$	$\pm 12$ $\pm 10$	—	—	$\pm 12$ $\pm 10$	—	—	V
Input Voltage Range	IVR		$\pm 12$	—	—	$\pm 12$	—	—	V
Common-Mode Rejection Ratio	CMRR	$V_{CM} = \pm 10\text{V}$	70	—	—	70	—	—	dB
Power Supply Rejection Ratio	PSRR	$R_S \leq 10\text{k}\Omega$	—	—	142	—	—	142	$\mu\text{V/V}$

**NOTE:**

1. Guaranteed by design.

**TYPICAL OFFSET NULLING CIRCUIT**

**TYPICAL BURN-IN CIRCUIT**
