

## DESCRIPTION

The  $\mu$ A740 is a special purpose high performance operational amplifier utilizing a FET input stage for high input impedance and low input current.

The device features internal compensation, standard pinout, wide differential and common mode input voltage range, high slew rate and high output drive capability.

## FEATURES

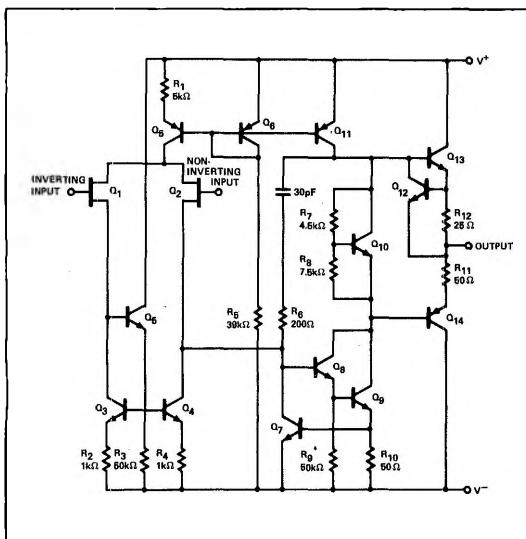
- 0.1 nA INPUT BIAS CURRENT
- INPUT AND OUTPUT PROTECTION
- OFFSET NULL CAPABILITY
- INTERNALLY COMPENSATED
- 6V/ $\mu$ sec SLEW RATE
- STANDARD PINOUT
- NO LATCH UP

## ABSOLUTE MAXIMUM RATING

Supply Voltage	$\pm 22$ V
Differential Input Voltage Range	$\pm 30$ V
Common Mode Input Voltage Range	$\pm V_S$
Power Dissipation (Note 1)	500mW
Operating Temperature Range	0°C to +70°C
Storage Temperature Range	-65°C to +150°C
Lead Temperature (Solder, 60 sec)	300°C
Output short Circuit Duration (Note 2)	Indefinite

1. Rating applies for case temperatures to +25°C; derate linearly at 6.5mW/°C for ambient temperatures above 75°C.
2. Short circuit may be to ground or either supply. Rating applies to +125°C case temperature or +75°C ambient temperature.

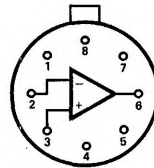
## EQUIVALENT CIRCUIT



## LINEAR INTEGRATED CIRCUITS

### PIN CONFIGURATION (Top View)

#### T PACKAGE

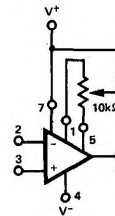


1. Offset Null
2. Inverting Input
3. Non-inverting Input
4.  $V^-$
5. Offset Null
6. Output
7.  $V^+$
8. NC

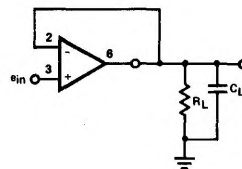
ORDER PART NOS.  $\mu$ A740T/ $\mu$ A740CT

### TEST CIRCUITS

#### OFFSET NULL CIRCUIT



#### VOLTAGE FOLLOWER CIRCUIT



**ELECTRICAL CHARACTERISTICS ( $V_S = \pm 15$  V,  $T_C = 25^\circ\text{C}$  unless otherwise specified)**

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Input Offset Voltage	$R_S \leq 100$ k $\Omega$		30		mV
Input Offset Current			60		pA
Input Current (either input)				0.1	2.0
Input Resistance			1,000,000		M $\Omega$
Large Signal Voltage Gain	$R_L \geq 2$ k $\Omega$ , $V_{out} = \pm 10$ V		1,000,000		
Output Resistance			75		$\Omega$
Output Short-Circuit Current			20		mA
Supply Current			4.2	3.0	mA
Power Consumption			126	240	mW
Slew Rate			6.0		V/ $\mu$ s
Unity Gain Bandwidth			1.0		MHz
Transient Response (Unity Gain)	$C_L \leq 100$ pF, $R_L = 2$ k $\Omega$ , $V_{in} = 100$ mV				
Risetime			300		ns
Overshoot				10	
The following specifications apply for $0^\circ\text{C} < T_A < +70^\circ\text{C}$					
Input Voltage Range			$\pm 12$		V
Common Mode Rejection Ratio			80		db
Supply Voltage Rejection Ratio			70		$\mu$ V/V
Large Signal Voltage Gain			500,000		
Output Voltage Swing	$R_L \geq 10$ k $\Omega$	$\pm 12$	$\pm 14$		V
	$R_L \geq 2$ k $\Omega$	$\pm 10$	$\pm 13$		V
Input Offset Voltage			30		mV
Input Offset Current			60		pA
Input Current (either input)			1.1	10	nA

**TYPICAL CHARACTERISTIC CURVES**

