

OPERATIONAL AMPLIFIER TAA241

The TAA241 is an operational amplifier for general purpose applications in instrumentation and control systems.

QUICK REFERENCE DATA		
Supply voltage (nominal)	+12 and -6.0	V
Differential open loop voltage gain (typ.)	3400	
Common mode rejection ratio (min.)	70	dB
Input resistance (typ.)	32	k Ω
Output resistance (typ.)	200	Ω
Input offset voltage (max.)	5.0	mV
Operating temperature range	0 to 70	$^{\circ}$ C

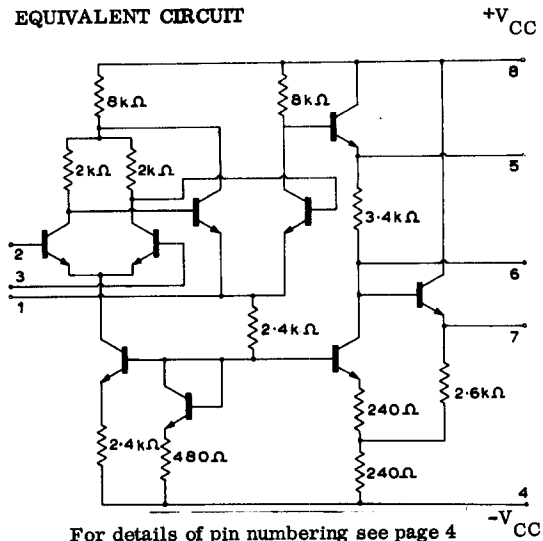
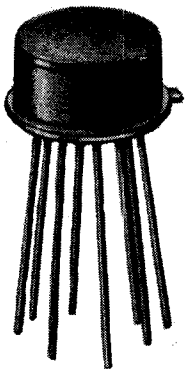
OUTLINE AND DIMENSIONS

Conforms to J. E. D. E. C. TO-99 (eight lead TO-5)

B. S. 3934 SO-44/SB8-1

For dimensions see page 4

EQUIVALENT CIRCUIT



RATINGS

Limiting values of operation according to the absolute maximum system.

Electrical

Supply between pins 8 and 4 (pin 8 positive)	21	V
Input voltage		
common mode	+1.5 to -6.0	V
differential mode	±5.0	V
Peak output current	50	mA
Power dissipation $T_{amb} \leq 70^{\circ}\text{C}$	300	mW

Temperature

T_{stg} min.	-65	$^{\circ}\text{C}$
T_{stg} max.	150	$^{\circ}\text{C}$
T_{amb} min. (operating)	0	$^{\circ}\text{C}$
T_{amb} max. (operating)	70	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated)

$V_{pos} = 12\text{V}$, $V_{neg} = -6.0\text{V}$

	Min.	Typ.	Max.	
Input offset voltage $R_s \leq 2.0\text{k}\Omega$	-	1.5	5.0	mV
Input offset current	-	0.5	2.0	μA
Input bias current	-	2.5	7.5	μA
Input resistance	10	32	-	$\text{k}\Omega$
Input voltage range	-4.0	-	+0.5	V
Common mode rejection ratio $R_s \leq 2.0\text{k}\Omega$, $f \leq 1.0\text{kHz}$	70	92	-	dB
Large signal voltage gain $R_L \geq 100\text{k}\Omega$, $V_{out} = \pm 5.0\text{V}$	2000	3400	-	←
Output resistance	-	200	600	Ω
Supply current $V_{out} = 0$	-	5.0	6.7	mA
Power consumption $V_{out} = 0$	-	90	120	mW



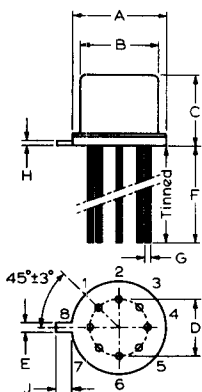
OPERATIONAL AMPLIFIER TAA241

ELECTRICAL CHARACTERISTICS (Over the temperature range 0 to 70°C)

	V _{pos} = 12V, V _{neg} = -6.0V			
	Min.	Typ.	Max.	
Input offset voltage R _s ≤ 2.0kΩ	-	-	6.5	mV
Average temperature coefficient of input offset voltage R _s = 50Ω	-	5.0	20	μV/degC
Input offset current	-	-	2.5	μA
Average temperature coefficient of input offset current T _{amb} = 25 to 70°C	-	4.0	10	nA/degC
T _{amb} = 25 to 0°C	-	6.0	20	nA/degC
Input bias current T _{amb} = 0°C	-	4.0	12	μA
Input resistance	6.0	18	-	kΩ
Common mode rejection ratio R _s ≤ 2.0kΩ, f ≤ 1.0kHz	65	86	-	dB
Supply voltage rejection ratio V _{pos} = 12V, V _{neg} = -6.0 to V _{pos} = 6.0V, V _{neg} = -3.0V, R _s ≤ 2.0kΩ	-	90	300	μV/V
Large signal voltage gain R _L ≥ 100kΩ, V _{out} = ±5.0V	1500	-	-	
Output voltage swing R _L ≥ 100kΩ	±5.0	±5.3	-	V
R _L ≥ 10kΩ	±3.5	±4.0	-	V
Supply current V _{out} = 0	-	5.0	7.0	mA
Power consumption V _{out} = 0	-	90	125	mW



OUTLINE AND DIMENSIONS (Conforms to J. E. D. E. C. TO-99)



	Millimetres		
	Min.	Nom.	Max.
A	8.64	8.90	9.40
B	7.75	8.15	8.51
C	-	-	5.33
D	-	5.08	-
E	0.71	0.79	0.86
F	12.7	-	-
G	-	0.45	-
H	-	0.4	-
J	0.74	0.85	1.0

Pins

1. Common and earth
2. Inverting input
3. Non-inverting input
4. Negative supply voltage

Pins

- | | |
|----------------------------|----------------|
| 5. Lead | } Frequency |
| 6. Lag | |
| 7. Output | } Compensation |
| 8. Positive supply voltage | |

SOLDERING AND WIRING RECOMMENDATIONS

1. Devices may be soldered directly into a circuit with a soldering iron at a maximum iron temperature of 245°C for a time of up to 10 seconds at least 1.5mm from the seal. At an iron temperature of 245°C to 400°C the maximum soldering time is 5 seconds at least 5mm from the seal.
2. These devices may be dip-soldered at a solder temperature of 245°C for a maximum soldering time of 5 seconds. The case temperature during dip-soldering must not at any time exceed the maximum storage temperature. These recommendations apply to a device mounted flush on a board having punched-through holes, or spaced at least 1.5mm above a board having plated-through holes.
3. Care should be taken not to bend the leads nearer than 1.5mm from the seal.
4. If devices are stored at temperatures above 100°C before incorporation into equipment, some deterioration of the external surface is likely to occur which may make soldering into the circuit difficult. Under these circumstances the leads should be retinned using a suitable activated flux.

