FAIRCHILD
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# μA2480 Winchester Disk Servo Preamplifier

Linear Division Disk Drives

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## Description

The μA2480 provides termination, gain, and impedance buffering for the servo read head in Winchester disk drives. It is a differential input, differential output design with fixed gain of approximately 100. The bandwidth is guaranteed greater than 10 MHz.

The internal design of the μA2480 is optimized for low input noise voltage to allow its use in low input signal level applications. It is offered in 8-lead DIP (plastic) or 10-lead flatpak.

- **Low Input Noise Voltage**
- **Wide Power Supply Range (8.0 V To 13 V)**
- **Internal Damping Resistors (1.0 kΩ)**
- **Functionally Compatible with SSI 101**

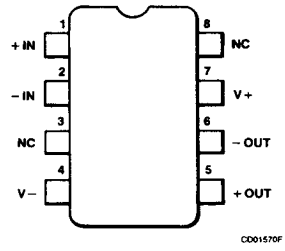
## Absolute Maximum Ratings

| | |
|---|---|
| Storage Temperature Range | |
| Flatpak | −65°C to +175°C |
| Molded DIP | −65°C to +150°C |
| Operating Temperature Range | 0°C to 70°C |
| Lead Temperature | |
| Flatpak (soldering, 60 s) | 300°C |
| Molded DIP (soldering, 10 s) | 265°C |
| Internal Power Dissipation[1, 2] | |
| 8L-Molded DIP | 0.93 W |
| 10L-Flatpak | 0.79 W |
| Supply Voltage | 15 V |
| Output Voltage | 15 V |
| Differential Input Voltage | ±1.0 V |

**Notes**

1. $T_{J\ Max}$ = 150°C for the Molded DIP, and 175°C for the Flatpak.
2. Ratings apply to ambient temperature at 25°C. Above this temperature, derate the 10L-Flatpak at 5.3 mW/°C, and the 8L-Molded DIP at 7.5 mW/°C.

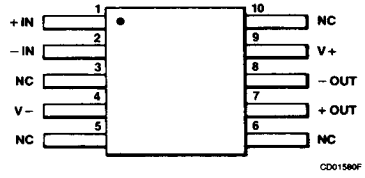
## Connection Diagram 8-Lead DIP (Top View)




## Order Information

| Device Code | Package Code | Package Description |
|---|---|---|
| μA2480TC | 9T | Molded DIP |

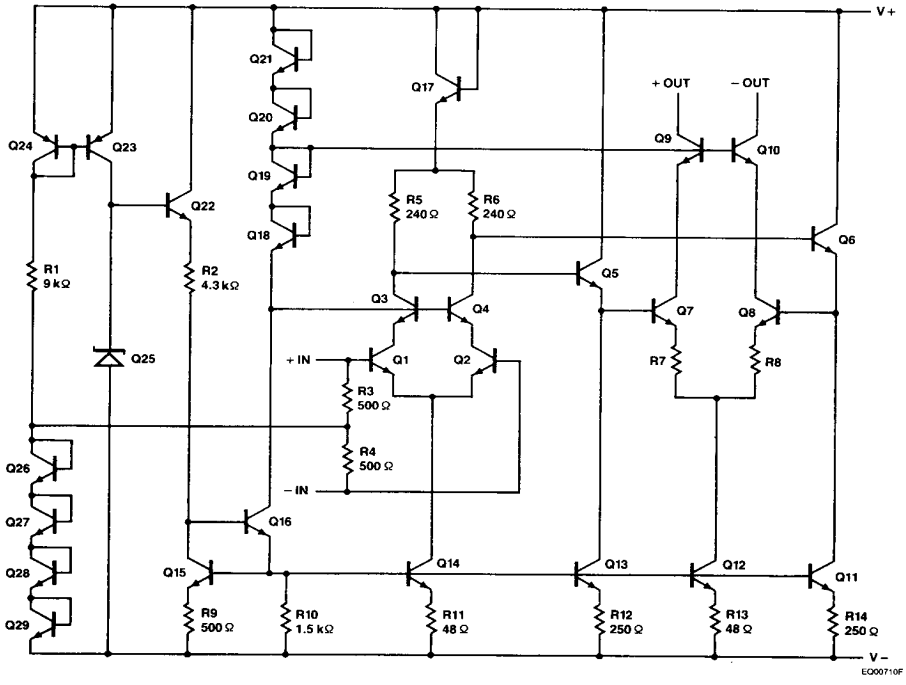
## Connection Diagram 10-Lead Flatpak (Top View)




## Order Information

| Device Code | Package Code | Package Description |
|---|---|---|
| μA2480FC | 3F | Flatpak |

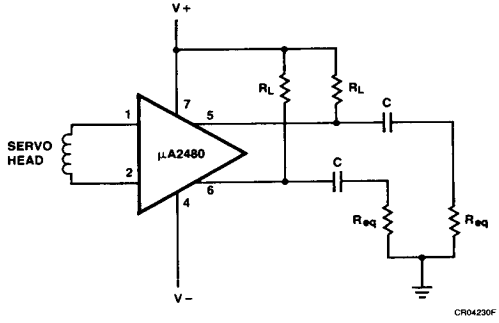
**Equivalent Circuit**



**Electrical Characteristics** $T_A = 25°C$, $(V+) - (V-) = 8.0$ V to 13.2 V, unless otherwise specified.

| Symbol | Characteristic | Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| G | Gain (differential) | $R_p = 130\ \Omega$, $V_{CC} = 12$ V | 92 | 115 | 138 | |
| | | $R_p = 130\ \Omega$, $V_{CC} = 12$ V, $T_A = 0°C$ to $70°C$ | 80 | | 150 | |
| BW | Bandwidth (3.0 dB) | $V_I = 2.0\ mV_{p-p}$ | 10 | 30 | | MHz |
| $R_I$ | Input Resistance | | 800 | 1000 | 1200 | Ω |
| $C_I$ | Input Capacitance | | | 3.0 | | pF |
| $V_I$ | Input Dynamic Range (differential) | $R_p = 130\ \Omega$, $V_{CC} = 12$ V | 3.0 | | | $mV_{p-p}$ |
| $I_s$ | Supply Current | $V_{CC} = 12$ V | | 30 | 40 | mA |
| $\Delta V_O$ | Output Offset (differential) | $R_s = 0\ \Omega$, $R_p = 130\ \Omega$ | | | 600 | mV |
| $V_n$ | Equivalent Input Noise | BW = 4.0 MHz, $R_S = 0\ \Omega$ | | 1.5 | 10 | μV |
| PSRR | Power Supply Rejection Ratio | $R_s = 0\ \Omega$, $f < 5.0$ MHz | 50 | 65 | | dB |
| $\Delta G/\Delta V$ | Gain Sensitivity (Supply) | $\Delta\ V_{CC} = \pm 10\%$, $R_p = 130\ \Omega$ | | ±1.3 | | %/V |
| $\Delta G/\Delta T$ | Gain Sensitivity (Temp) | $T_A = 25°C$ to $70°C$, $R_p = 130\ \Omega$ | | −0.2 | | %/°C |
| CMR | Common Mode Rejection (Input) | $f < 5.0$ MHz | 55 | 70 | | dB |

## Typical Applications




**Notes**
1. Leads shown for 8-lead DIP.
2. $R_{eq}$ is equivalent load resistance.
3. $R_P = \dfrac{R_L \cdot R_{eq}}{R_L + R_{eq}}$
4. $G = .88\ R_P$
   Where $R_P$ = value from Note 3 (above) in ohms.