FAIRCHILD
A Schlumberger Company

μA2480 Winchester Disk Servo Preamplifier

Linear Division Disk Drives

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**

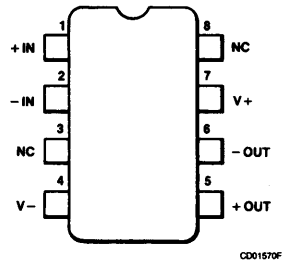
Absolute Maximum Ratings

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.

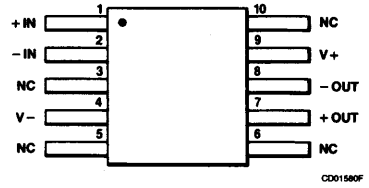
Connection Diagram 8-Lead DIP (Top View)



Order Information

Device Code	Package Code	Package Description
μA2480TC	9T	Molded DIP

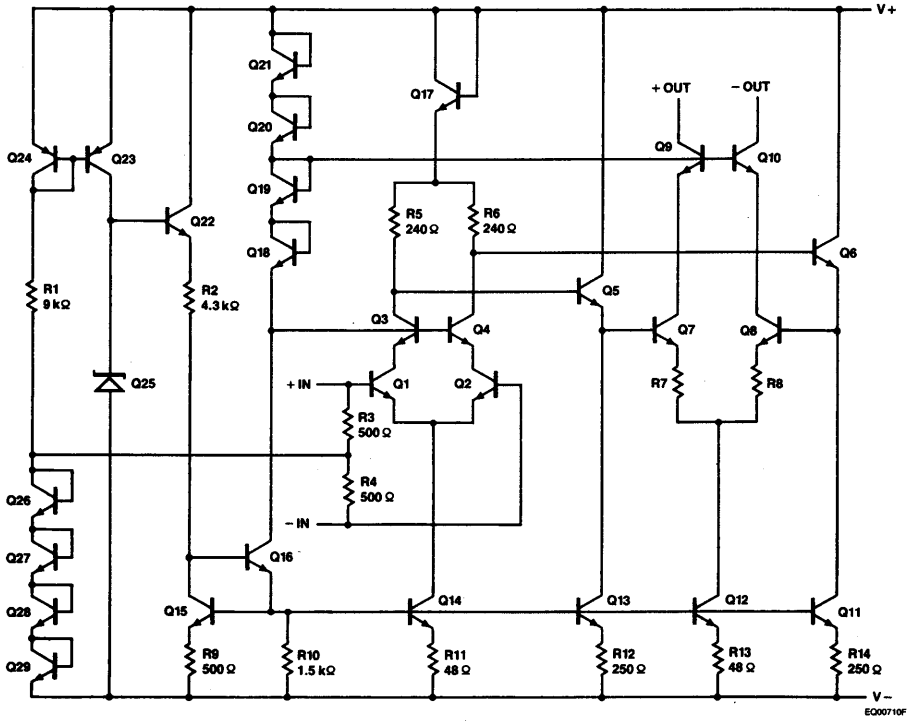
Connection Diagram 10-Lead Flatpak (Top View)



Order Information

Device Code	Package Code	Package Description
μA2480FC`	3F	Flatpak

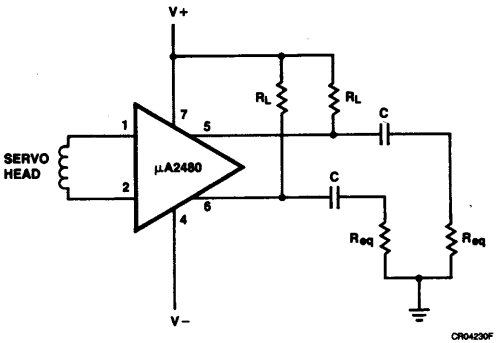
Equivalent Circuit



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
ΔV_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.