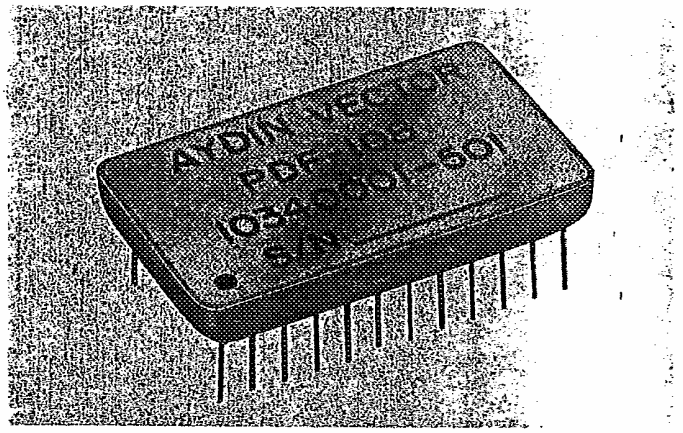
AYDIN VECTOR

PDF-108 PROGRAMMABLE DATA FILTER

T-64-05



TYPE OF CIRCUITRY:
Programmable gain and offset differential input instrumentation amplifier followed by programmable cutoff frequency low pass filter.

SIGNAL INPUT VOLTAGE RANGE:
±10 Vdc maximum.

DIFFERENTIAL INPUT IMPEDANCE:
>100 megohms in parallel with 12 pF.

COMMON MODE INPUT IMPEDANCE:
>100 meghoms in parallel with 12 pF.

INPUT BIAS CURRENT (either input):
60 nanoamperes maximum @ -25°C to +85°C.

COMMON MODE REJECTION RATIO, Dc TO 60 Hz:
At Gain =1000, 110 dB Minimum.
At Gain =100, 100 dB Minimum.
At Gain =1, 70 dB Minimum.

GAIN RANGE:
1 to 1000, programmable by external resistor/pot combination.

FIXED GAIN ACCURACY @ 25°C: Gain =1000±0.2%. (unit to unit) Gain =100±0.1%. Gain of "1" and the above gains are supplied.

GAIN STABILITY: 0.35% @ G=100
1% @ G=1000.

OFFSET CORRECTION RANGE @ G=100: ±50 mVdc programmable by external resistor/pot combination.

OFFSET DRIFT OVER TEMPERATURE RANGE:
±0.1% of F.S. @ G=1
±0.3% of F.S. @ G=100
± 2% of F.S. @ G=1000

OFFSET CORRECTION TERMINAL:
- Input Range: ±10 Vdc Maximum.
- Voltage Gain To Output: Unity, with positive sense.

OUTPUT NOISE: 2 mV ptp @ G=100
20 mV ptp @ G=1000

OUTPUT CURRENT:
50 mA typ.

OUTPUT IMPEDANCE:
0.1 Maximum (Output shorted to load sense).

OUTPUT VOLTAGE SWING, 1k || 1500pF LOAD:
±10 Vdc.

OUTPUT NON-LINEARITY:
±0.2% Maximum.

DISTORTION:
±0.2% Maximum @ f_{out} BW, < V_{out}=20 V ptp.

FILTER TYPE:

Low Pass. (The following specifications exclude external resistor drift).

CHARACTERISTICS:
6-pole Butterworth, with final roll-off of -36 dB/octave, to within ±3 dB of theoretical response.

PHASE ACCURACY:
±1° from unit to unit

CUTOFF FREQUENCY RANGE:
7.14 Hz standard, programmable up to 10 kHz maximum by six resistors.

CUTOFF FREQUENCY POINT:
-3.0 dB from reference mid band response.

CUTOFF FREQUENCY ACCURACY, INITIAL:
±5%, exclusive of external programming resistor drift.

CUTOFF FREQUENCY, TEMPERATURE COEFFICIENT:
±5% over the stated operating temperature range.

TEMPERATURE RANGE, OPERATING:
-25°C to +85°C (Consult factory for wider temperature range).

TEMPERATURE RANGE, STORAGE:
-55°C to +125°C

SIZE:
0.2" high, 0.77" wide, 1.27" long, 24 pins.

POWER INPUT SUPPLY VOLTAGE:
+15V and -15Vdc with 0.5% regulation recommended.

POWER SUPPLY CURRENT (Ea. Supply):

mA typ, mA max., exclusive of output load current.

RESISTOR TABLE FOR GAIN PROGRAMMING

GAIN	(RG) REQUIRED RESISTOR
1.0	OPEN
10.0	4440 ±20%
100	404 ±20%
1000	40 ±20%

ENVIRONMENTAL SPECIFICATIONS

TEMPERATURE RANGE:

OPERATING:

-25°C to +85°C (Consult factory for extended temperature range).

STORAGE:

-45°C to +125°C.

VIBRATION:

Capable of withstanding greater than 30g from 55 to 200 Hz in each major axis.

BURN-IN:

100% burn-in for 168 hours @ 125°C (power applied, signal applied).

SHOCK:

Capable of withstanding at least 20g shock in each major axis.

ACCELERATION:

Capable of withstanding at least 100g acceleration in each major axis.

ALTITUDE: Unlimited

HUMIDITY:

95% RH non-condensing.

RECOMMENDED EXTERNAL RESISTORS FOR GAIN:

Programming, Fixed; RN55C

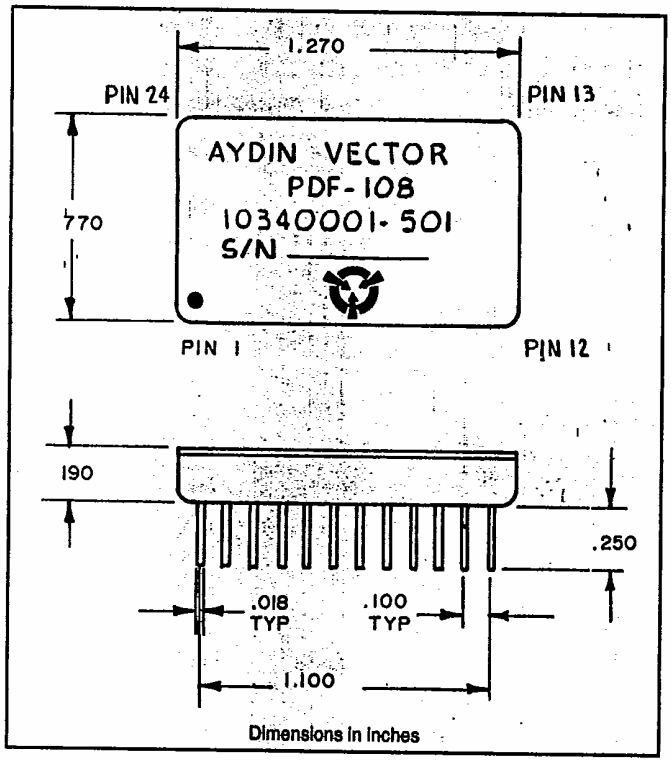
Variable: Cermet, or Low T.C. Wirewound Type

Recommended External Resistors for Cutoff Frequency Programming

PIN	FUNCTION
1	LOAD SENSE
2	OUTPUT
3	FILTERED OUTPUT
4	UNFILTERED BUFFER OUT
5	REF VOLTAGE
6	+15VDC PWR
7	COMM. R5 & R6
8	FC RES6
9	COMM R3 & R4
10	FC RES R5
11	FC RES R4
12	FC RES R2

13	FC RES R3
14	COMM R1 & R2
15	FC RES R1
16	CASE GND
17	GAIN RES 2
18	GAIN RES 1
19	X1000 FIXED GAIN
20	X100 FIXED GAIN
21	DIFF INPUT (-)
22	DIFF INPUT (+)
23	PWR & SIG RTN & CASE GND
24	-15VDC PWR

Outline Drawing



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