TelCom Semiconductor, Inc.

TC9400
TC9401
TC9402

VOLTAGE-TO-FREQUENCY/FREQUENCY-TO-VOLTAGE CONVERTERS

FEATURES

Voltage-to-Frequency

- **Choice of Guaranteed Linearity:**
  - **TC9401 ..... 0.01%**
  - **TC9400 ..... 0.05%**
  - **TC9402 ..... 0.25%**
- **DC to 100 kHz (F/V) or 1Hz to 100kHz (V/F)**
- **Low Power Dissipation ..... 27mW Typ**
- **Single/Dual Supply Operation .....**
  + 8V to + 15V or ± 4V to ± 7.5V
- **Gain Temperature Stability ..... ± 25 ppm/°C Typ.**
- **Programmable Scale Factor**

Frequency-to-Voltage

- **Operation ..... DC to 100kHz**
- **Choice of Guaranteed Linearity:**
  - **TC9401 ..... 0.02%**
  - **TC9400 ..... 0.05%**
  - **TC9402 ..... 0.25%**
- **Programmable Scale Factor**

APPLICATIONS

- **µP Data Acquisition**
- **13-Bit Analog-to-Digital Converters**
- **Analog Data Transmission and Recording**
- **Phase-Locked Loops**
- **Frequency Meters/Tachometer**
- **Motor Control**
- **FM Demodulation**

GENERAL DESCRIPTION

The TC9400/TC9401/TC9402 are low-cost voltage-to-frequency (V/F) converters utilizing low power CMOS technology. The converters accept a variable analog input signal and generate an output pulse train whose frequency is linearly proportional to the input voltage.

The devices can also be used as highly-accurate frequency-to-voltage (F/V) converters, accepting virtually any input frequency waveform and providing a linearly-proportional voltage output.

A complete V/F or F/V system only requires the addition of two capacitors, three resistors, and reference voltage.

ORDERING INFORMATION

Part No.	Linearity (V/F)	Package	Temperature Range
TC9400COD	0.05%	14-Pin SOIC (Narrow)	0°C to +70°C
TC9400CPD	0.05%	14-Pin Plastic DIP	0°C to +70°C
TC9400EJD	0.05%	14-Pin CerDIP	– 40°C to +85°C
TC9401CPD	0.01%	14-Pin Plastic DIP	0°C to +70°C
TC9401EJD	0.01%	14-Pin CerDIP	– 40°C to +85°C
TC9402CPD	0.25%	14-Pin Plastic DIP	0°C to +70°C
TC9402EJD	0.25%	14-Pin CerDIP	– 40°C to +85°C

FUNCTIONAL BLOCK DIAGRAM