TIC-8420 Datasheet

D-1733

Timer/Counter/Analyzer with 2.8 nanosecond resolution

- **Digitizes Time Intervals**
- **USB controlled instrument**
- **TTL/CMOS logic inputs/outputs**
- **Flexible Arming/Triggering**
- **Windows 10, Linux, 32/64 bit**

Features

- **2.8 ns resolution, 6 ns minimum Pulse Width, 100 MHz fMax**
- **Two independent input channels**
- **External reference and trigger channels**
- **Jitter, Frequency, Time Interval, Pulse-width Measurements**
- **Two channel start/stop measurements**
- **Repetitive measurements: Single-Stop Histogram, Multi-Stop Histogram**

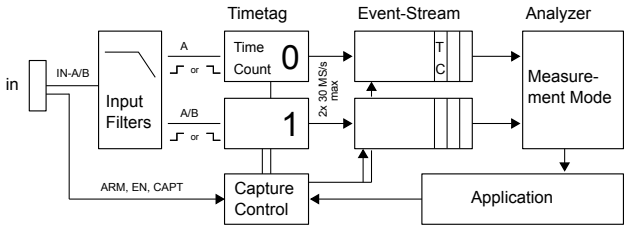
Applications

- **Edge Counter, Time Stamping**
- **Pulse-Width, Pulse, Semi-Period, Frequency, Period, Position Measurement**
- **Simple Pulse, Pulse Train, Frequency Generation**
- **Time-to-digital conversion (TDC)**
- **Time-of-flight (TOF) measurements**

Overview

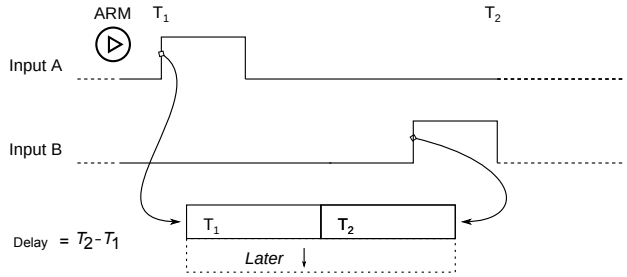
The TIC-8420 is a novel Timer/Counter/Analyzer based on digitization of time intervals in pulse trains with 2.8 ns resolution.

TIC Architecture

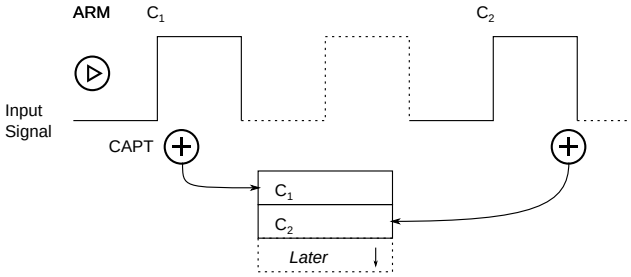


Measurement Modes

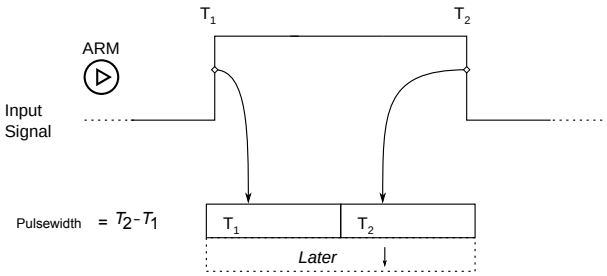
MDEL Measurement Mode



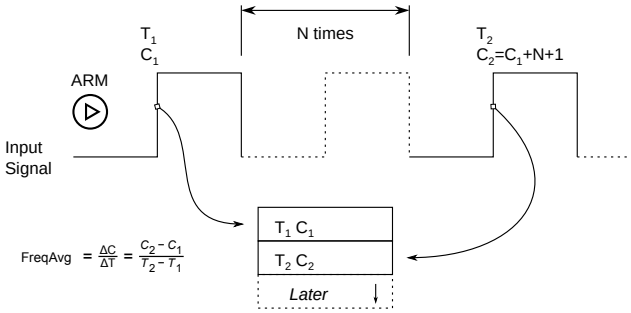
MTOC Measurement Mode



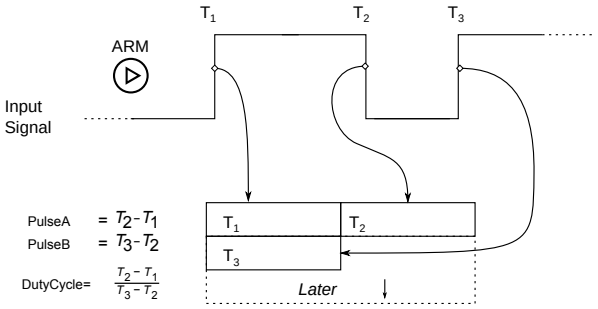
MPWI Measurement Mode



MFAV Measurement Mode



MPUL Measurement Mode



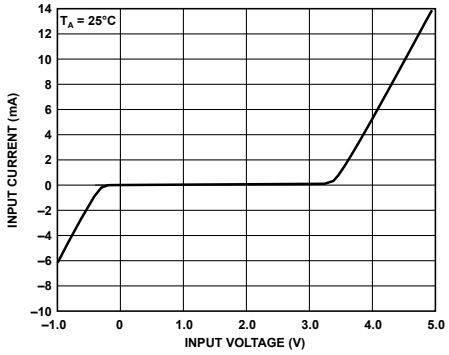
Specifications

Time's

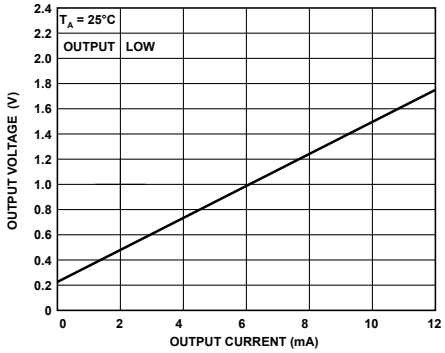
Stability (vs. ambient temperature)**:** ± 3.0 ppm
Aging (first year)**:** ± 2.0 ppm

Electrical Data

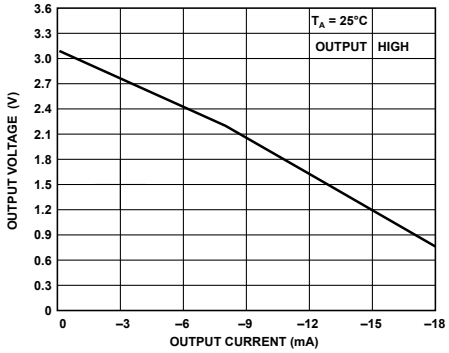
Overvoltage Protection (permanent, all inputs)**:** -5.0V … +8.7V
Overvoltage Protection (peak, max. 10 ms, 2% duty cycle)**:** ± 20V
Input Characteristics (Pull-down 33kΩ at each input)**:** Logic L ≤ 0.8V, Logic H ≥ 2.0V



Output Characteristics (low)**:**



Output Characteristics (high)**:**



Supply Voltage (USB)**:** 5V ± 5%
Supply Current (USB)**:** 150 mar max.

Environmental and Physical

Size (excluding connectors)**:** 111 mm L x 76 mm W x 29 mm H
Weight: 160 g
Operating ambient temperature: 0 … 50°C
Storage temperature: -20 … 80°C
Relative humidity: 5 … 95%, noncondensing
USB connector: Extraction force ≥ 15N, Mating force ≤ 35N

Ordering Information

TIC-8420 - Instrument, USB cable (1m), Software Download Card

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