TELEDYNE SCIENTIFIC COMPANY

TPG002

9ps CML Driver With Integrated 43GHz Track-and-Hold

Features

- High Bandwidth CML Driver with Adjustable Output Amplitude
- 9 ps Maximum Rise/Fall Time CML Driver
- 43 GHz Input Bandwidth Integrated Track and Hold
- Better than -40dBc THD Over the Total Bandwidth with Small Signal Input
- Better than 35dBc SFDR Over the Total Bandwidth with Small Signal Input
- 50 - 300 MHz Sampling Rate
- Differential Analog Input/Output
- Output Held more than Half Clock Cycle
- 2W Power Dissipation
- Single Power Supply
- Adjustable Track and Hold Output Common Mode

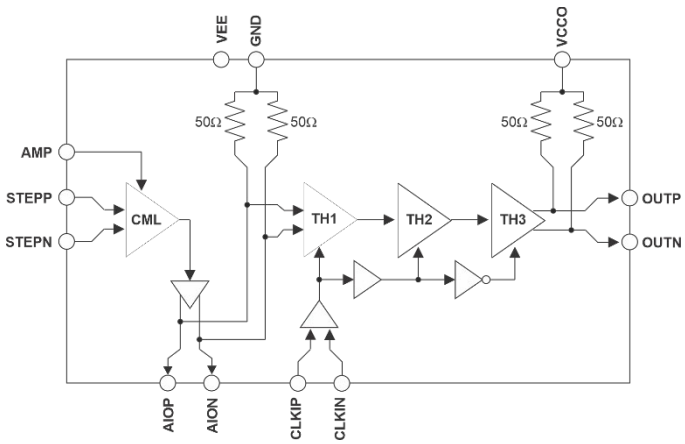

Figure 1 - Functional Block Diagram

Product Description

The TPG002 is comprised of a CML driver and a track and hold amplifier. The CML driver can be used to generate a step signal that is captured, along with any reflections in the AIO line, by the track and hold. The Track-and-hold cascades three track-and-hold circuits: TH1, TH2 and TH3. It provides an output held for more than half a clock cycle, easing bandwidth requirements of subsequent circuitry relative to the case of a single track-and-hold (TH). The requirement of only one clock source simplifies the clock distribution design.

Ordering information

PART NUMBER	DESCRIPTION
TPG002-QN	20 I/O QFN Package
TPG002-DI	Die
EVTPG002	Evaluation Board

CAUTION
DEVICE SUSCEPTIBLE TO DAMAGE BY ELECTROSTATIC DISCHARGE (ESD)

Pin Description and Pin Out (20 I/O QFN Package)

P/I/O	PIN	NUM.	NAME	FUNCTION
P	1,3,5,8,11,13,15, bottom pad	8	GND	Power Supply Ground
P	18	1	VEETH	Negative Power Supply – Track and Hold
P	19	1	VEED	Negative Power Supply – CML Driver
I	10	1	CLKIP	Clock Input: High = TH1 in Track Mode
I	9	1	CLKIN	Low = TH1 in Hold Mode
I	7	1	STEPP	CML Driver Input
I	6	1	STEPN	
I	2	1	AIOP	Analog Input/Output
I	4	1	AION	
O	12	1	OUTP	Analog Output
O	14	1	OUTN	
C	16	1	TSEN	Temperature Sensor
P	16	1	VTERM	Output Termination Voltage
C	20	1	DRVGC	CML Output Gain Control

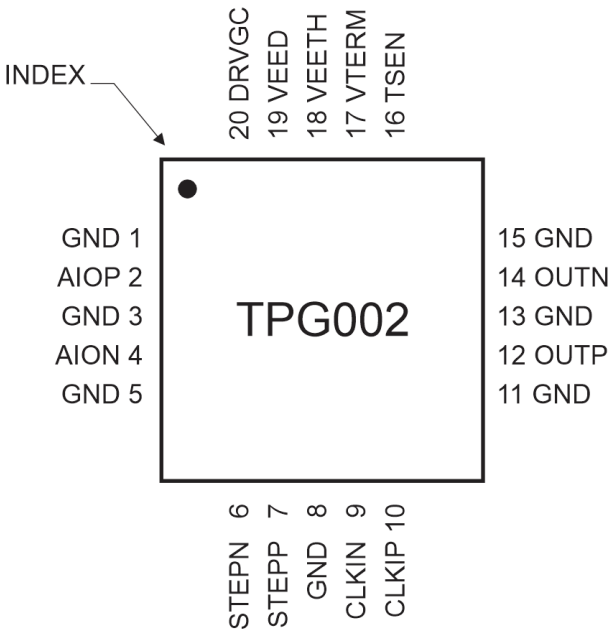

Figure 2 – TPG002 pinout (top view) 20 I/O QFN package.

Typical Operating Circuit

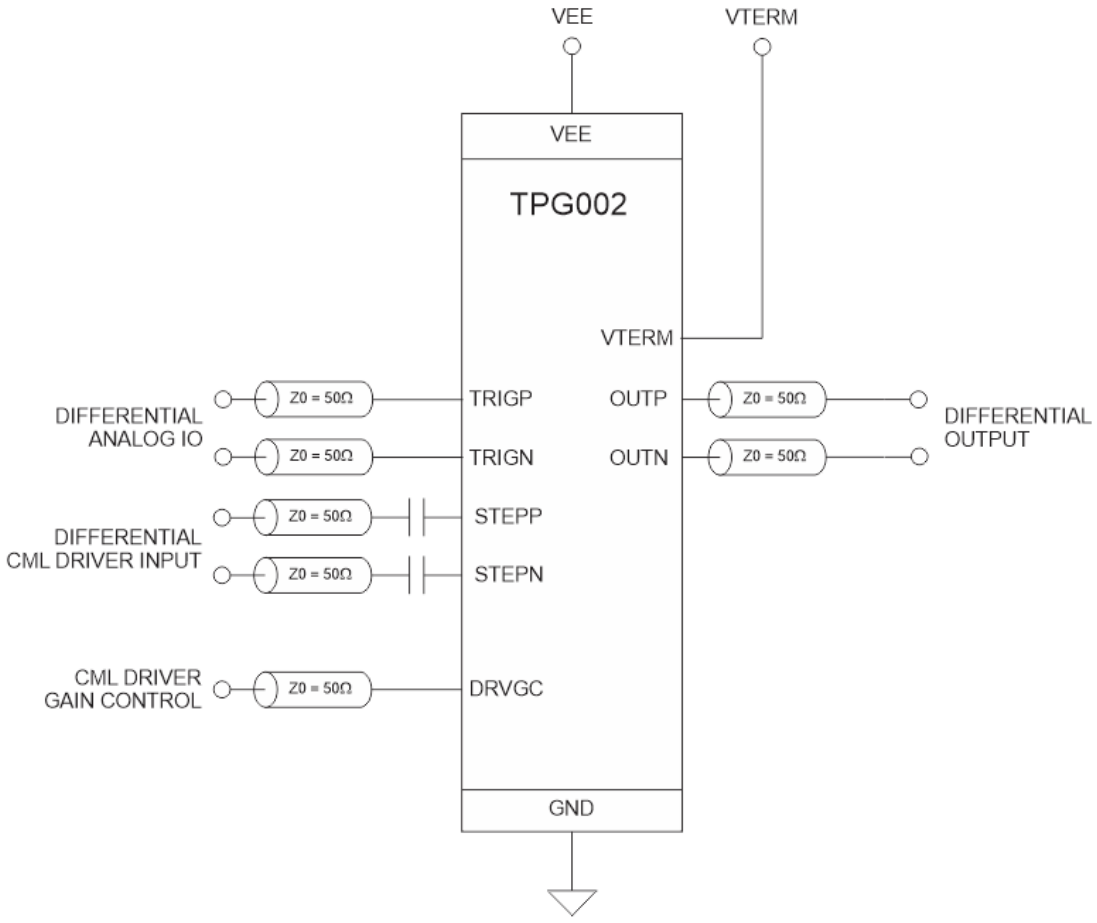

Figure 3 - Typical operating circuit.

Package Information -QN

The package is an organic laminate 20 IO QFN.

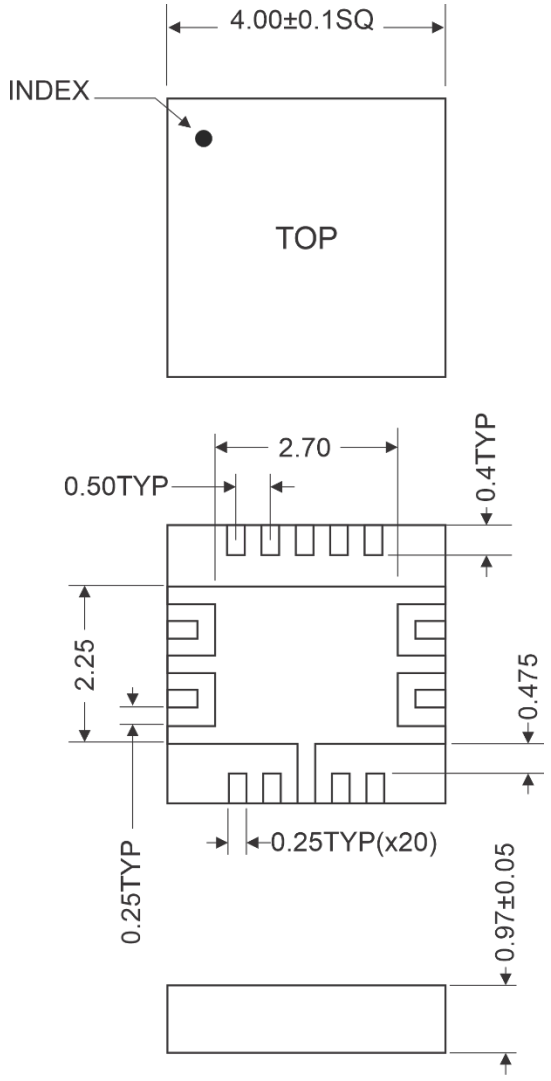

Figure 14 – TPG002-QN package outline, dimensions in mm.