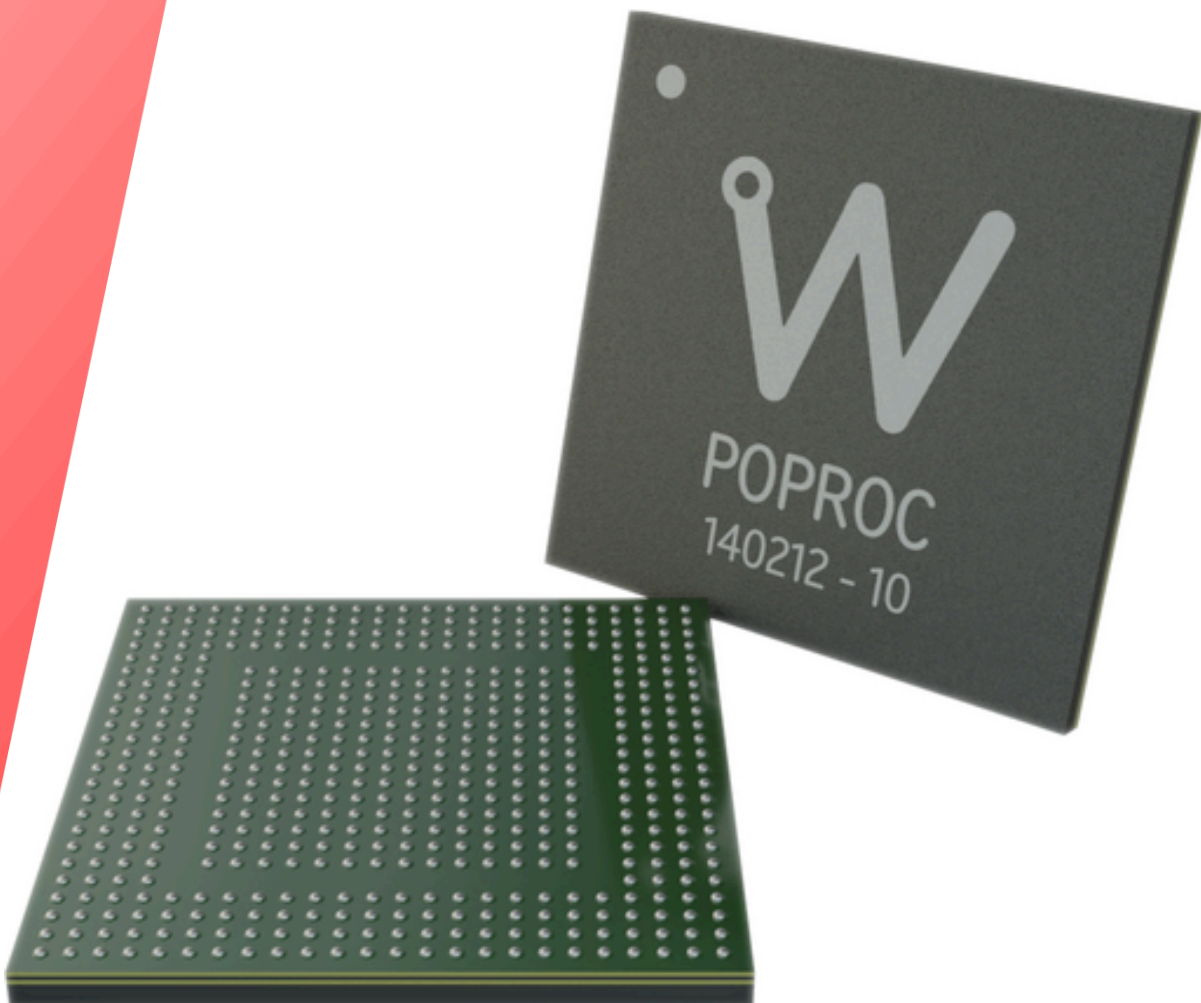
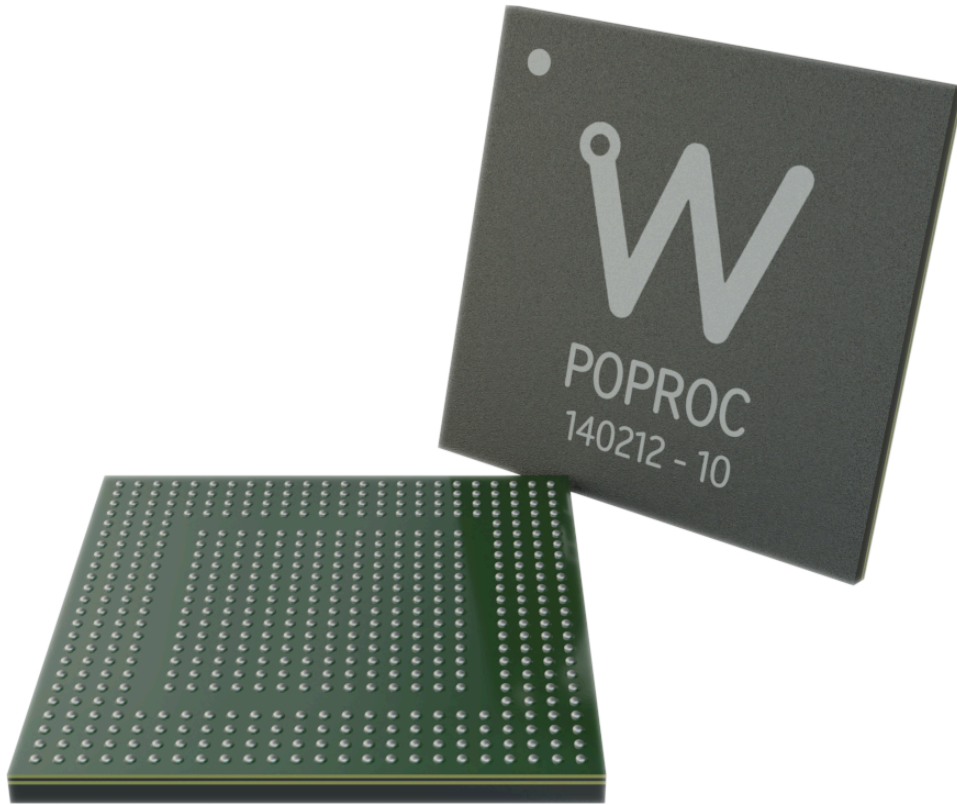


POPROC

MA-PMT readout out chip



Features



- **TRL Technology Readiness Level**
- **Detector Read-Out** MA-PMT, PMT
- **Number of Channel** 64
- **Signal Polarity** Negative
- **Sensitivity** Trigger on 1/3 photo-electron

Description

POPROC is a MA-PMT readout out chip, specifically design for fast counting output. This chip is fully analog and features differential trigger output for each detector channel. The ASIC is designed to accept negative polarity input and can readout up to 64 channels.

POPROC allows triggering down to 1/3 p.e. and provides low-voltage differential trigger output for each channel with an excellent timing resolution (better than 20ps FWHM) and excellent double-peak separation (100% efficiency on 3 ns separated single photo-electrons). POPROC allows fast single photon counting over 300MHz per channel.

Channel-by-channel calibration on the trigger threshold is also possible thanks to 6-bit DACs.

POPROC features a GHz measurement line composed of a current conveyor followed by a fast discriminator and low swing differential output driver.

Technical Specifications

TRL Technology Readiness Level

5 - First measurement conclusive in lab

Available versions

Poproc1 - available

Detector Read-Out

MA-PMT, PMT

Number of Channel

64

Signal Polarity

Positive, Negative

Sensitivity

Trigger on 1/3 photo-electron

Timing Resolution

Better than 20 ps FWHM on single photo-electron

Better than 3 ns double-peak separation on single photo-electron

Over 300MHz photon counting rate

Dynamic Range

Over 100 photo-electrons

Packaging & Dimension

BGA 20x20 mm² 516 balls

Flip-Chip low inductance packaging technology

Power Consumption

210mW - Supply voltage: 1.2 V

Inputs

64 analogue inputs

Outputs

64 differential (CLPS) triggers

Internal Programmable Features

Trigger threshold programming (10bits), 64 x 6-bit channel-wise threshold adjustment, ASIC-wise polarity selector, preamp bandwidth adjustment, individual trigger masking

Evaluation systems

Poproc evaluation system

Poproc + picoTDC read-out system

Ordering Options

Code	Description
WWPOPROCAAAA	POPROC - 64ch Read-Out Chip for MA-PMT and PMT (BGA)

Related Products

GEMROC 1



Micromegas and GEMs semi digital read out chip

PHOTOROC 1Q



Photon counting and ToT for photomultipliers

TEMPOROC



Multi-Purpose Mixed-Signal SiPM read-out ASIC

CATIROC 1



Large photomultiplier arrays read out chip

SPACIROC 3



Photomultiplier tubes photon counting read out chip

HARDROC 3B



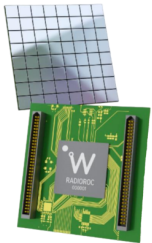
RPC and gaseous detector semi digital read out chip

PSIROC



PIN Diodes, Silicon Strips and GEMs Read-Out Chip

RADIROC 2



Multi-purpose SiPM analogue read-out chip

MAROC 3A



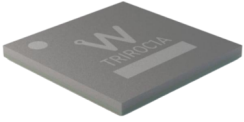
Photomultiplier tubes read out chip

PETIROC 2A



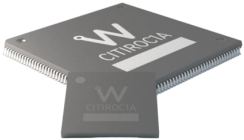
SiPM read out for time of flight PET

TRIROC 1A



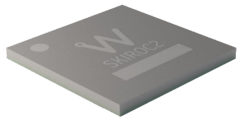
All in one SiPM read out for multimodal PET inserts

CITIROC 1A



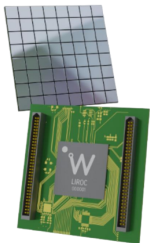
Scientific instrumentation SiPM read out chip

SKIROC 2A

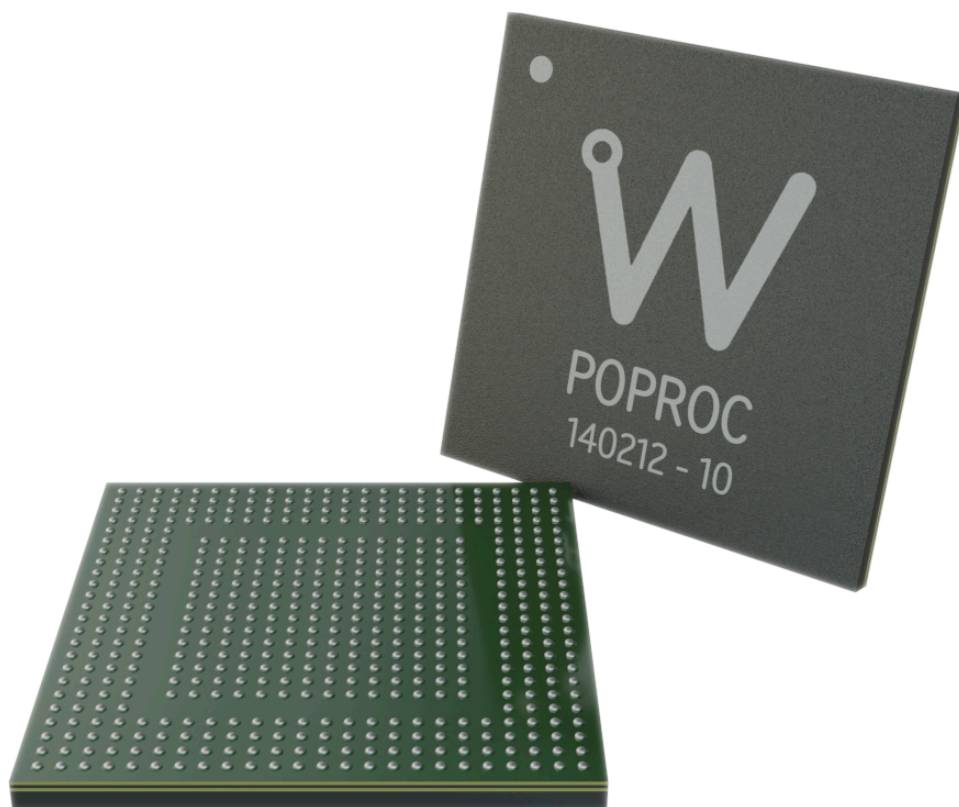


PIN Diode and Low Gain Silicon Detector Read-Out Chip

LIROC 1



SiPM Analogue Read-out Chip for Lidar and Photon Counting Application



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