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Poproc

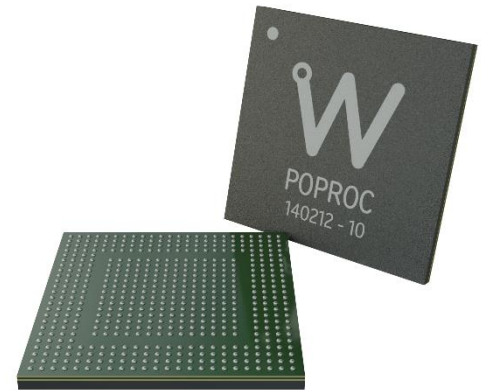
MA-PMT readout chip Photon Counting Application

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.



Detector Read-Out	PMT, MA-PMT
Number of Channels	64
Signal Polarity	Negative (selectable to work on Positive)
Sensitivity	Trigger on 1/3 of 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 mm ² 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 (I²C)	trigger threshold programming (10bits), 64 x 6-bit channel-wise threshold adjustment, ASIC-wise polarity selector, preamp bandwidth adjustment, individual trigger masking.

More about Poproc

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