

# Sensor Signal Amplifier MTI

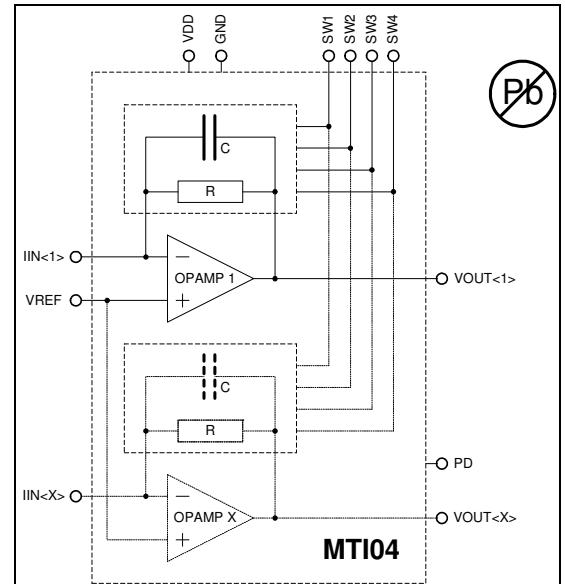
## PRODUCT INFORMATION

### Multi-channel transimpedance amplifier (TIA)

With the MTI series, MAZeT provides a family of multi-channel amplifier ICs (current-to-voltage conversion transimpedance amplifiers) for sensors with current output. These are distinguished, among other things, by a programmable bandwidth and high amplification.

The ICs are offered in different RoHS compliant housings or - within the scope of customer projects - are also available as 'naked' chips (die) for Chip-On-Board (COB) assembly.

The MTI series is currently available in two types, which differ in electrical parameters.

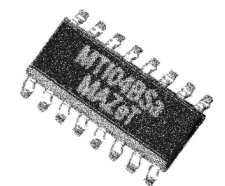
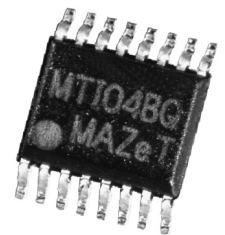


### MTI04Bx-BF

The MTI04B series are 4-channel transimpedance amplifiers (TIAs). They are ideal for the connection of small photodiodes and arrays of up to 20pF input capacitance. The TIAs can be programmed for amplification (for currents from 100nA) and bandwidth (up to 500 KHz) in three stages via the external pads.

### MTI04B Characteristics:

Parameter	typ.	Unit	Condition
Input Current	0,1	$\mu\text{A}$	Stage 1
	1	$\mu\text{A}$	Stage 2
	20	$\mu\text{A}$	Stage 3
Feedback Resistor	5000	$k\Omega$	Stage 1
	500	$k\Omega$	Stage 2
	25	$k\Omega$	Stage 3
Signal Frequency at Input	25	$\text{kHz}$	Stage 1
	70	$\text{kHz}$	Stage 2
	500	$\text{kHz}$	Stage 3



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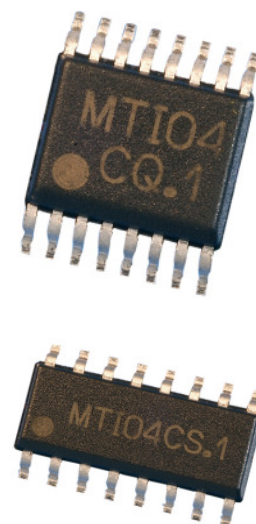
### MTI04CS/MTI04CQ

With the MTI04CS/CQ, MAZeT now presents the second-generation multi-channel transimpedance amplifier. The MTI04CS/CQ now offers the ability to adapt the compensation of the transimpedance amplifier) to the input capacitance of the sensors, such as photodiodes. This is done digitally in two stages, 5 and 80pF.

Programming of the transimpedance gain is carried out via three input pins to any of eight levels; and takes effect for all channels simultaneously.

### MTI04CS/CQ Characteristics:

Parameter	typ.	Unit	Condition
Input Current	0,025	$\mu\text{A}$	Stage 1
	0,05	$\mu\text{A}$	Stage 2
	...	...	...
	20	$\mu\text{A}$	Stage 8
Feedback Resistor	20000	$k\Omega$	Stage 1
	1000	$k\Omega$	Stage 2
	...	...	...
	25	$k\Omega$	Stage 8
Signal Frequency at Input ( $C_{\text{FOTODIODE}} < 5\text{pF}$ )	6	$\text{kHz}$	Stage 1
	11	$\text{kHz}$	Stage 2
	...	...	...
	800	$\text{kHz}$	Stage 8



The sensor ICs are particularly suited as amplifiers for sensors with current output in the nA and  $\mu\text{A}$  range, such as opto arrays and rows in the UV, VIS, NIR and IR spectra. This applies typically to applications in the area of industrial sensors, equipment for surface analysis and temperature measurement, detectors for alpha, beta, gamma and x-rays and ions as well as applications for measurement, regulation and control of light and laser sources.

For more information please visit our web site at <http://www.JENCOLOR.de>

or contact our sales offices!