

MA40

40 Gb/s Measurement Amplifier

PRELIMINARY
Product Information

MICRAM
MICROELECTRONIC

The MA40 is a versatile High-Speed Measurement Amplifier for data rates up to 40 Gb/s (OC768/STM256). Key features are:

- single-ended and differential I/O operation,
- adjustable input threshold,
- adjustable input bias,
- switchable offset cancellation,
- adjustable output swing,
- dc coupled operation,
- single supply voltage.

The MA40 consists of a fully symmetrical differential input buffer. This allows differential as well as single ended drive and is optimized for 50 Ω line termination.

For applications which require adjustable input bias or compensation of DC input currents (e.g. photodiodes) the MA40 allows to adjust the bias input current for each input independently. By an additional control input, the threshold level for H/L amplitude decision can be adjusted. This feature can e.g. be used for pulse shaping, duty cycle adjustment or vertical sampling-point adjustment.

The input signal, as well as the internal gain stages can be compensated for offsets by enabling the internal offset cancellation circuit. The upper cut-off frequency of this circuit can be adjusted by applying two external low cost capacitors.

The MA40 exhibits a fully symmetrical differential output buffer which provides either one differential output signal or two single ended output signals. For multi-purpose applications the output voltage swing can be adjusted in standard mode by a factor of 2.5 and optional by a factor of 4.

Main fields of application are:

- single-ended to differential conversion,
- differential to single-ended conversion,
- amplitude regeneration,
- pulse (re)shaping,
- duty cycle adjustment,
- active power/signal splitter,
- 50 Ω line driver.

Package:

The MA40 is available as ruggedized module equipped with K-Connectors. Other connector types upon request.

MA40 Module with K-Connectors:

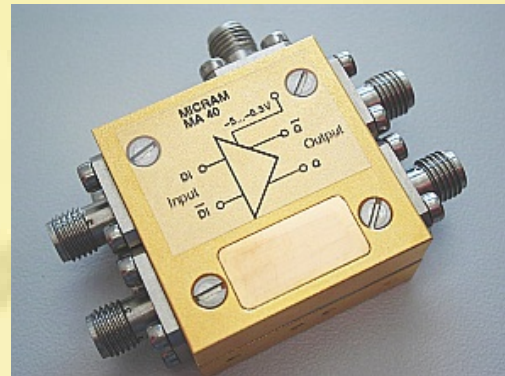
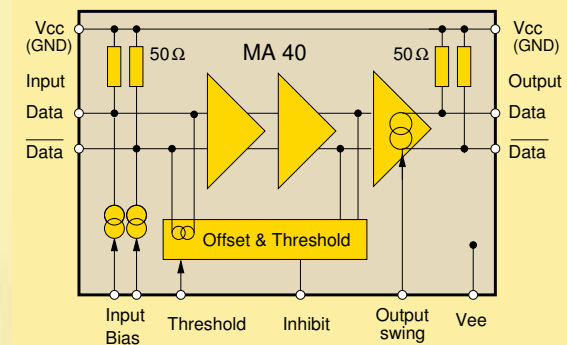


Figure above shows the original size.

Block diagram of the MA40 :

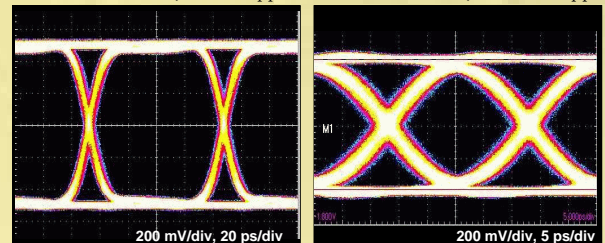


MA40 data:

Power supply, (V_{ee})	-5.5 ... -6 V
Current consumption	90 mA @ -5,5 V
S_{11} , S_{22} ($f < 20$) GHz	-12 dB
Input amplitude range	50 mV_{pp} - 1 V_{pp}
Max. output amplitude	1/0.8 V_{pp} , 10/40 Gb/s

Output Eye Diagrams at 0.2 V_{pp} single ended input:

Left: 10.5 Gb/s, 1 V_{pp} . Right: 40 Gb/s, 0.8 V_{pp} .



For further information on the MA40 please contact your MICRAM sales representative.