

# M-Shunt – Datasheet

(V5.2 | 2026)

## Low Insertion Inductance

Due to its planar design, the M-Shunt offers low insertion inductance and easy integration. Expect **0.5 nH to 1.5 nH** insertion.

## High Maximum Energy

Due to its wide area for cooling, the M-Shunt can handle large amounts of energy.

## High Bandwidth

For M-Shunts, the transfer characteristics can be adjusted by design rules. This allows high bandwidths and low deviations.

## Fully Temperature

### Compensated

Due to the use of temperature-compensated resistors the M-Shunt can be used from  $-20^{\circ}\text{C}$  to  $100^{\circ}\text{C}$  without correction.

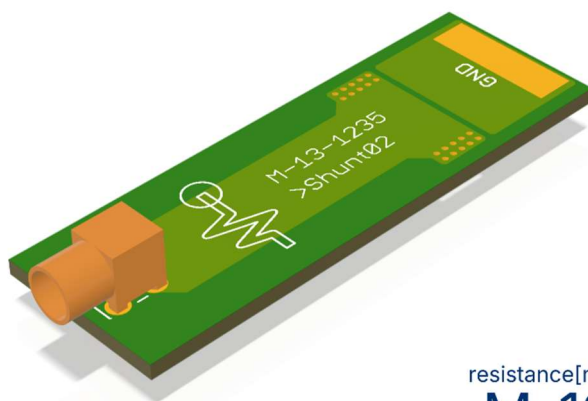
## Customisable

Transfer characteristics and maximum energy are independent. Please request a custom-made option if you have a specific application.

## M-Shunt models:

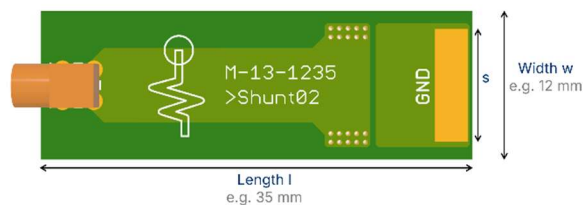
- #1235
- #1242
- #2578

The name indicates the **design-resistance** and the **size** as follows:



resistance[mΩ] M-Shunt ID  
**M-13-1235** **XXXXXX**  
model number

Model #	Width w [mm]	Length l [mm]	Width s [mm]
1235	12	35	9.1
1242	12	42	9.1
2578	25	78	19.1



Model #*	R [mΩ]	$E_{\max 100, \text{theory}}$ [J]	$\pm 3_{\text{dB}}$ BW [MHz]*	10% BW [MHz]**	PP BW [MHz]***	$I_{\text{DC,max}}$ [A]****	$I_{\text{max}}$ [kA]
1235	13	3.55	150	35	600	12	3
1242	18	4.82	160	35	600	10	3
2578	13	31.67	250	53	600	20	3

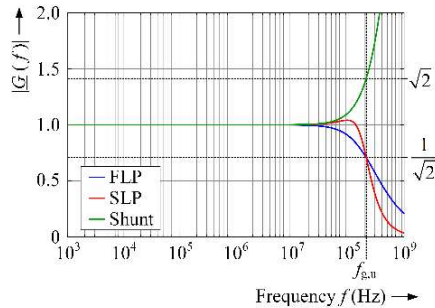
\*In this overview only conventional and confirmed datasheet specifications are given, like for other shunts. More detailed, realistic & typical values are given on page 2 or in the application notes which are not guaranteed. Please also refer to the linked publications on our website for explanations.

\*\*Values are without filtering or post processing.

\*\*\*PP BW is the maximum frequency for high accuracy post processing

\*\*\*\* $I_{\text{DC,max}}$  is rated at ambient temperature without external cooling, based on a maximum allowable shunt temperature of  $100^{\circ}\text{C}$ .

# Typical bandwidth & maximum energy



## Energy Rating:

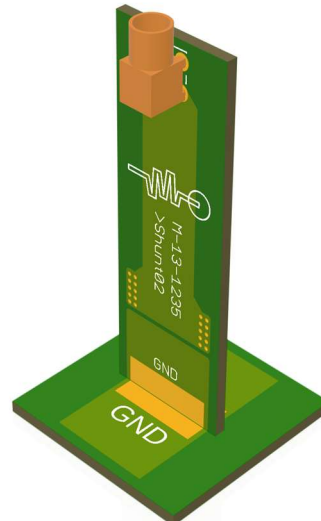
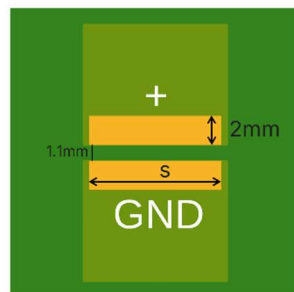
- The specified value is based on theoretical considerations for infinitely short pulse duration.
- These values may be significantly exceeded in practical applications.
- Approval for higher energy loads is required. Please send a detailed description of your application to [info@m-shunt.com](mailto:info@m-shunt.com)

## Bandwidth Rating:

M-Shunts can be inductive or capacitive depending on the model. Unmarked models behave approximately like a First Order Low Pass (FLP). For measurements with high demands we recommend determining the deviation (e.g. 10% given) instead of the 3 dB bandwidth to avoid unnecessary correction factors. For more details please visit <http://www.m-shunt.com/bw/> or the [publications](#) on bandwidth.

# Application Notes

- The low-side connection-pad of the shunt is labeled as GND.
- In order to avoid potential common-ground issues, utilising optical probes is recommended.
- Do not use the shunt if the resistance value has changed more than 10%.
- The measurement takes place between the middle pin and the soldering pad. SMA or MMCX connectors can be replaced with wire connectors.
- 3D models and recommended PCB footprints for M-Shunts are available upon request.



## Visit our website:

- How to connect the shunt?
- Measuring the bandwidth
- Increasing the bandwidth
- Measurement deviations
- Post-Processing

## Scientific Papers:



[www.m-shunt.com/scientific/](http://www.m-shunt.com/scientific/)



Datasheet M-Shunt V.5.2  
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April 2026  
[www.m-shunt.com](http://www.m-shunt.com)

permanent download link for referencing:  
[www.m-shunt.com/datasheet/core/](http://www.m-shunt.com/datasheet/core/)

Which bandwidth should I use?

From our point of view, the 3 dB bandwidth is not an accurate statement. Please refer to the typical deviation table or use post processing. More information on

[www.m-shunt.com/bw/](http://www.m-shunt.com/bw/)

How much energy can I consider?

The maximum energy level can be exceeded significantly for short periods and pulses. This is at your own risk or should be checked with us.

FAQ Products



Support

Please feel free to contact us

[info@m-shunt.com](mailto:info@m-shunt.com)