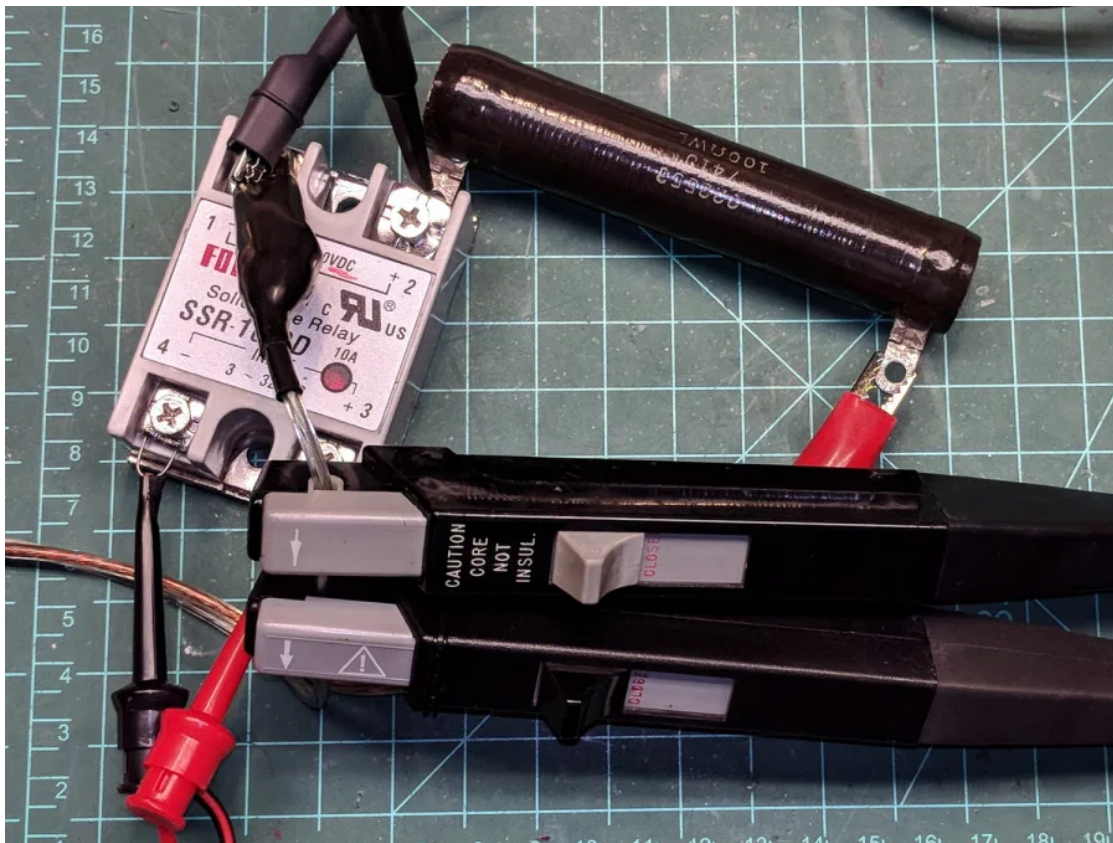


The Smell of Molten Projects in the Morning

ELECTRONICS WORKBENCH, SCIENCE

Tek A6302 Current Probe Derating

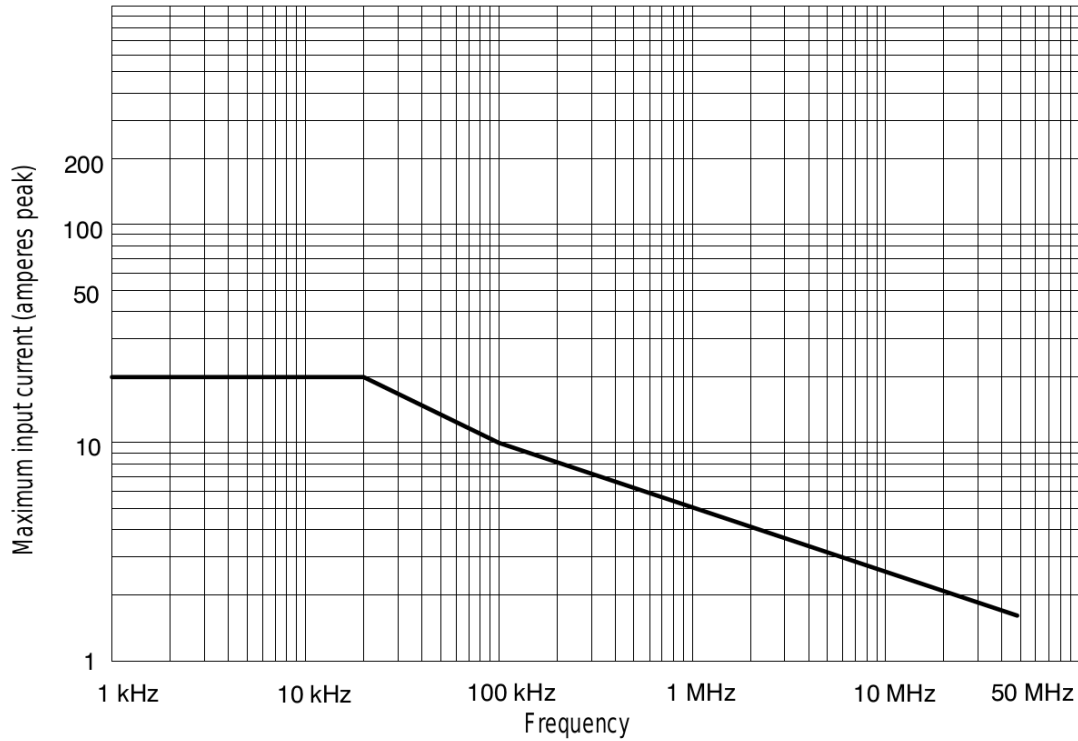
Most currents around here come in tens-of-milliamps, maybe a few hundred, tops, but it's worth noting some curves from the [Tektronix AM503 current amplifier manual](http://bama.edebris.com/download/tek/am503/tek-am503.pdf) (<http://bama.edebris.com/download/tek/am503/tek-am503.pdf>) for [A6302 Hall effect probes](https://www.tek.com/a6302-manual/a6302-a6302xl-instructions-0) (<https://www.tek.com/a6302-manual/a6302-a6302xl-instructions-0>):



(https://softsolder.files.wordpress.com/2018/06/img_20180625_100925-tek-a6302-calibration-setup.jpg).

Tek A6302 Calibration Setup

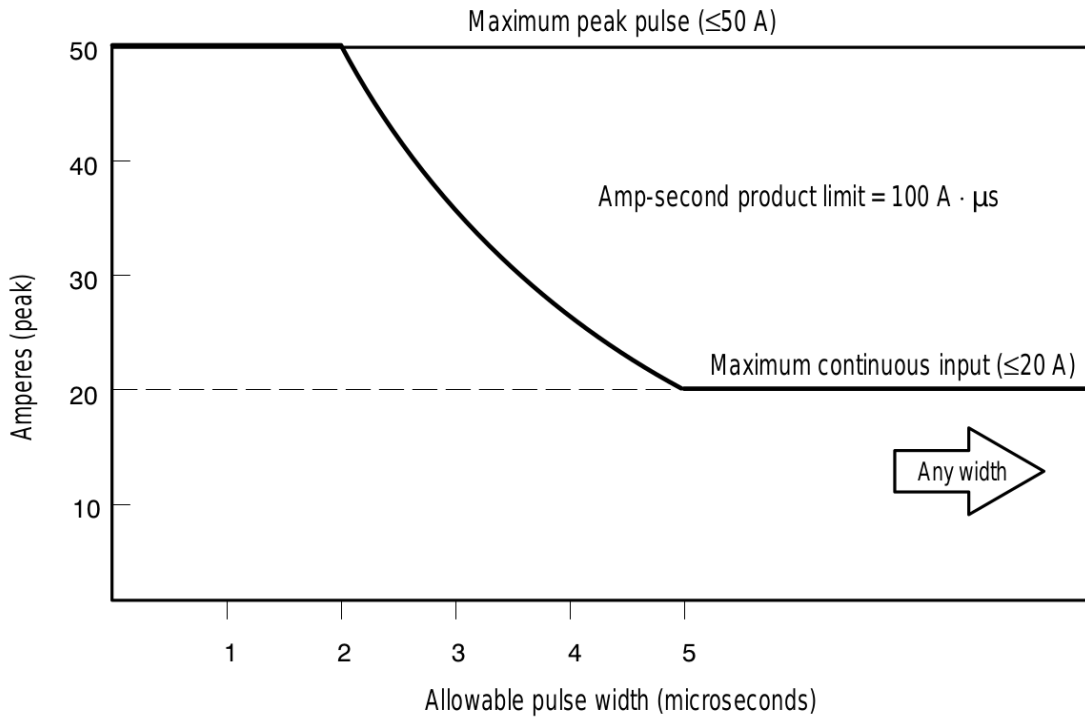
The maximum current drops from 20 A for frequencies above 20 kHz:



(<https://softsolder.files.wordpress.com/2018/06/tek-a6302-current-probe-max-current-frequency-derating.png>)

Tek A6302 Current Probe – Max Current Frequency Derating

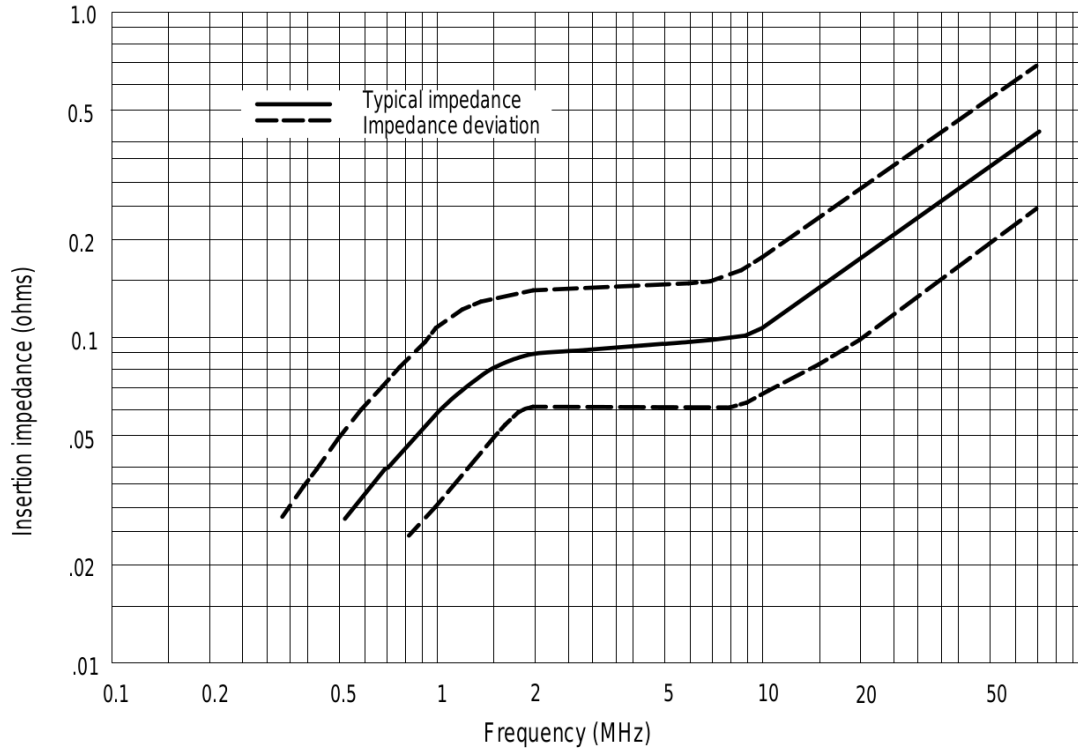
There's a 100 A·μs pulse charge limit:



(<https://softsolder.files.wordpress.com/2018/06/tek-a6302-current-probe-specified-operating-area.png>)

Tek A6302 Current Probe – Specified Operating Area

Because the probe is actually a pulse transformer, its internal termination imposes a (small) load on the input circuit:



(<https://softsolder.files.wordpress.com/2018/06/tek-a6302-current-probe-insertion-impedance.png>)

Tek A6302 Current Probe – Insertion Impedance

The specs are 100 mΩ at 1 MHz and 500 mΩ at 50 MHz, which means the load is essentially zilch for the circuits and signals I deal with.

The Tektronix [Probes for Current Measurement Systems](https://www.tek.com/datasheet/current-measurement-system-probes) (<https://www.tek.com/datasheet/current-measurement-system-probes>) has some useful descriptions.

Memo to Self: Should any of those limits matter, rethink what you're doing.

[An interesting story](http://w140.com/tekwiki/wiki/AM503) (<http://w140.com/tekwiki/wiki/AM503>) about the AM503 design from someone who lived through it.

[2018-07-23](#) / [2018-06-26](#) / [Memo to Self](#)

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