

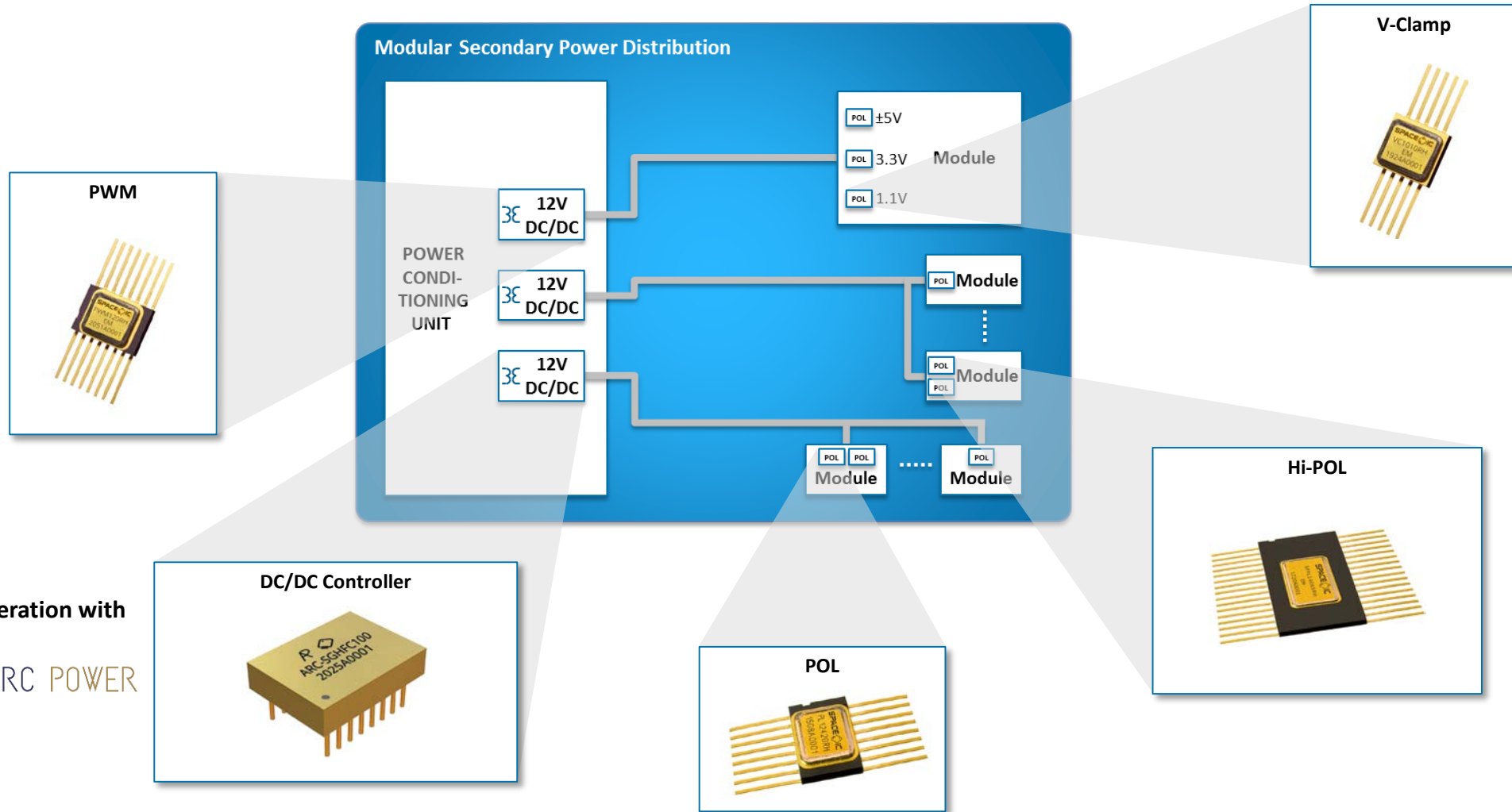


Small Hybrid DC/DC Converter Controller Based on Innovative Rad-Hard PWM IC AMICSA 2021

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Tobias Salomon ▪ Uwe Gieselmann

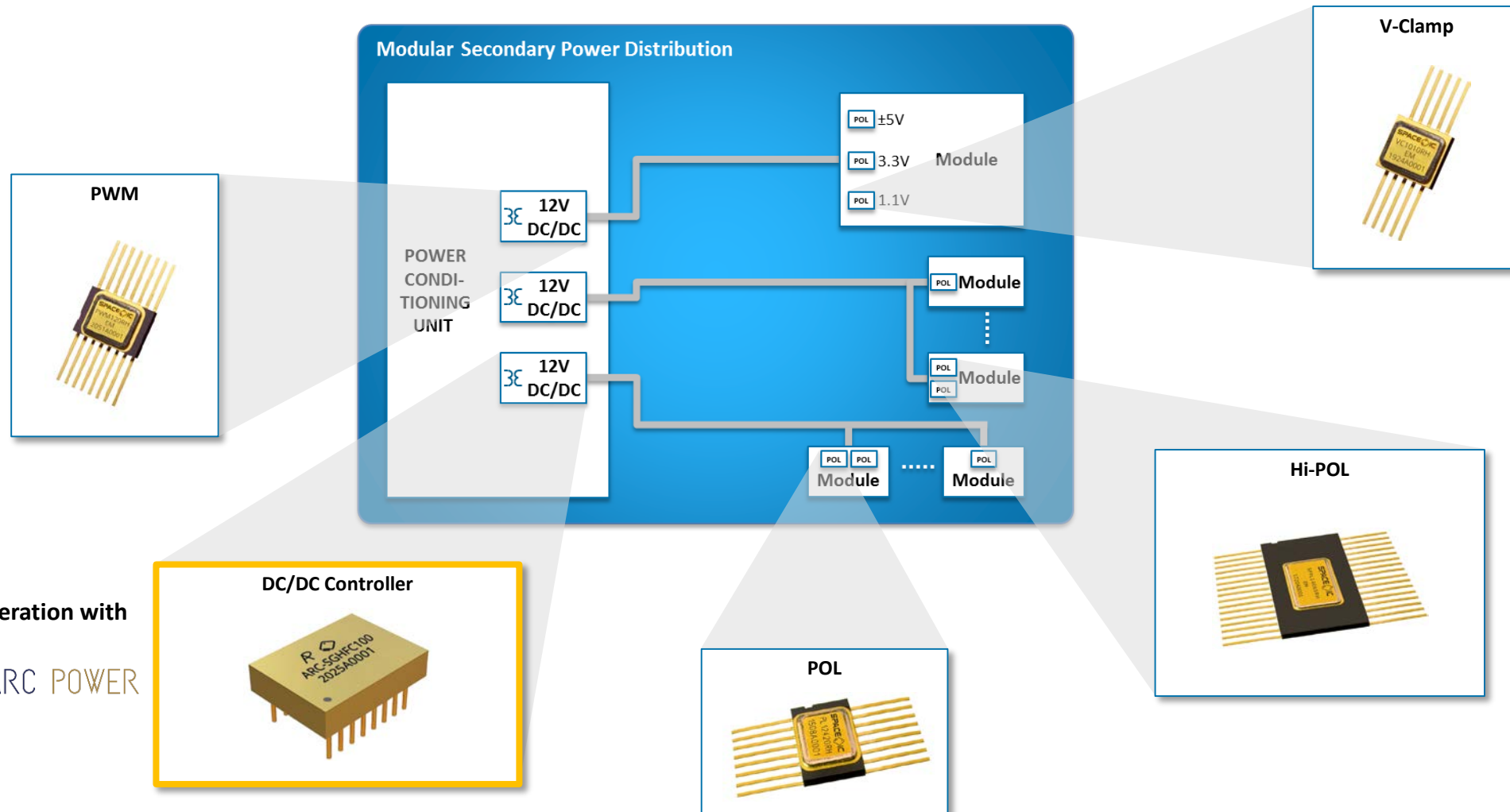


Power Management Products



Cooperation with
 ARC POWER

Power Management Products

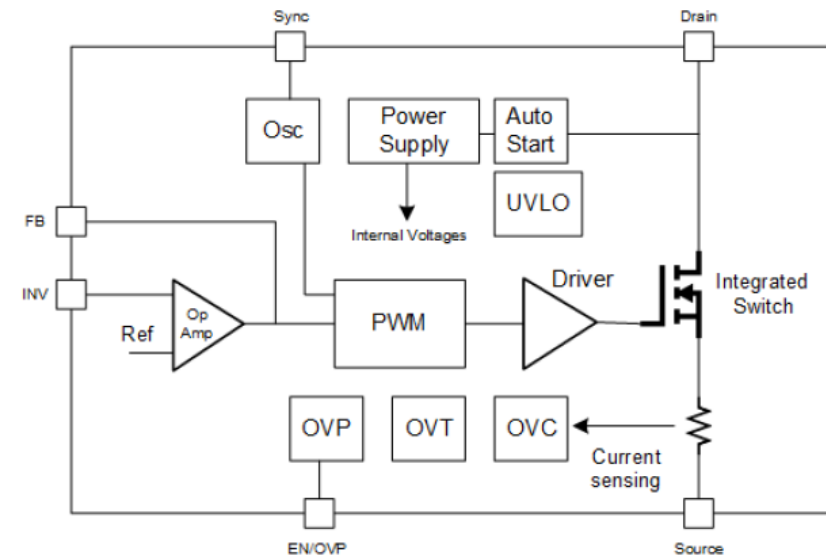




Redundancy DOES NOT necessarily "resolve" propagating failures!

Integrated DC/DC Converter Controller is desired

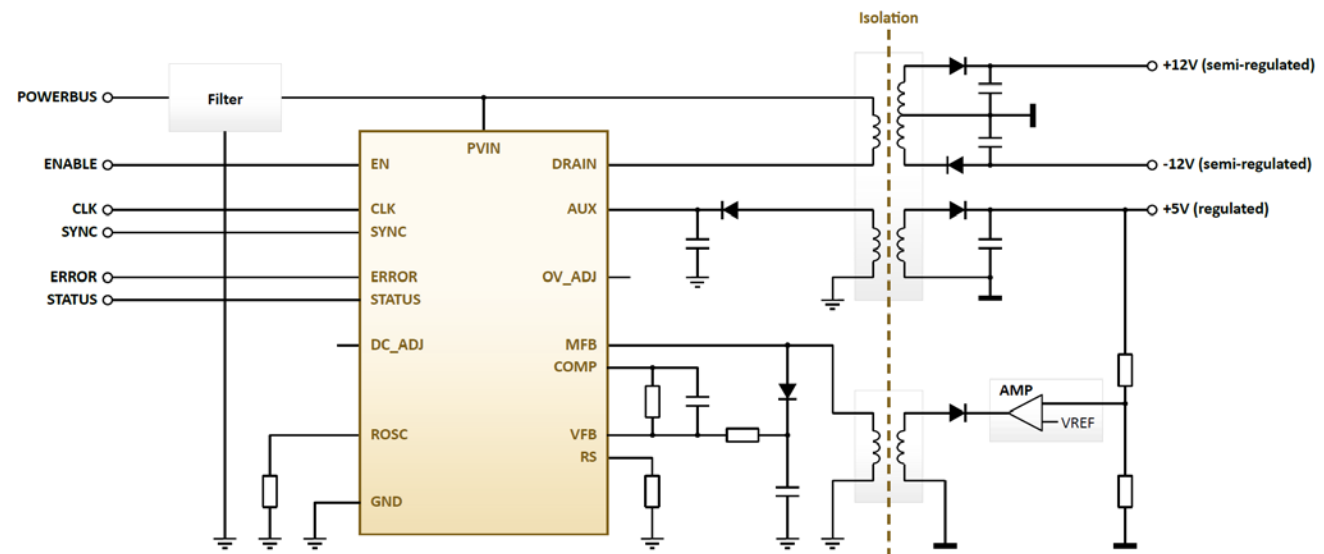
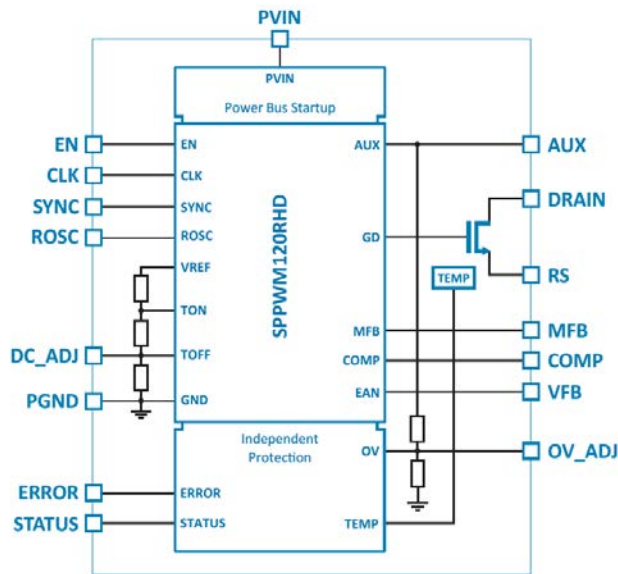
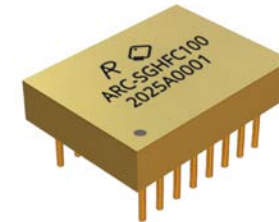
- Integrated power switch
- Integrated start-up from power bus
- Integrated protections: OV, UV, OC, OT
- Protections independent from PWM control
- Integrated regulation for non-isolated feedback



DC/DC Hybrid

European DC/DC converter controller with integrated power switch

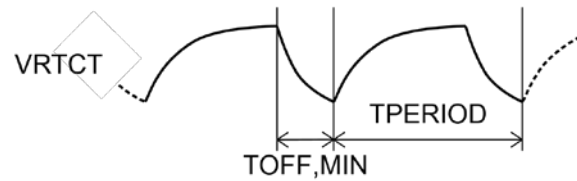
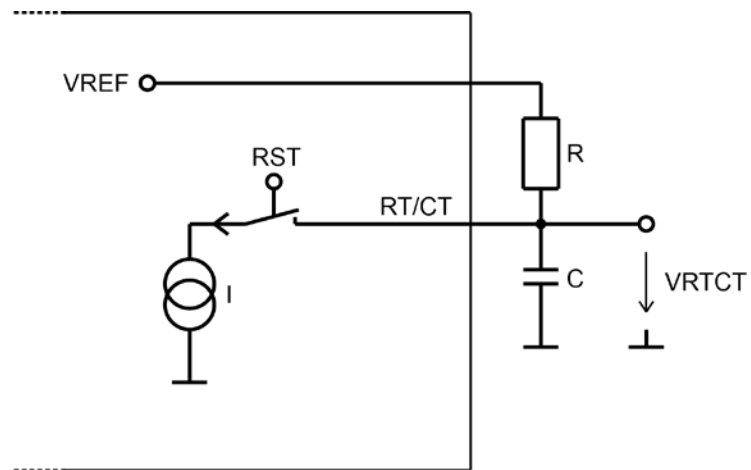
- Isolated and non-isolated converter topologies
- Up to 15W output power from 18V - 105V input power bus
- DC/DC converter design effort limited to magnetic components, diodes and passives
- SPACE IC SPPWM120RH inside - cooperation project with ARC POWER, Switzerland



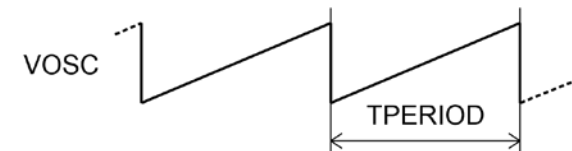
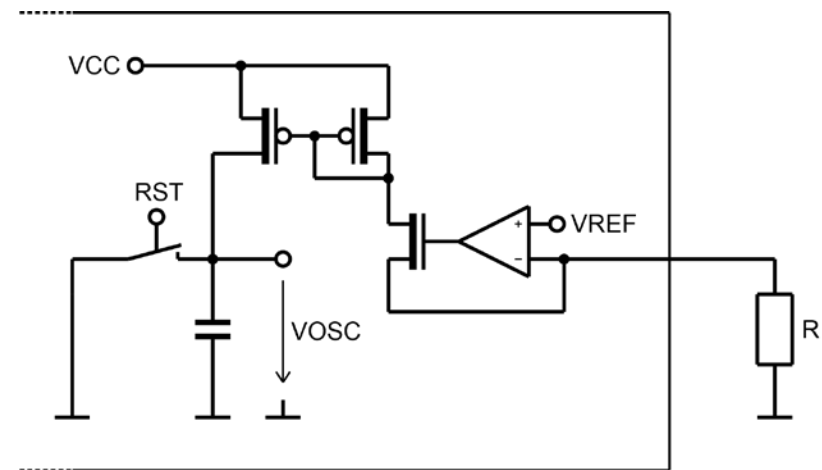
Example: Oscillator



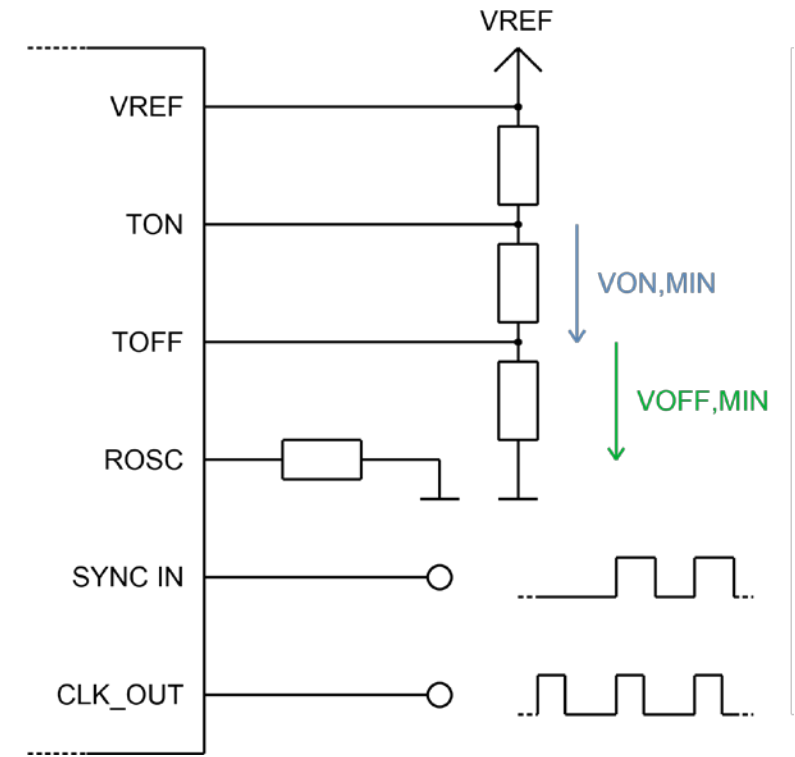
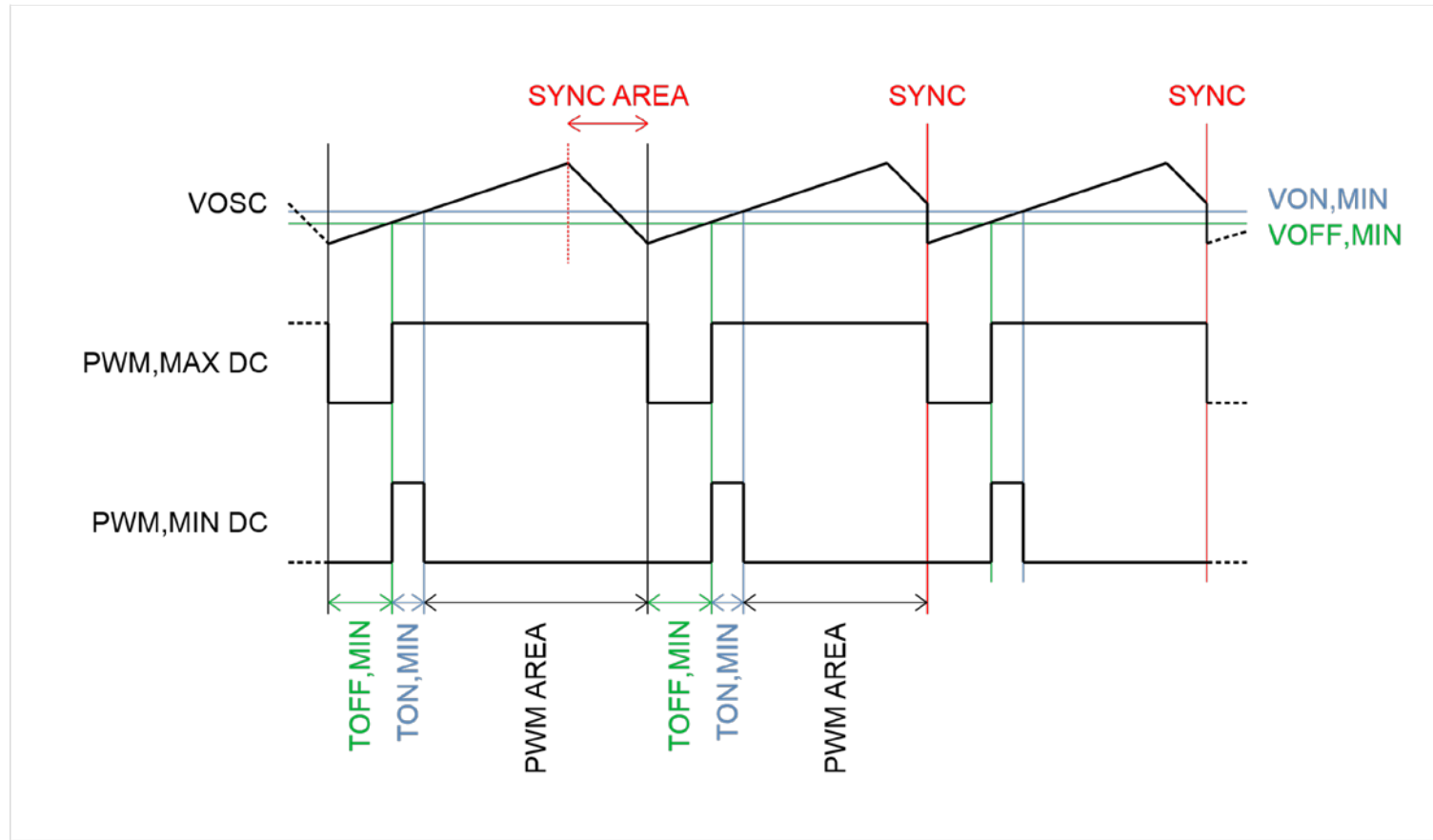
Traditional Implementation



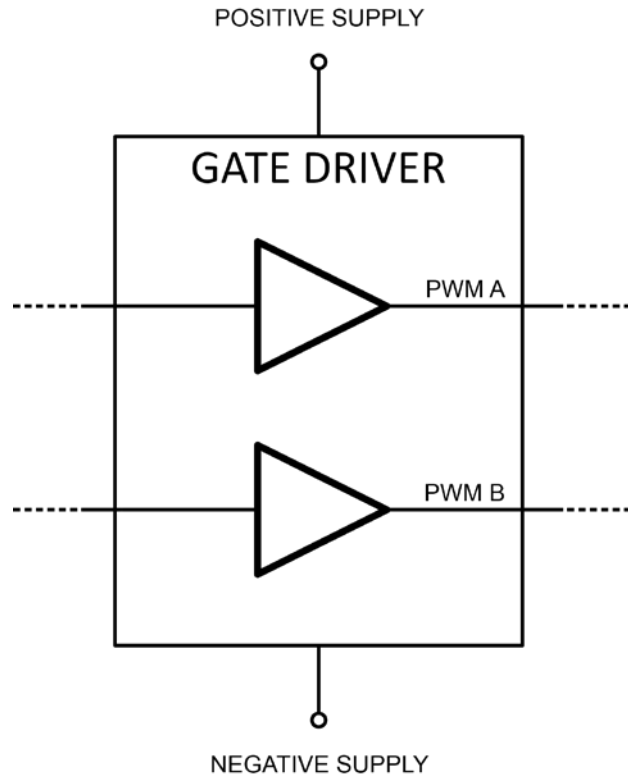
Proposed Implementation



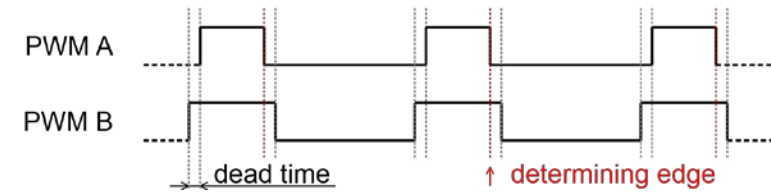
Example: Oscillator



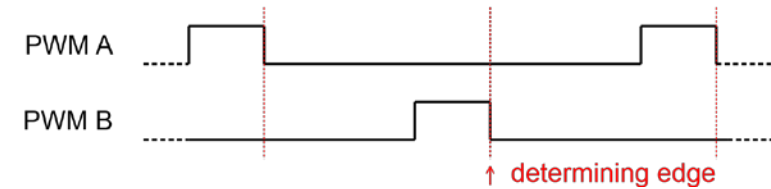
Gate Driver Polarity



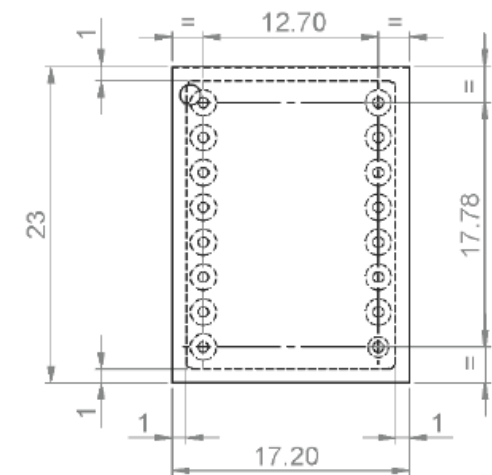
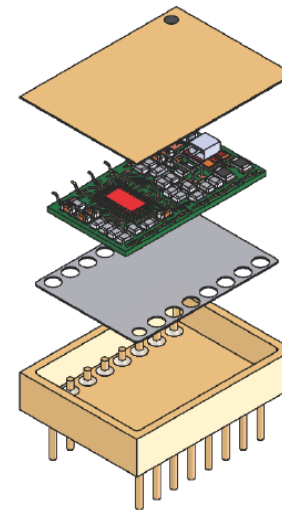
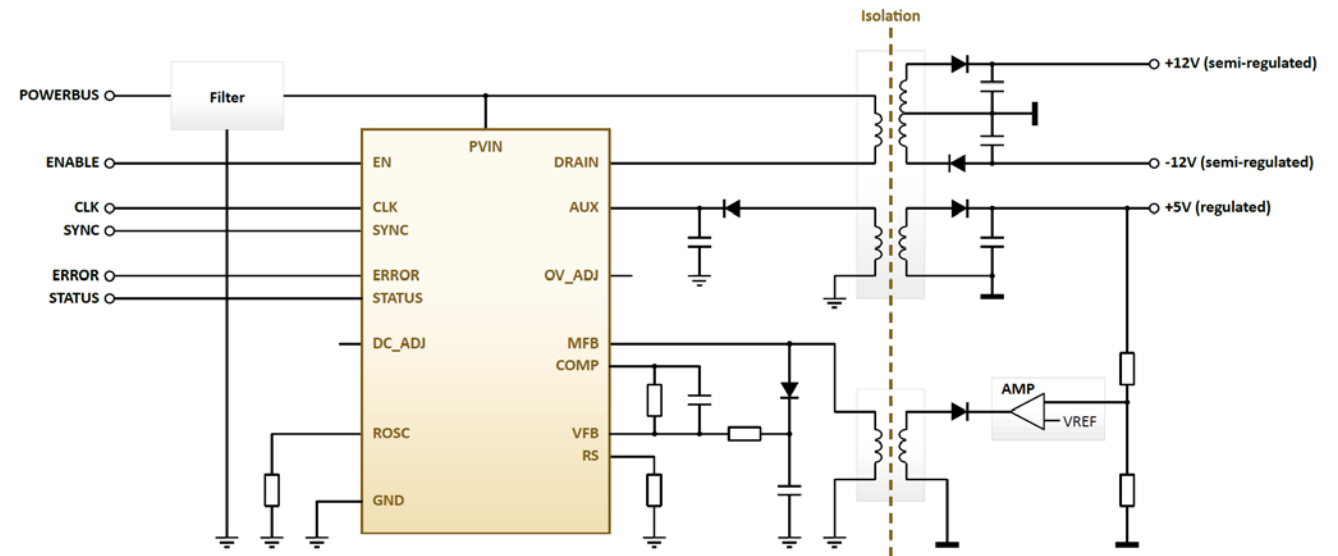
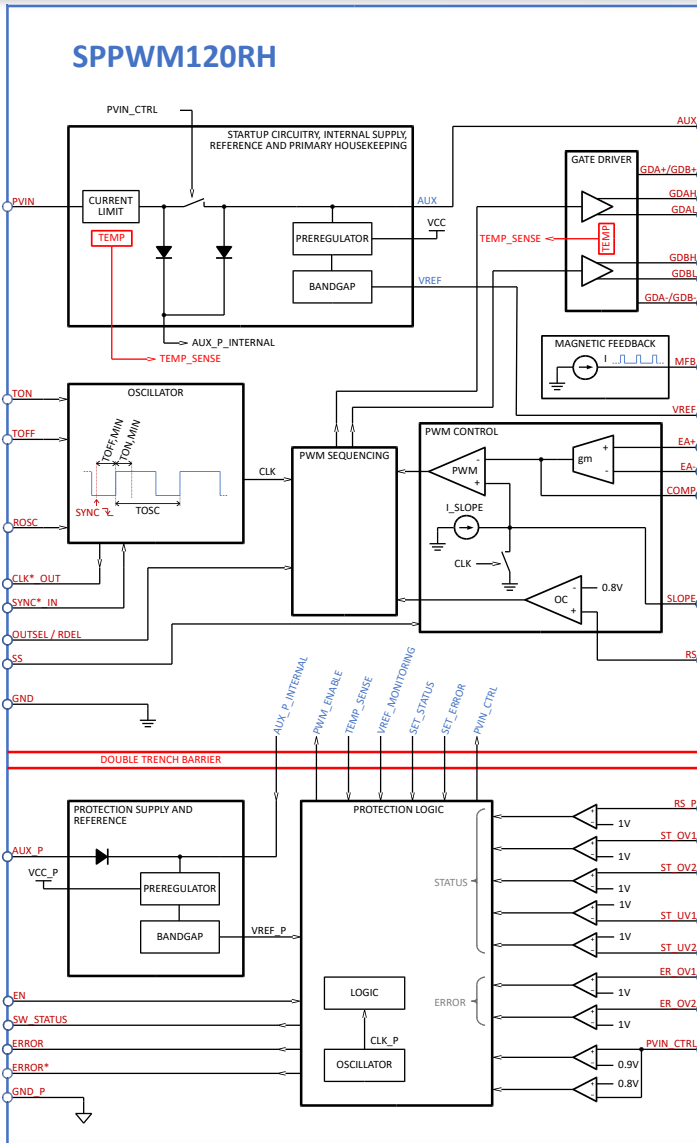
Low-Side Active Clamp:



Toggling:



PWM IC Integration





DC/DC Converter Controller is designed:

- Easy applicable and versatile
- Robust parameters
- Simple parameter settings inside hybrid
- Separated protection on die
- Small footprint
- Test results will follow



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***Thank you for
your attention!***

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