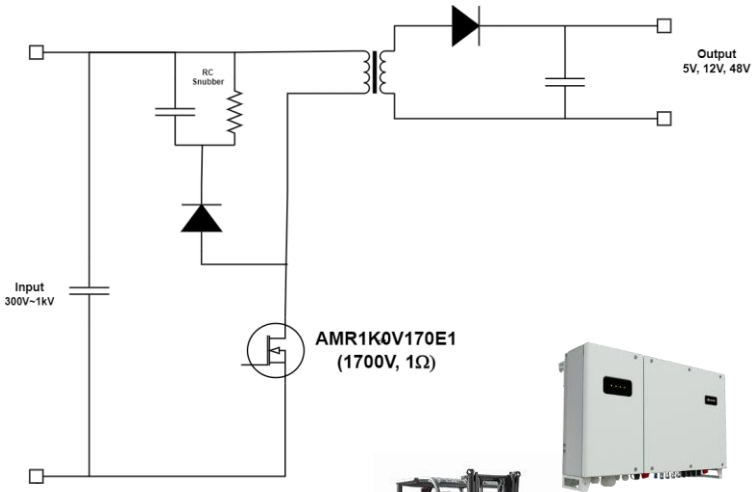
Application Brief

Analog Power Conversion Electronics, LLC

Use of SiC MOSFET Simplifies Aux Power Supply Design & Lowers Cost.

Applications

- Motor drives
- PV inverters
- BESS
- UPS Systems
- Modular Multilevel Converter



Highlighted Products***

- **AMR1K0V170E1** – SiC MOSFET, 1700V, 1Ω, TO-247

AMR1K0V170E1 Benefits

- High withstand voltage offers sufficient amount of headroom
- 1Ω Rds(on) supports up to 60W of output power
- High Temp Operation – 175°C
- Fast Body Diode reduces switching losses
- High frequency of operation

Why APC

- State of the art SiC design and manufacturing per latest Industry standards
- Amongst industry's shortest lead time
- Designed in the U.S., Built in the Philippines.

Background

Auxiliary power supplies have become an essential part of electronic devices in multiple industrial applications such as motor drives, PV inverters, UPS systems, and modular multilevel converters. The common high voltage DC link or bus is used to provide a low voltage (5 V~48 V) source for powering equipment such as control circuits, sensing circuits, and cooling fans. These auxiliary power supplies are required to operate from a wide input voltage range, typically from 300 V up to 1000 V, due to the DC link voltage variation. Single-switch fly-back topology is the most common selection for this type of low-power DC-DC power conversion due to its simple structure, lowest component count, and low cost. [1] [2]

References

[1] Ray Ridley; Fly-back Converter Snubber Design; Switching Power Magazine; 2005

[2] Texas Instruments; UCCx8C4x BiCMOS Low-Power Current-Mode PWM Controller; Application Note; 2017

*** You can purchase samples of Luminus Power Semiconductor products **here.** Our authorized distributors are Avnet Electronics, Mouser and DigiKey.