

Cyntec Power Module Solutions for FPGA

MUN12AD05-SMFL

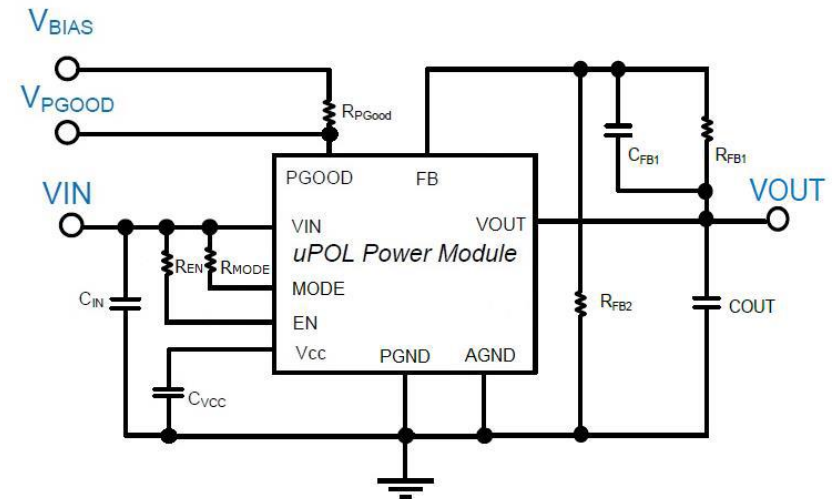
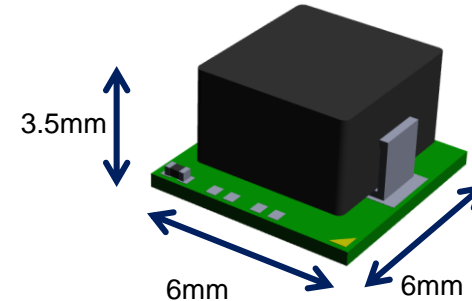
Cyntec Co., Ltd.



MUN12AD05-SMFL FEATURE & APPLICATION

FEATURES:

- High Density uPOL Module
- 5A Output Current
- Input Voltage Range from 4.5 to 20V
- Output Voltage Range
1.9V to 5V for MUN12AD05-SMFH
0.6V to 1.8V for MUN12AD05-SMFL
- 92% Peak Efficiency(@Vin=12V)
- Enable / PGOOD Function
- Force PWM Mode
- Protections (Non-latching: OCP, OTP, SCP, OVP)
- Internal Soft Start
- Compact Size: 6mm*6mm*3.5mm(Max)
- Pb-free for RoHS compliant
- MSL 2, 250°C Reflow



APPLICATIONS:

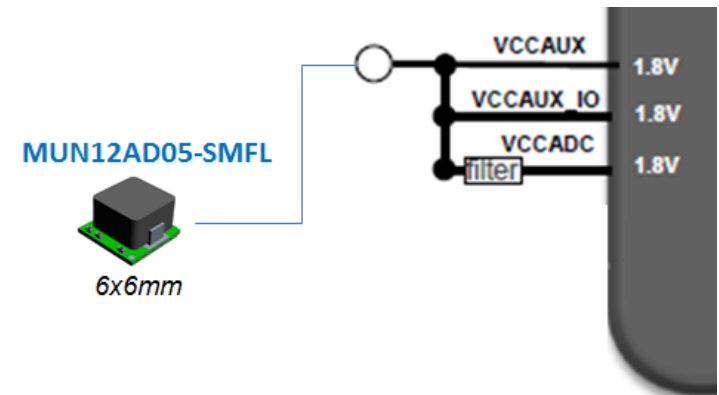
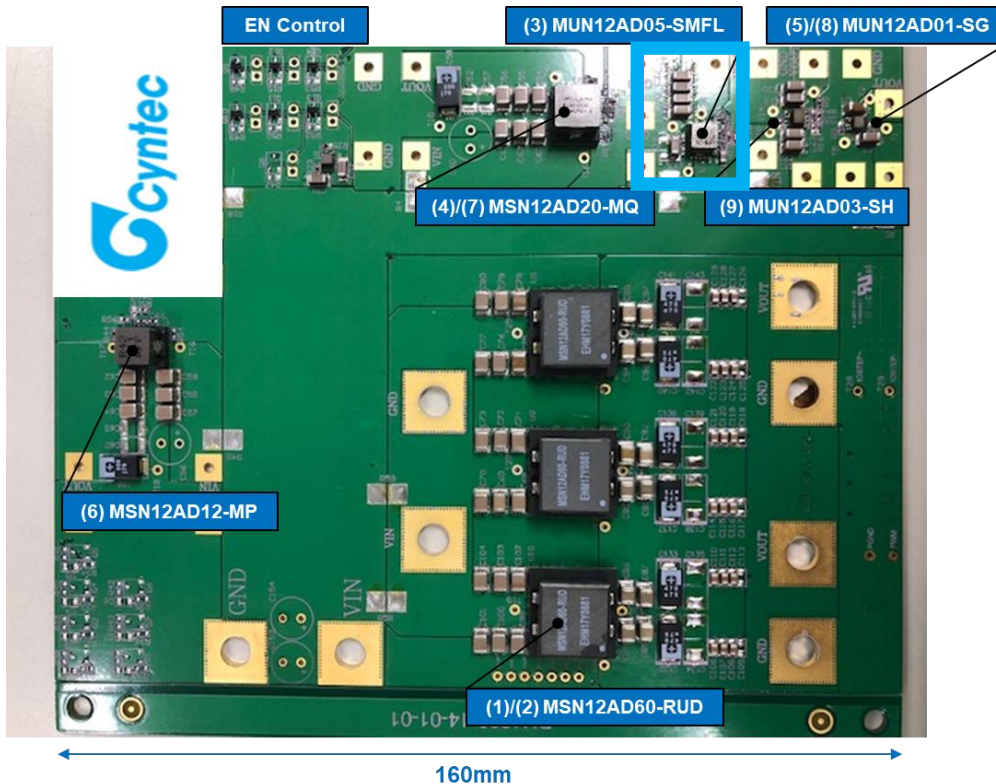
- Distributed Power Supply
- Server, Workstation, and Storage
- Networking and Datacom

MUN12AD05-SMFL for Xilinx XCVU13P

Specifications

VCCAUX/VCCAUX_IO/VCCADC

- 1.8V, current 0.5~4A, additional current may be needed for IO
- Transient response: $\pm 3\%$, 90% step, 10A/us
- Decoupling capacitance: 4x47uF



MUN12AD05-SMFL for Xilinx XCVU13P

Efficiency

Test Condition

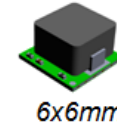
VIN=5V、12V、20V, VOUT=1.8V, IOU=5A

Module: Cyntec MUN12AD05-SMFL X 1pcs

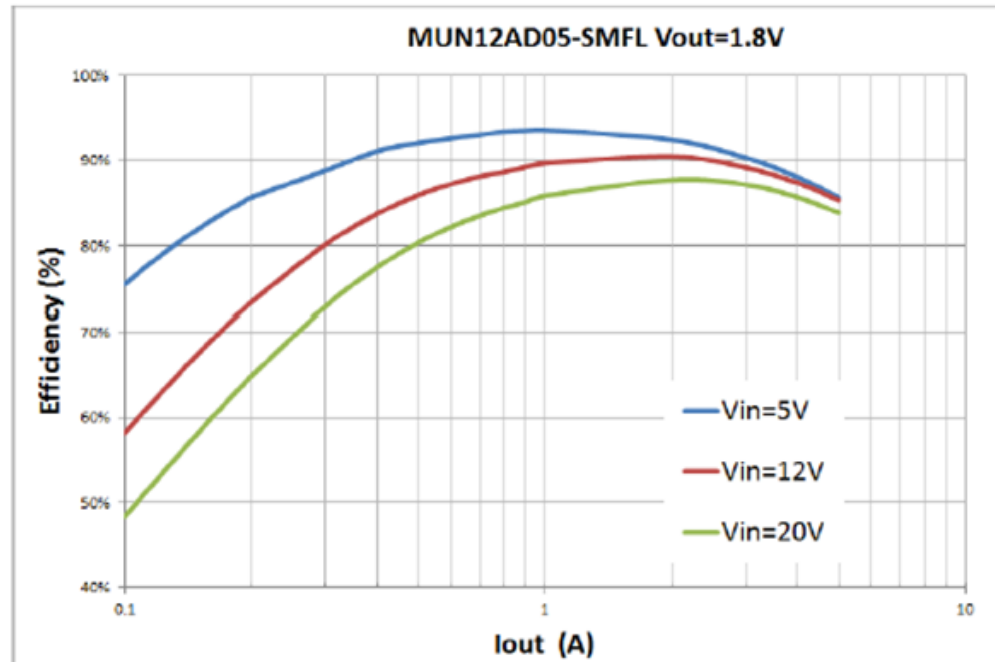
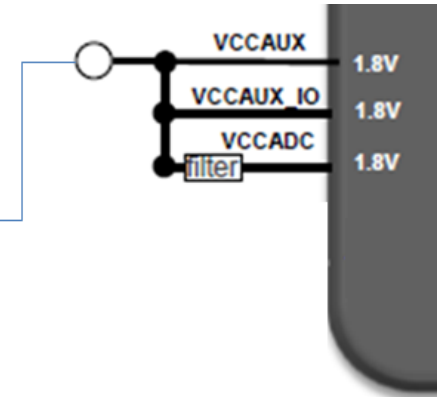
Input Capacitor: 10uF x 1pcs

Output Capacitor: 47uF x 4pcs

MUN12AD05-SMFL



6x6mm



VIN=12V VOUT=1.8V Pk-Pk Efficiency= 87% for IOU=4A

MUN12AD05-SMFL for Xilinx XCVU13P Ripple

Test Condition

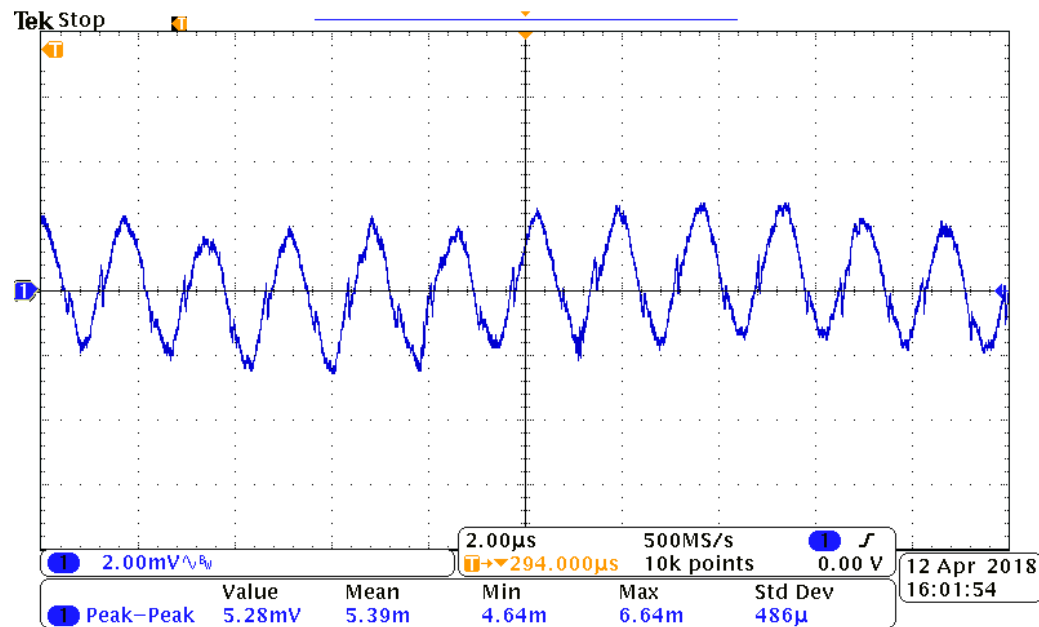
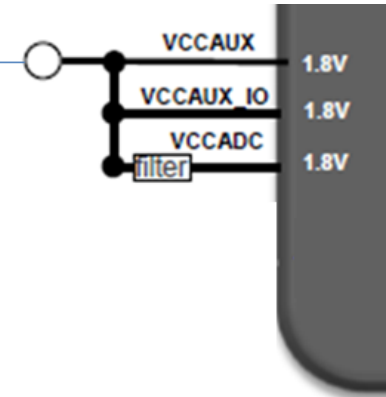
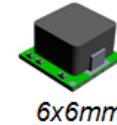
VIN=12V , VOUT=1.8V, IOU=5A

Module: Cyntec MUN12AD05-SMFL X 1pcs

Input Capacitor: 10uF x 1pcs

Output Capacitor: 47uF x 4pcs

MUN12AD05-SMFL



VOUT=1.8V Pk-Pk 5.28 mV for IOU=5 A

MUN12AD05-SMFL for Xilinx XCVU13P

Transient

Test Condition

VIN=12V VOUT=1.8V IOU=0~3.6A

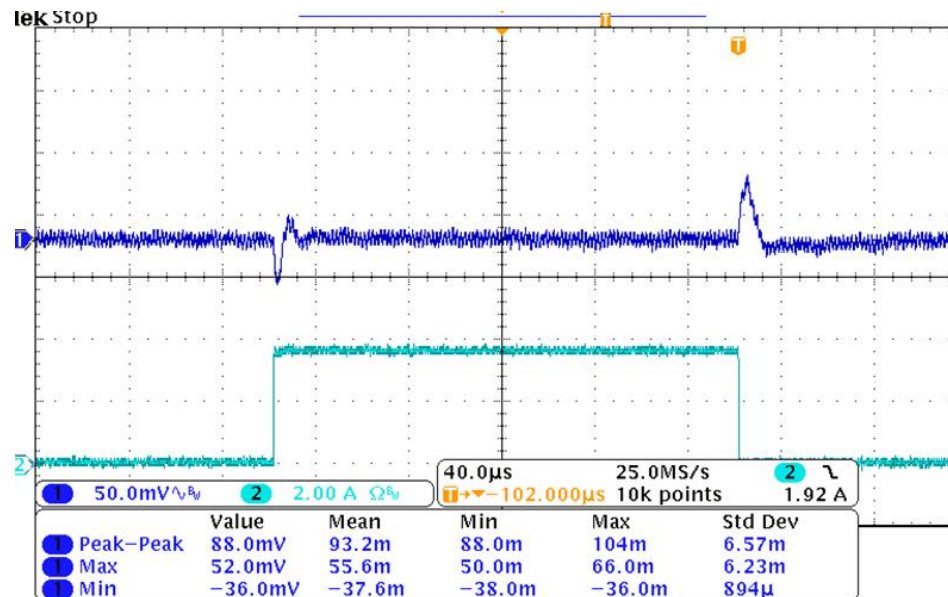
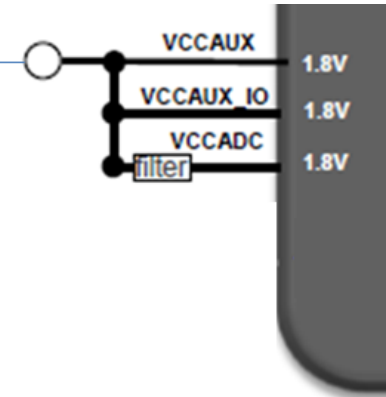
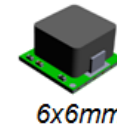
Module: Cyntec MUN12AD05-SMFL X 1pcs

Input Capacitor: 10uF x 1pcs

Output Capacitor: 47uF x 4 pcs

Transient $\pm 3\%$, >90% step, 10A/us with output

MUN12AD05-SMFL



VOUT=1.8V Pk-Pk Transient =93.2mV for IOU=0~3.6A

MUN12AD05-SMFL for Xilinx XCVU13P Thermal

Test Condition

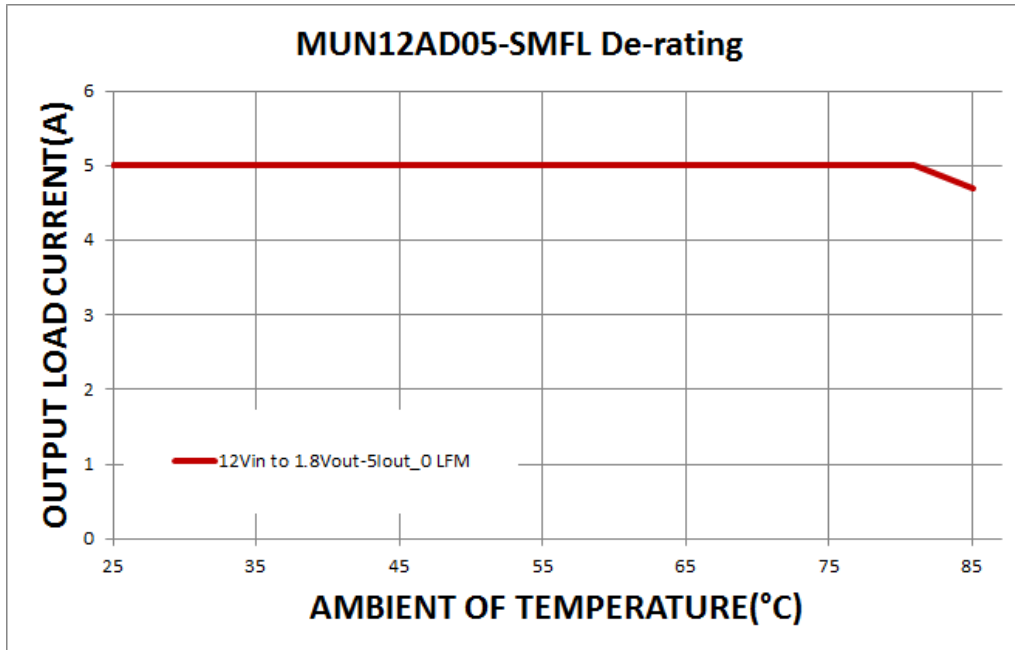
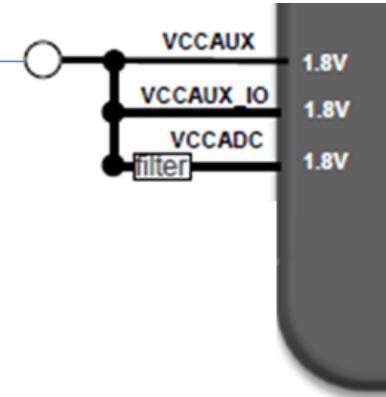
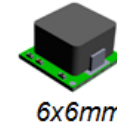
VIN=12V VOUT=1.8V IOUT=5A

Module: Cyntec MUN12AD05-SMFL X 1 pcs

Input Capacitor: 10uF x 1pcs

Output Capacitor: 47uF x 4pcs

MUN12AD05-SMFL

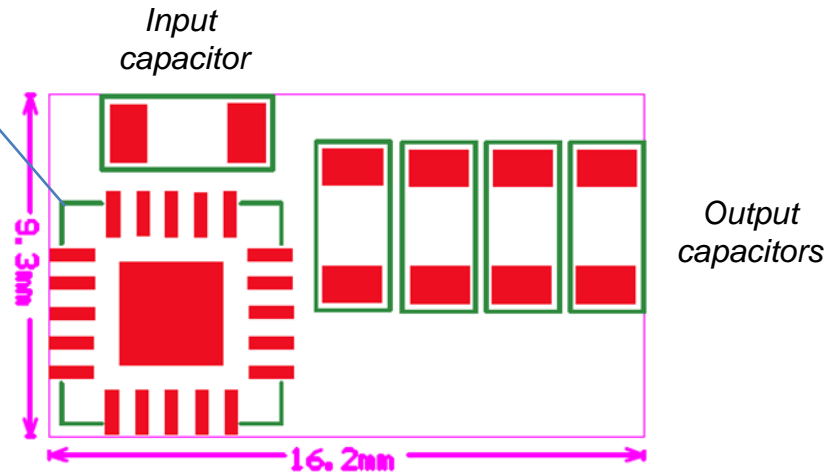
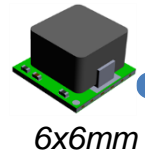


0 LMF 81°C De-rating

Layout Example of the 5A module

(Layout is for reference only --- single-sided SMT. Further optimization is possible in terms of output characteristics and actual application environment)

MUN12AD05-SMFL



Remarks

- Input capacitance: 10uF
- Output capacitance: 47uF x4pcs
- Arrangement could be optimized based on output transient requirements