AC input protection, soft-start/standby, Fan controller with LDO

J1 — PF0030/PC — L, N, PE

SW1 — DF62J12S2AHQA — 1, 1A, 2, 2A

AC_L_IN, AC_L_OUT, AC_N_IN, AC_N_OUT

VAR1 ERZE14A431
VAR2 ERZE14A431

SAR1 CG2-470L or 2027-47-BLF

ZD1 1.5KE400CA
ZD2 1.5KE400CA

J2 4907
J3 4907
J4
SWEB 8094 AU/GN
PE

NTC1 B57236S0200M

Q1 BTA26-600 — A1 G A2
R1 2K2

C2 47n/400V (X2)

KK1 HS-142-25
Mount Q1 and Q2 on KK1

Q2 BTA26-600 — A1 G A2
R3 2K2
R4 330R/2W

OK1 MOC3052 — 6 4 1 2

OK2 MOC3062 — 6 4 1
R6 330R/2W

+5V
R2 270R
PWR_DIR_OUT
Q3 2N7002 — PWR_DIRECT — X3-12
R5 47K — GND

R9 270R
Q4 2N7002 — PWR_SSTART — X3-11
R10 47K — GND

C1 47n/400V (X2)
AC_OUT_L
AC_N_OUT

R7 330R/2W
R8 330R/2W

DS1013-16SSIB1
X3-1
X3-2 — MBOOT

39-28-1063
X1-1
X1-4

39-30-1039
X2-1
X2-2
X2-3

X1-2
X1-5
PE
X1-3
X1-6

12V DC Fan speed controllers

IC1 BD00FC0WFP-E2 — VCC, EN, VO, FB, GND
C4 N.C.
GND
+3V3

+12V
JP1 47053-1000
C3 1u — X4-2
X4-1
FAN_OUT+ — X5-2
C5 N.C.
FAN_OUT- — X5-1 N.C.
JP2
GND

R11 39K
C6 EEEFK1V470P
D1 SKL14
R12
R13 3K3
C8 1u
GND

IC2 MAX31760AEE+
I2C address: 0xAE (optional 0xAC)
SCL, SDA, A0, A1, A2, VDD, PWM, TACH1, TACH2, DXP, DXN, GND, ALERT, SHDN, FF/FS

X3-16
C7 1u
C9 100n
GND
+3V3

X3-13 — SSCL
X3-14 — SSDA
JP3
GND
+3V3

X3-15 — NFAULT
R19 4K7
R20 N.C.
+3V3

R14 1K
R15 1K
R16 4K7
GND

R17 10R
C10 100n
GND

R18 1K
JP4
+3V3

R21 N.C.
C11 N.C.
ZD3 N.C.
ZD4 N.C.
GND
GND

PWM_OUT — X4-4 / X5-4
FAN_SENSE1 — X4-3
FAN_SENSE2 — X5-3

Connector for 3- or 4-pin DC 12V Fan
- Fan- (Black) 1
- Fan+ (Yellow or Red) 2
- Fan sense (Green or Yellow) 3
- Fan control (Blue) 4

16-pin MCU socket

Pin	Signal	Pin	Signal
PE 1		2	MBOOT
+12V (output) 3		4	+12V (output)
+5V (output) 5		6	+5V (output)
Gnd 7		8	Gnd
Gnd 9		10	Reserved (+Vaux)
PWR_SSTART (input) 11		12	PWR_DIRECT (input)
SSCL (I/O) 13		14	SSDA (I/O)
FAULT (output) 15		16	+3V3 (input)

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Bias power supply

TR1

AC_N_OUT — AC1 N
AC_L_OUT — AC2.1*2 L

+ V+*2
- V-*2

IRM-10-5 (optional IRM-20-5)

L1
VLS6045AF-3R3N

+5V

X3-5
X3-6

+ C12
EEEFK1V470P

TR2

ACN N
ACL L

+ V+
- V-

IRM-10-12

L2
VLS6045AF-3R3N

+12V

X3-3
X3-4

+ C13
EEEFK1V470P

X3-7
X3-8
X3-9

GND

GND
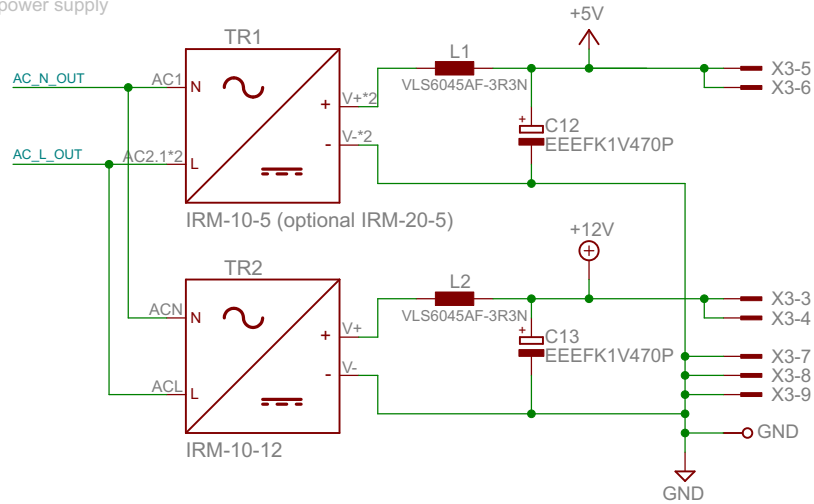
Standby mode indication

+5V

LED1
OSY5LU3E34X-3F1A

R22
470R

R23
47K

Q5
2N7002

PWR_DIR_OUT

GND

MCU BOOT0 switch

SW2
1
MBOOT — 2
3
SH1*2 +3V3

OS102011MA1QN1C
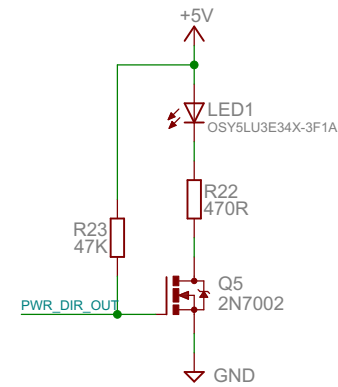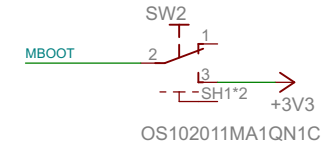
Mean Well +5 V and +12 V AC/DC modules
Standby indicator, BOOT0 switch

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