

3 Phase AC input, DC Output, High Voltage DC Power Supply (2KW)

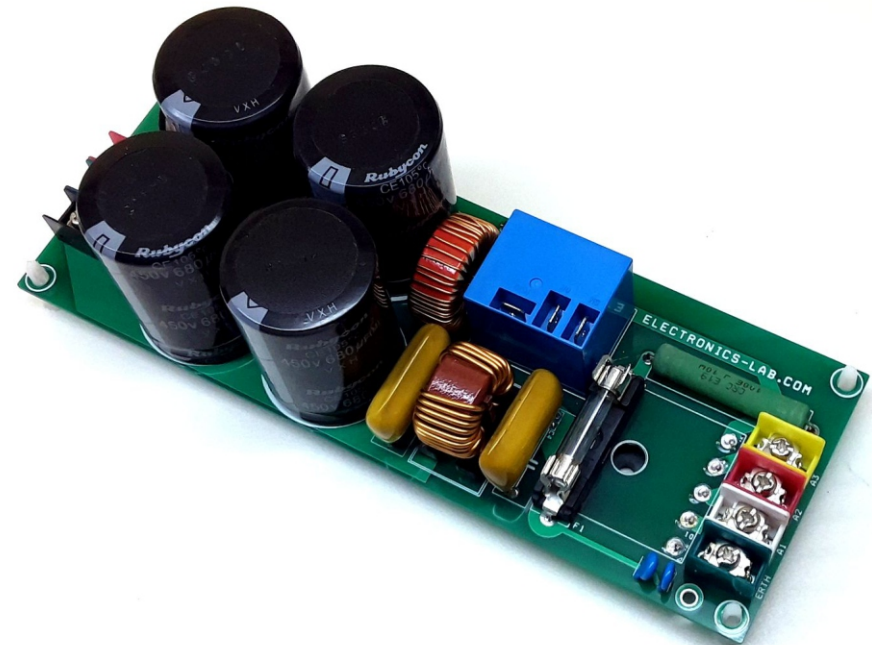
Although this power supply design is specific to the Intelligent Power Modules (IPM) VFD drives, high voltage boost converters, high voltage battery chargers, etc, the concept and circuit design may be used for any power supply that requires a high voltage output of up to 800V DC and 4 A. Since it is an unregulated power supply the output will depend on AC input voltage. The circuitry includes a passive EMI filter consisting of elements C8, C9, C4, T1, and L1. Bridge rectifier D1, R1 for inrush current protection, and a relay RL1 for soft powering up and reducing conduction losses in steady-state. 4 x electrolytic capacitors C2, C3, C6, C7 are used for buffering the rectified DC bus voltage, bleeding resistors R1, and R2 provided to discharge the DC bus capacitor after power off. It is advisable to use a heatsink for the bridge rectifier. Inrush current circuit requires 12-15V DC @ 80mA. Choose appropriate fuse as per current requirement. The relay takes care of the inrush current. It is important to switch ON the 12V-15V DC and 3phase power same time.

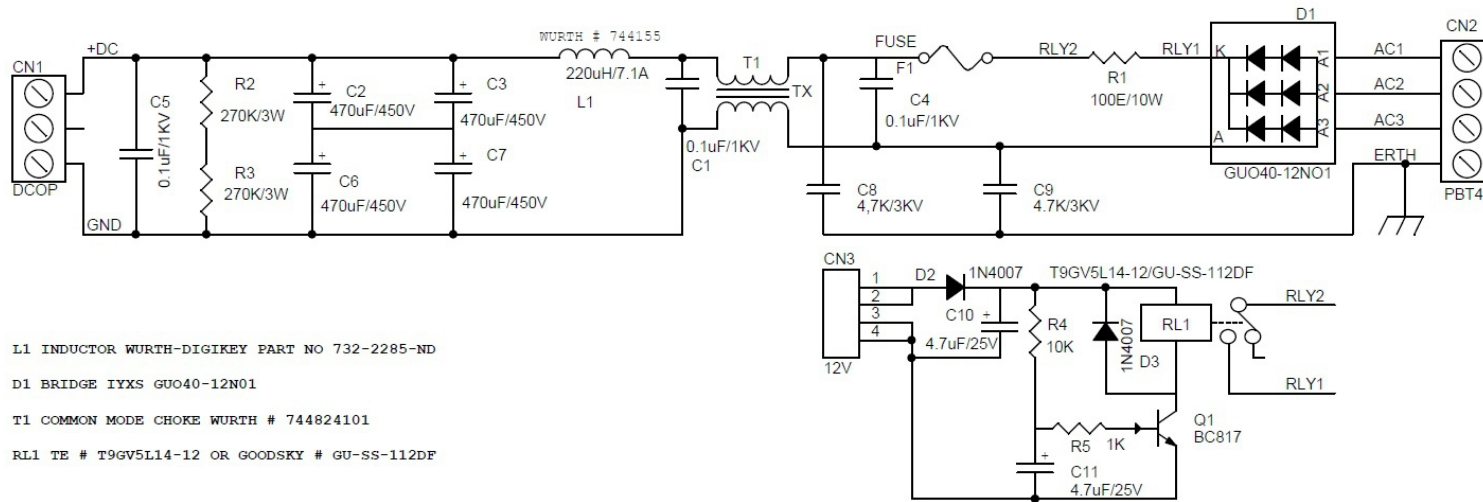
We have tested this power supply with Input 3 Phase 430V AC, Output 620V DC, Continued Current 5A, but it is advisable to use it at max 3A continued current.

Application: VFD Drives, AC Servo Drivers, High Voltage Battery Chargers, ZVS Drivers, High Voltage Inverters, High Voltage DC-DC Converters

Features

- Nominal Input Voltage 3 Phase 100V to 480V AC
- Output Depend on input AC Supply
- Output Current Continues 3Amps (Maximum 5 Amps)
- On Board EMI Filter
- On Board High wattage resistor for inrush Current
- On Board Relay for soft powering up and reducing Power Losses
- On Board Fuse for Short Circuit/Over Current Protection
- Screw Terminals (Barrier) for Easy Connections
- Logic Supply 12-15V for inrush Control Relay Circuit
- PCB dimensions: 206.37 x 75.56 mm





L1 INDUCTOR WURTH-DIGIKEY PART NO 732-2285-ND

D1 BRIDGE IYXS GUO40-12N01

T1 COMMON MODE CHOKE WURTH # 744824101

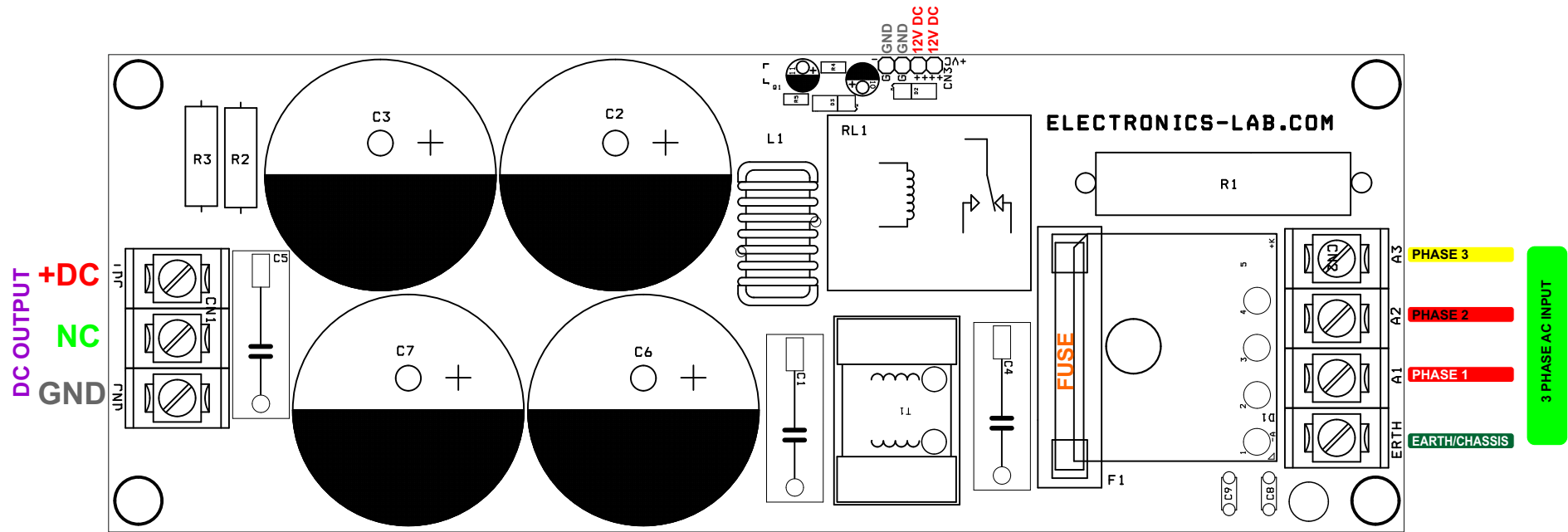
RL1 TE # T9GV5L14-12 OR GOODSKY # GU-SS-112DF

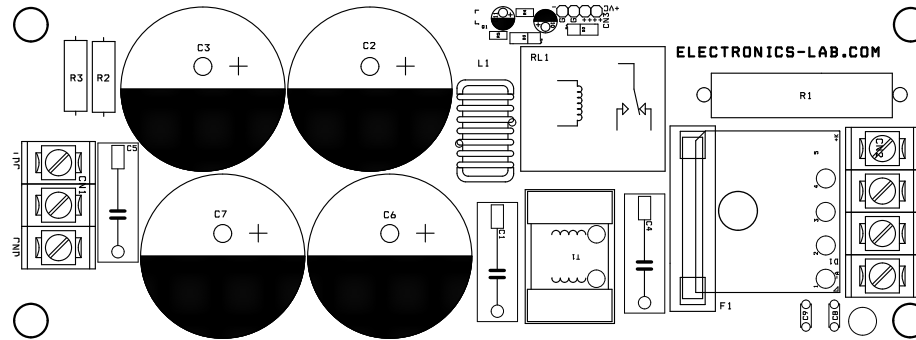




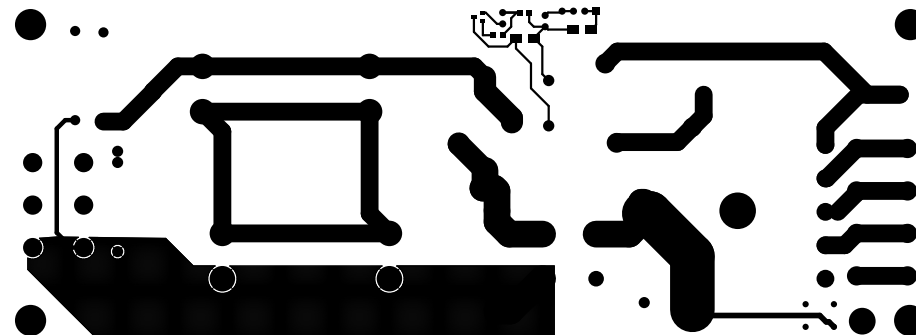
BOM						
NO.	QNTY	REF.	DESC.	MANUFACTURER	SUPPLIER	SUPPLIER PART NO
1	1	CN1	3 PIN BARRIER STRIP PITCH 9.5MM	ON SHORE TECH	DIGIKEY	ED2972-ND
2	1	CN2	4 PIN BARRIER STRIP PITCH 9.5MM	ON SHORE TECH	DIGIKEY	ED2973-ND
3	1	CN3	4 MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5317-ND
4	3	C1,C4,C5	0.1uF/1KV	KEMET	DIGIKEY	399-PHE450PD6100JR06L2-ND
5	4	C2,C3,C6,C7	470uF/450V	RUBYCON	DIGIKEY	1189-1975-ND
6	2	C8,C9	4.7KPF/3KV	TDK	DIGIKEY	445-181053-ND
7	2	C10,C11	10uF/25V	NICHICON	DIGIKEY	493-5953-ND
	1	D1	GUO40-12NO1	IXYS	DIGIKEY	GUO40-12NO1-ND
	2	D2,D3	1N4007	DIODE INCORP	DIGIKEY	S1MBDITR-ND
	1	F1	COVER FUSE	KEYSTONE	DIGIKEY	36-3576C-ND
	1	F1	FUSE	KEYSTONE	DIGIKEY	36-3576-ND
	1	F1	FUSE	LITTILE FUSE	DIGIKEY	0FLQ015.HXR-ND
	1	L1	220uH/7.1A	WURTH	DIGIKEY	732-2285-ND
	1	Q1	BC817	NEXPERIA	DIGIKEY	1727-2919-1-ND
	1	RL1	Relay 12V	TE	DIGIKEY	PB2355-ND
	1	R1	100E/10W	VISHAY	DIGIKEY	MRA12-100-ND
	2	R2,R3	270K/3W	VISHAY	DIGIKEY	BC270KW-3JCT-ND
	1	R4	10K 5% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
	1	R5	1K 5% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
	1	T1	1MH 10A COMMON MODE CHOKE	WURTH	DIGIKEY	732-1449-ND



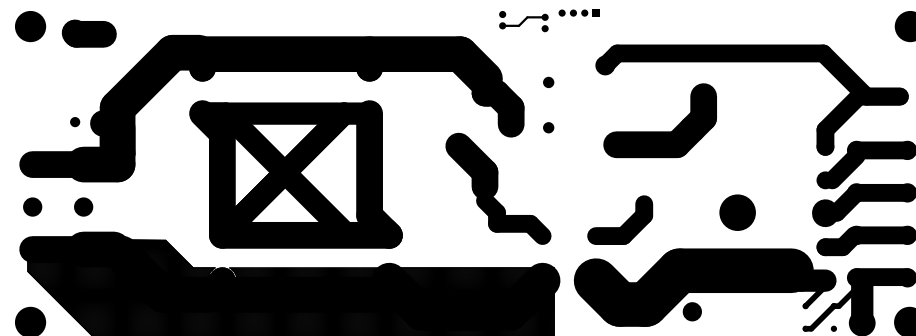




SILK SCREEN TOP



TOP LAYER



BOTTOM LAYER

