

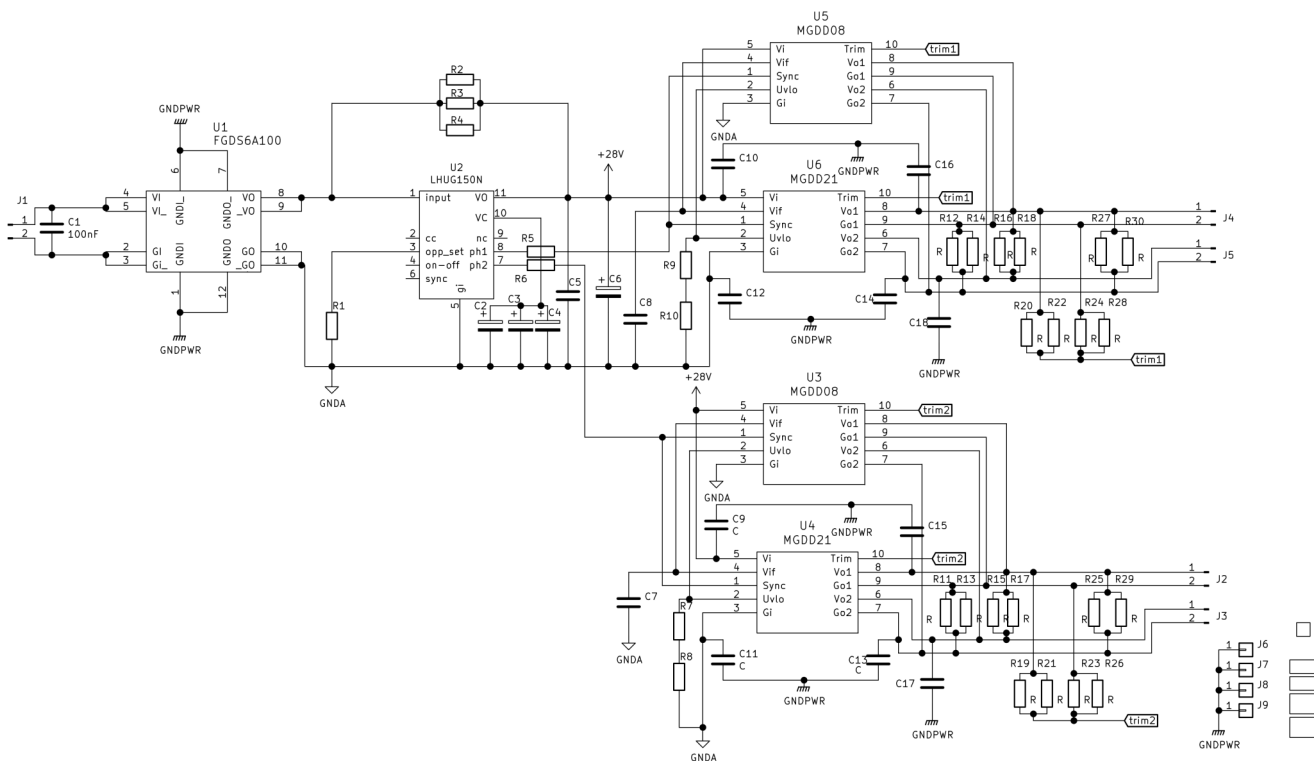
## 1-GTJ-2020 : JIG For FGDS6A100 MGDD08 MGDD21

### 1.1-Board Description

GTJ2020 is a test jig that can be used to evaluate converters from the MGDD08 or MGDD21 series, along with the LHUG150N input bus conditioner, and the FGDS6A100 EMI filter. Testing can be performed with regards to the Mil-STD1275, Mil-STD 704 and Mil-STD461 military standards.



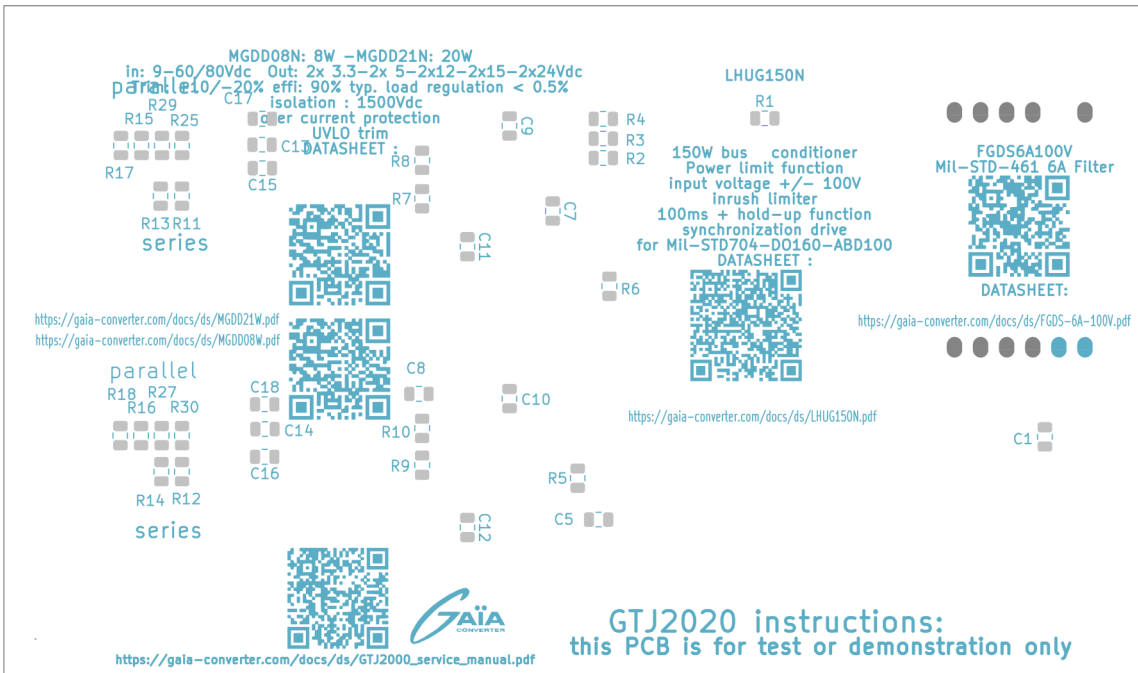
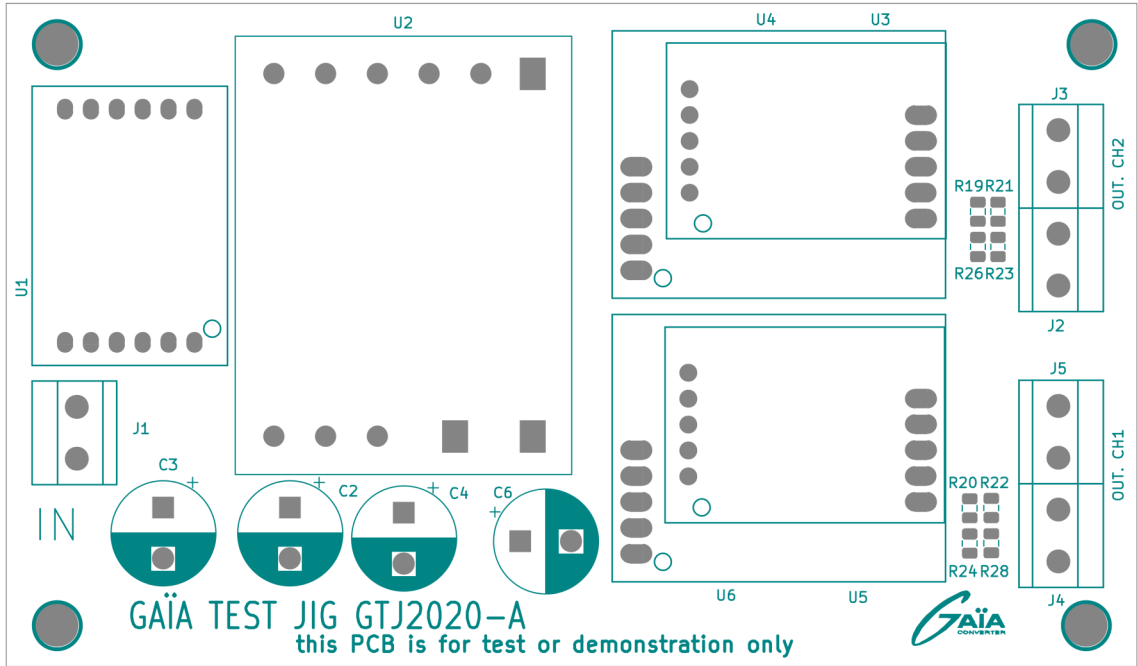
### 1.2-SCHEMATIC DIAGRAM



GTJ2020-A Schematic diagram  
U3/U4 and U5/U6 are double implantation components

## 1-GTJ-2020 : JIG For FGDS6A100 MGDD08 MGDD21

### 1.3-BOARD DRAWINGS

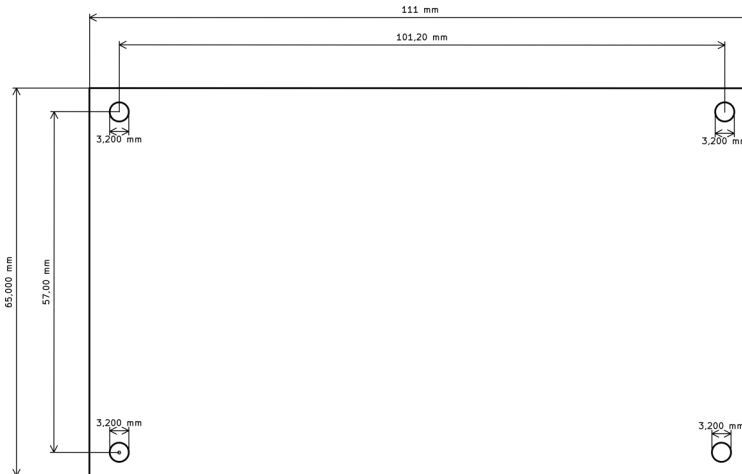


GTJ2020-A

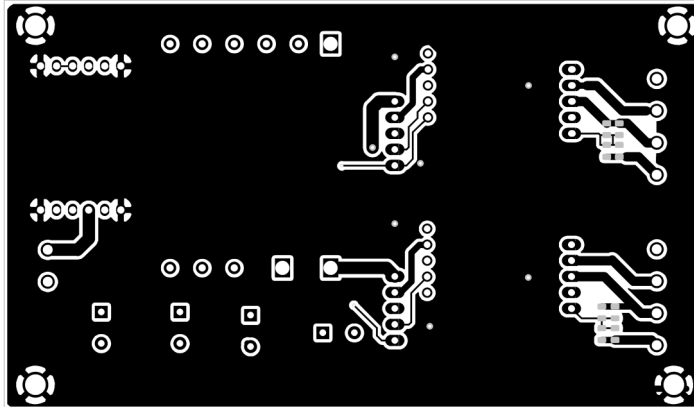
## 1-GTJ-2020 : JIG For FGDS6A100 MGDD08 MGDD21

### 1.3-BOARD DRAWINGS

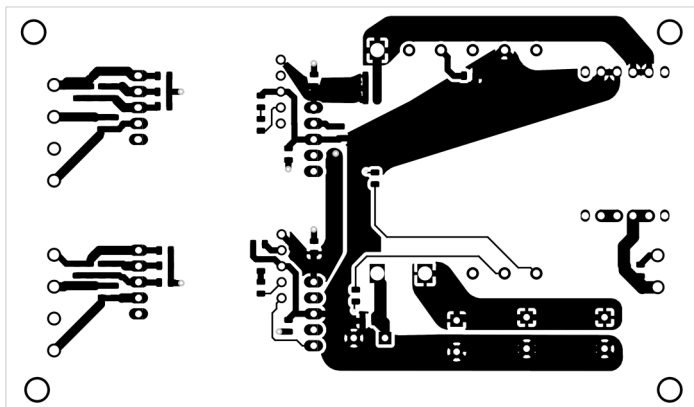
General tolerances +/- 0.2  
PCB thickness : 1.6 mm



Copper top layer



Copper bottom layer



GTJ2020-A

## 1-GTJ-2020 : JIG For FGDS6A100 MGDD08 MGDD21

### 1.4-BILL OF MATERIALS

designator	description	Qty.	possible part-number	Supplier	comment
C6	47µF 100V	1	EKMG101ELL470MJC5S	CHEMI-CON	
C1,C7,C8,C5	100nF 100V MLCC	4	C0805C104J1RACTU	KEMET	
C2,C3,C4	100µF / 100V	3	ECA2AHG101	Panasonic	
C9,C10,C11,C12,C13C14,C15,C16,C17,C18	10nF MLCC	10	08051C103JAT2A	AVX	Warning not for 1500V isolation
R2,R3,R4,R5,R6,R14,R18,R30,R27,R16,R12,R11,R13,R15,R17, R25,R29	0 OHMS	17	CRCW08050000Z0EAHP	Vishay	Configuration straps, to be populated according to desired configuration
R1,R19,R20,R21,R22,R7,R8,R9,R10,R23,R24,R26,R28	Any value	13	MCU08050D1001BP500	Vishay	Configuration resistors
J4,J1,J2,J3,J5	Terminal blocks	5	1760490000	WEIDMULLER	
U1	EMI FILTER 6A	1	FGDS6A100	GAIA-CONVERTER	
U2	INPUT BUS CONDITIONER	1	LHUG150N	GAIA-CONVERTER	Can be bypassed
U3/U4/U5/U6	8/21W DC/DC converter	2	MGDD08N/MGDD21N	GAIA-CONVERTER	

Bom is given as suggestion, any other components part numbers may suit.

### 1.5-COMPATIBLE MODULES

Compatible Modules	comment	Compatibles Modules	comment
MGDD08NB		MGDD21NB	
MGDD08NC		MGDD21NC	
MGDD08NE		MGDD21NE	
MGDD08NF		MGDD21NF	
MGDD08NI		MGDD21NI	
MGDD08EB		MGDD21EB	With shunt instead of LHUG150
MGDD08EC	With shunt instead of LHUG150	MGDD21EC	With shunt instead of LHUG150
MGDD08EE	With shunt instead of LHUG150	MGDD21EE	With shunt instead of LHUG150
MGDD08EF	With shunt instead of LHUG150	MGDD21EF	With shunt instead of LHUG150
MGDD08EI	With shunt instead of LHUG150	MGDD21EI	With shunt instead of LHUG150
FGDS6A100		MGDD21NCE	With shunt instead of LHUG150
LHUG150N			

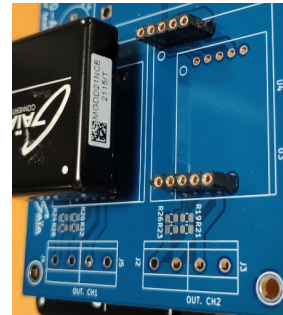
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### 1.6-ASSEMBLY & OPERATION

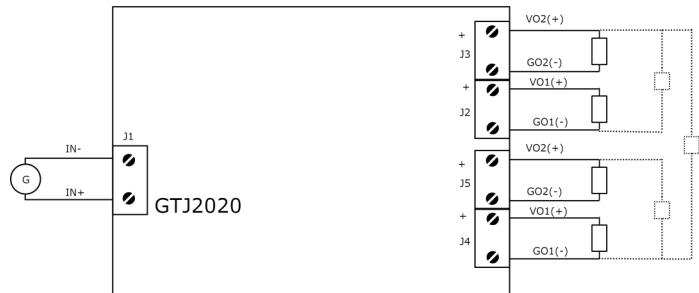
**Board Assembly :** Start populating smallest components (SMD resistors and SMD capacitors) on the bottom side of GTJ2020, and then on top side. Populate configuration resistors according to the desired output configuration (see table opposite). If R1 is not populated and LHUG150N used, the maximum power will be limited to ~30W at converters input. Populate then the 3 junction blocks, and aluminum capacitors. Gaia modules have to be populated at the last stage of assembly.

Installing sockets (E-TEC : BL1-036-G-700-1) in place of Gaia modules allow to use board as re-usable test jig. **Warning :** Performances given below are measured with modules assembled directly on board without sockets.

**Board Operation :** To operate the board, the wiring scheme opposite needs to be followed. The input Generator (or Lab. PSU) can be connected to J1, J2 to J3 will be wired according to desired output. **Warning :** do not populate R2, R3 ,R4, if LHUG150 is in place.

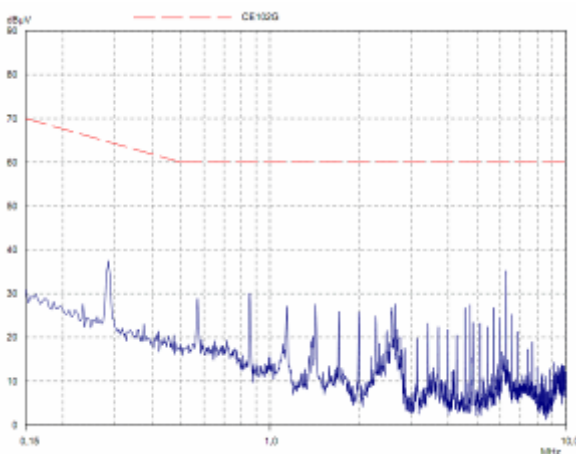


Socket E-TEC: BL1-036-G-700-1

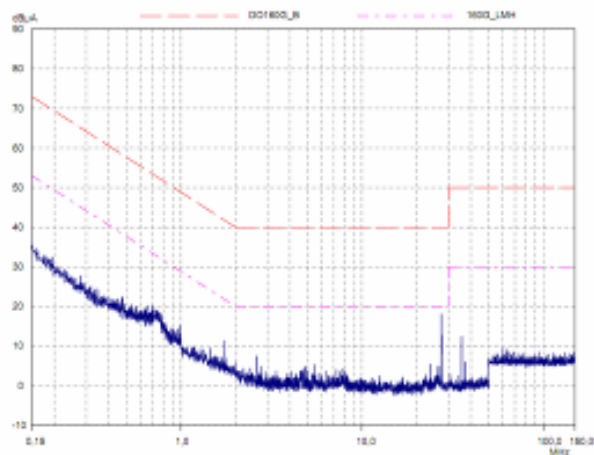


### 1.7-EXPECTED PERFORMANCES

#### 1.7.1-MIL-STD 461 DO 160



2 x MGDD08NF Mil-STD-461



2 x MGDD08NF DO-160