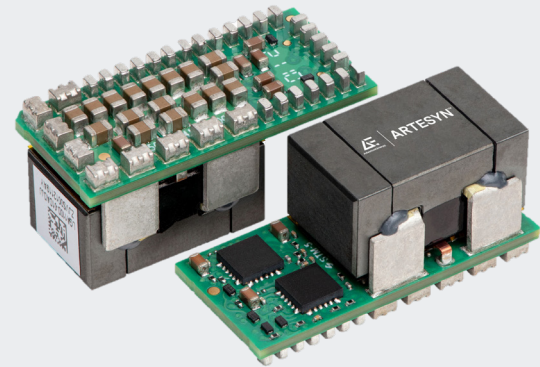


# ARTESYN LGA110D DUAL O/P NON-ISOLATED DCDC

110 Amp DC/DC Converter



Advanced Energy's Artesyn LGA110D power supply features a 7.5 to 14 VDC input voltage range and 350 W output power rating. It is a new design of high performance non-isolated DC-DC converter focused at providing low voltage and high current power conversion in a unit that can be used in multiple different modes and combinations. The unit has a 2-phase design which can be employed separately creating 2 output voltages, or they can be combined to create a single output voltage. Up to 4 modules can be used in such a way resulting in a single output of up to 440 Amps being created from 1 part number. The operational features include remote On/Off, variable output voltage as well as overcurrent protection, over-voltage protection, and over-temperature protection with control functions being provided by either pin-strap resistors or PMBus control for digital communications.

## SPECIAL FEATURES

- Improved substrate uniformity
- 2-phase design
- DUAL OR SINGLE output configuration possible
- Stacked module array (up to 4 units) with any combination of phase configurations
- High efficiency up to 96%
- Small size: 27.5 mm \* 12.8 mm \* 13.4 mm
- No minimum load requirement
- Wide operating temperature range
- Exceptional power density; 203 A/sq-inch

- Analogue or Digital control
- IPC9592B compliant (TBD)
- Tape and reel packaging
- Reflow compatible
- Possible to stack up to 4 for 440 A
- I-mon and T-mon supported
- Block-pin termination
- Automatic loop compensation

## SAFETY

- Designed to meet EN62368

## WARRANTY

- 2 years (Consult factory for extended terms)

## AT A GLANCE

### Total Current

110 A single-mode  
55 A dual-mode

### Input Voltage

7.5 to 14 VDC

### Variable Output

0.5 to 5 VDC



## PATENT

Pending [www.artesyn.com/ep-patents](http://www.artesyn.com/ep-patents)



# LGA110D DUAL O/P NON-ISOLATED DCDC

## TECHNICAL DATA

Electrical Specifications		
<b>Input</b>		
Input voltage range	7.5 VDC to 14 VDC ( $0.5\text{ V} \leq V_o \leq 3.3\text{ V}$ ) 10 VDC to 14 VDC ( $3.3\text{ V} \leq V_o \leq 5.0\text{ V}$ )	
Max input current	40 A	
Input capacitor (internal)	140 uF (10 uF*14 pcs)	
Input capacitor (external) recommended	88 uF (22 uF*4 pcs) <sup>1</sup>	
<b>Output</b>		
Independent output 1 and 2		
- 0.5 V to 1 V	55 A	
- 1.8 V	50 A	
- 2.5 V	45 A	
- 3.3 V	40 A	
- 5.0 V	35 A	
Combined output 1 and 2		
- 0.5 V to 1 V	110 A	
- 1.8 V	100 A	
- 2.5 V	90 A	
- 3.3 V	80 A	
- 5.0 V	70 A	
Efficiency @ Vin=12 V, Freq=500 KHz & Ta=25°C		
- 1.0 V at 110A	88.5%	
- 1.8 V at 100A	92.5%	
- 2.5 V at 90A	94%	
- 3.3 V at 80A	95%	
- 5.0 V at 70A	96%	
Max output power (watts)	350 W	
Output capacitor per output (external)	Dual Outputs 1990 uF	Single Output 3980 uF
<b>Control and Ambient Temperature</b>		
Operating ambient temperature	-40 degC to +85 degC	
Storage temperature	-40 degC to +125 degC	
Switching frequency	500 KHz @ 0.5 V to 5 V	

Note 1. Minimum: 4 x 22 uF/16 V 0805 ceramic caps (C2012X6S1C226M125AC or equivalent)

Note 2. Dual mode (2 outputs): 2 x 680 uF/6.3 V Polymer Tan caps (T530X687M006ATE010 or equivalent)

- + 6 x 100 uF/6.3 V X6S 1210 ceramic caps (GRM32EC80J107ME20L or equivalent)
- + 3 x 10 uF/16 V X6S 0603 ceramic caps (GRM188C81C106MA73 or equivalent)
- Single mode (1 output): 4 x 680 uF/6.3 V Polymer Tan caps (T530X687M006ATE010 or equivalent)
- + 12 x 100 uF/6.3 V X6S 1210 ceramic caps (GRM32EC80J107ME20L or equivalent)
- + 6 x 10 uF/16 V X6S 0603 ceramic caps (GRM188C81C106MA73 or equivalent)

TECHNICAL DATA (CONTINUED)

Model Numbers

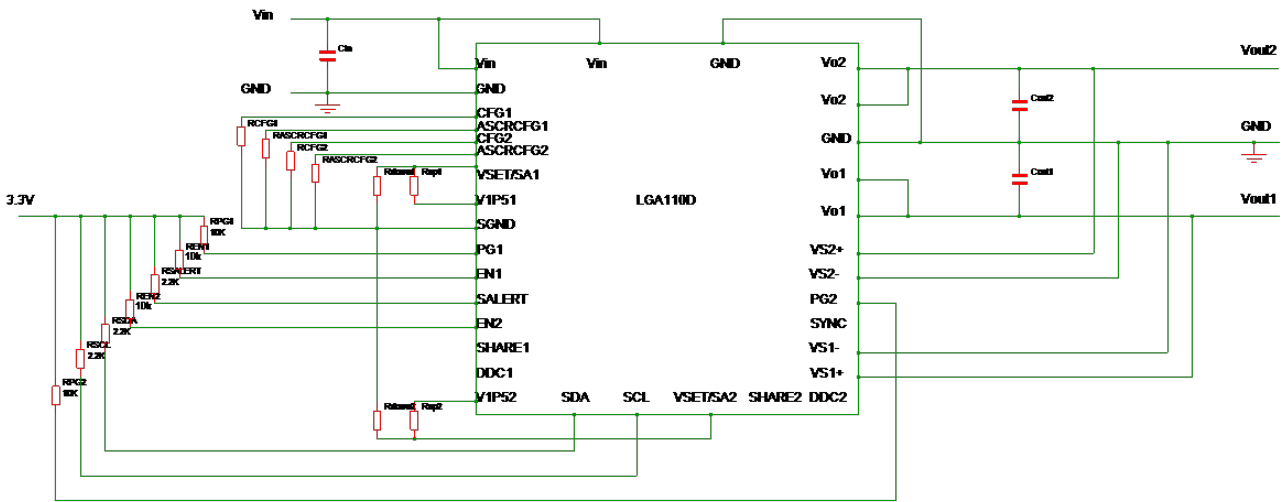
Input Voltage	Output Voltage Range	Output Current	Efficiency	Model Number
7.5 to 14 VDC	0.5 to 5 V	110 A max	See page 2	LGA110D-01DADJJ

Ordering Information

LGA	110	D	-	01	D	ADJ		J
1	2	3		4	5	6	7	8

- 1 Product family: LGA Series Name
- 2 Rated output current: 110 - Rated output current = 110 A
- 3 Performance: D - Digital POL
- 4 Input voltage: 01 - 7.5 to 14.0 V input voltage range
- 5 Number of outputs: D - Dual outputs
- 6 Output type: ADJ - Adjustable output
- 7 Other options: Blank - latching mode during protection
- 8 RoHS compliance: J - Pb free (RoHS 6/6 compliant)

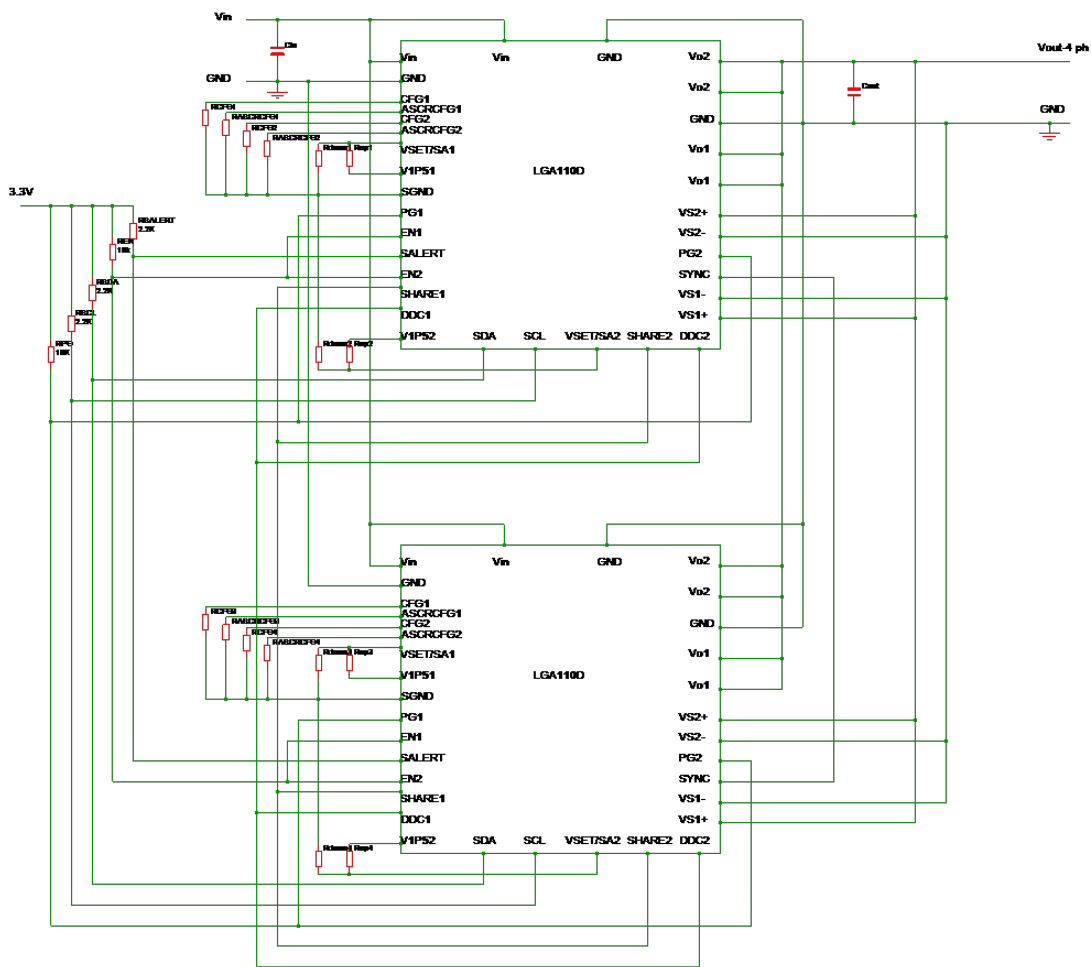
BLOCK DIAGRAM



Single unit, 2-phase dual O/P configuration

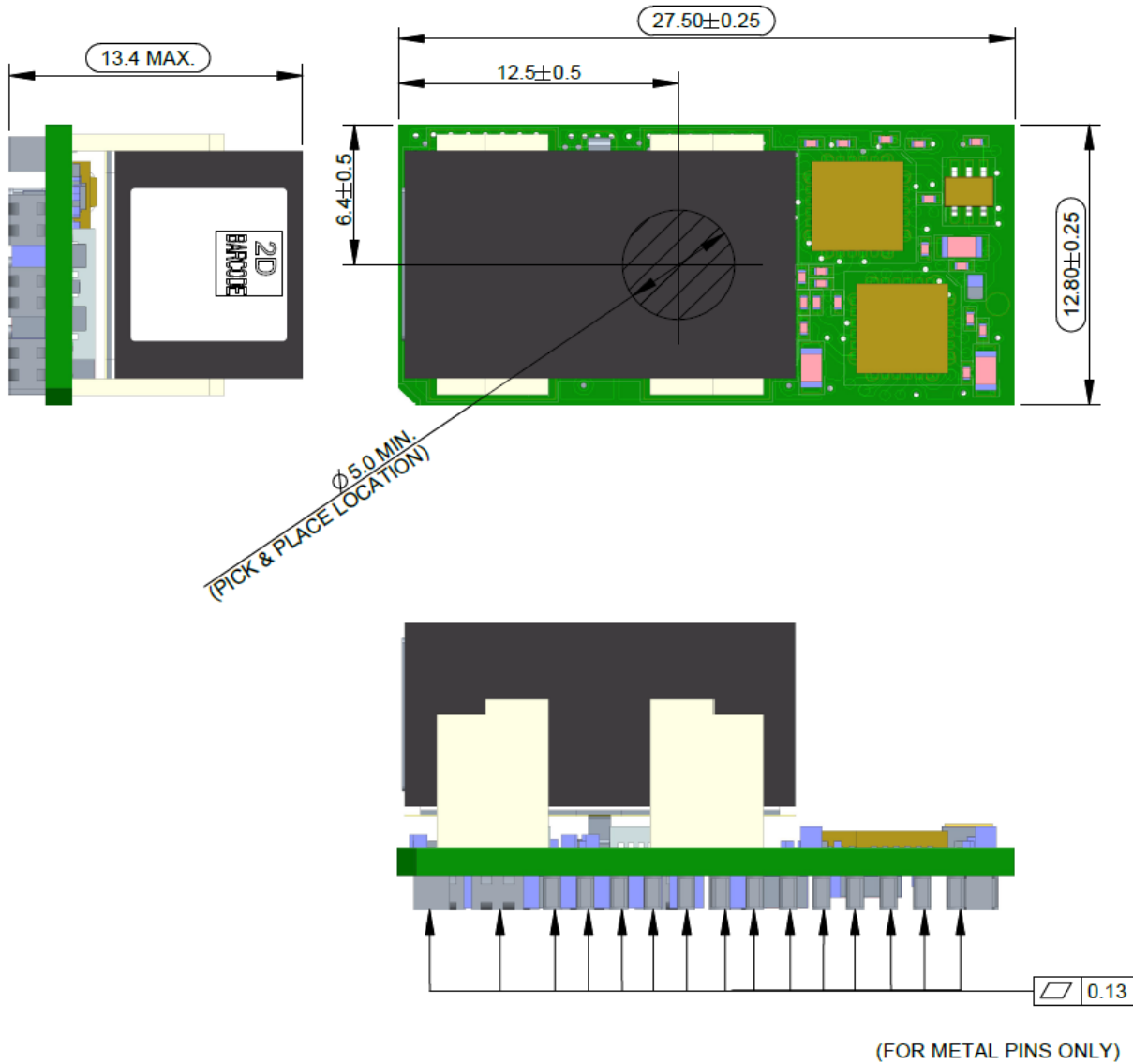


BLOCK DIAGRAM (CONTINUED)



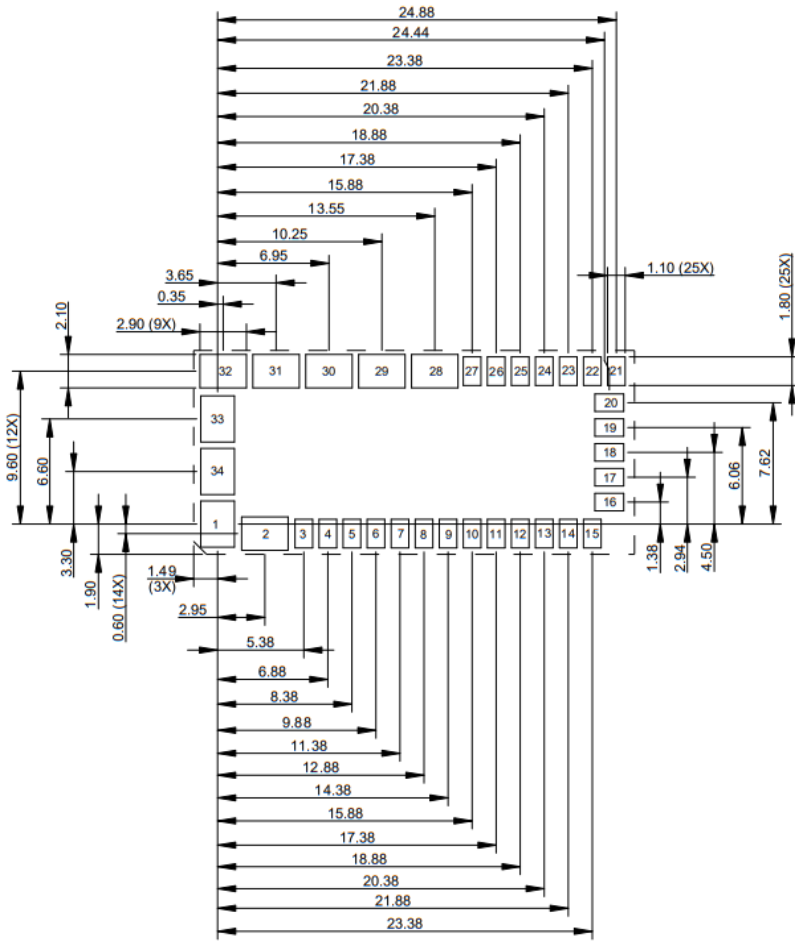
Two units, 4-phase single O/P configuration

MECHANICAL DRAWINGS



Notes: Dimensions are in millimeters.

MECHANICAL DRAWINGS



PIN#	Function	PIN#	Function
1	VIN	18	SCL
2	GND	19	VSET/SA2
3	CFG1	20	SHARE2
4	ASCRCFG1	21	DDC2
5	CFG2	22	VS1-
6	ASCRCFG2	23	VS1+
7	VSET/SA1	24	SYNC
8	V1P51	25	PG2
9	SGND	26	VS2-
10	PG1	27	VS2+
11	EN1	28	VO1
12	SALRT	29	VO1
13	EN2	30	GND
14	SHARE1	31	VO2
15	DDC1	32	VO2
16	V1P52	33	GND
17	SDA	34	VIN

REMARKS:  
 TOLERANCES DECIMAL .XX ± 0.15 mm  
 DASH LINE REPRESENTS LGA110D MODULE OUTLINE.



For international contact information,  
visit [advancedenergy.com](http://advancedenergy.com).

[powersales@aei.com](mailto:powersales@aei.com) (Sales Support)  
[productsupport.ep@aei.com](mailto:productsupport.ep@aei.com) (Technical Support)  
+1 888 412 7832

## ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

**PRECISION | POWER | PERFORMANCE**

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