

## ALQ/AEQ42B50

Quarter-Brick Series

Fixed Ratio

2nd Generation IBC

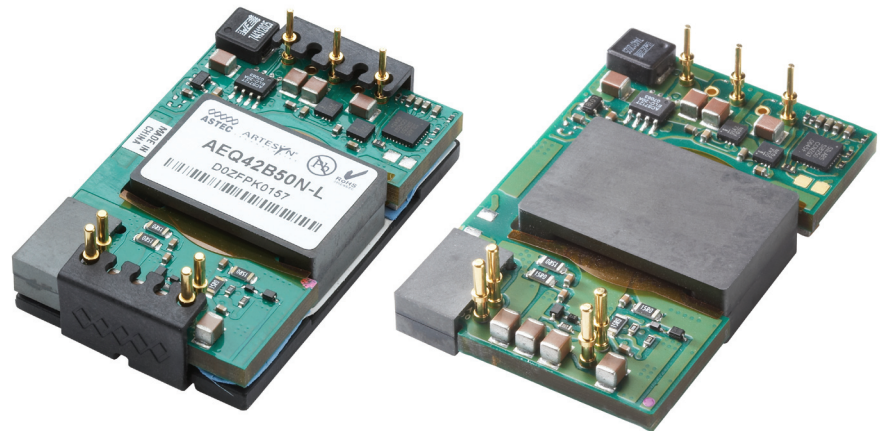
**Total Power:** 500 Watts  
**Input Voltage:** 36 - 55 Vdc  
**Output Voltage:** 12 Vdc

### Special Features

- 48 V input with isolated 12 V output
- Ultra-high efficiency, 97%
- Unprecedented usable output power levels
- High power density open-frame or baseplate technology
- Wide operating ambient temperature range
- Meets basic insulation requirements of EN60950-1
- Remote ON/OFF and overtemperature protection
- Redundant output pins
- RoHS compliant
- 2 year warranty

### Safety

- UL, cUL EN60950-1
- TUV EN60950-1



## Electrical Specifications

Output		
Total error band: (including setpoint, line, load and temperature)	36 - 55 V	8.5 - 13.75 V
Minimum load:		0 A
Overshoot:	At turn-on and turn-off	None
Undershoot:		None
Ripple and noise 5 - 20 mHz:	(See Note 2)	100 mV pk - pk typ.
Input		
Input voltage range:		36 - 55 V
Input current (max.):	(See Note 1)	11 A max. @ Io max. and Vin = min. rated
Remote ON/OFF:		
ON:		>2.95 V
OFF:		<1.20 V
Undervoltage lockout:	Power up	35 V
	Power down	33 V
Start-up time:	Power up	11 ms
	Remote ON/OFF	2 ms
Standing loss:		10 W (Vin = Vin, nom)



## General Specifications

Efficiency:		97%
Isolation voltage:	Input/output	1500 Vdc
Switching frequency:	Fixed	195 KHz typ.
Material flammability:		UL94V-0
Weight:		60 grams
Demonstrated life test:	48 Vin, 40 °C, 50 % load	> 1.4 M Hrs.

## Environmental Specifications

Thermal performance:	Operating ambient temperature	-40 °C to +85 °C
	Non-operating	-55 °C to +125 °C

## Protection

Short-circuit:		Hiccup
Thermal:		115 °C hot spot
Input overvoltage protection (autorecovery):	T - On threshold	57.0 - 59.5 V
	T - Off threshold	55.0 - 58.0 V

## Pin Connections

### Single Output

- +Vin
- Remote on/off
- Vin
- Vout
- Vout
- +Vout
- +Vout

### Notes:

- Recommended input fusing is a 20 A HRC 250 V rated fuse.
- Measured at 20 MHz bandwidth with external 10 uF tant. capacitor in parallel with 0.1 uF @ 50 V X7R ceramic capacitor placed across +Vout and -Vout, TA = 25 °C.
- Efficiency measurements taken at full load, nominal input, TA = 25 °C, airflow at 200 LFM.
- Through-hole termination intended for wave soldering process.
- All specifications are considered typical values unless otherwise noted and are subject to change without notice.
- All dimensions are provided in inches [millimeters]. Pin placement tolerance: ± 0.005 [0.127]. Mechanical tolerance: ± 0.02 [0.50].
- 2 year warranty.

## Ordering Information

Output Power	Input Voltage	Output Voltage	Overall Output Regulation	Output Current	Efficiency	Model Number	Construction
500 W	36 - 55 V	12 V	8.5 - 13.75 V	42 A	97%	ALQ42B50(N)-(3)L	Low profile Open-frame
500 W	36 - 55 V	12 V	8.5 - 13.75 V	42 A	97%	AEQ42B50(N)-(3)L	Baseplate

### Notes / Options:

Suffix "-3" : 5 mm pin length, 1 pair output pin

Blank: 5mm pin length, 2 pairs output pin

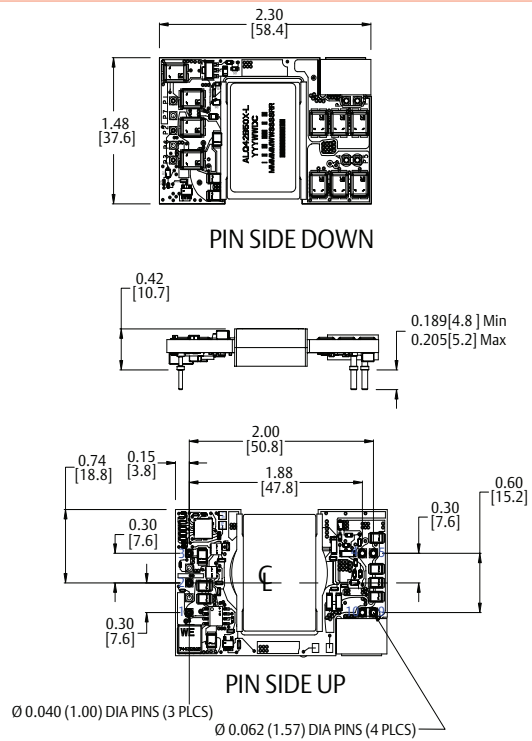
Suffix "N" : Designates negative logic enable (default is positive logic with no suffix "N" required)

Suffix "L" : RoHS 6/6 Compliant

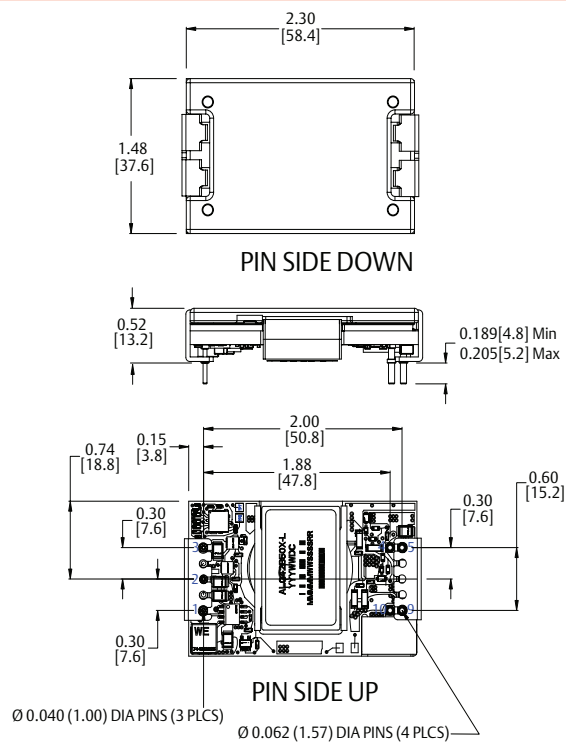
# Mechanical Drawings

## ALQ42B50 Series

Rev. 5.26.09\_23  
ALQ/AEQ42B50  
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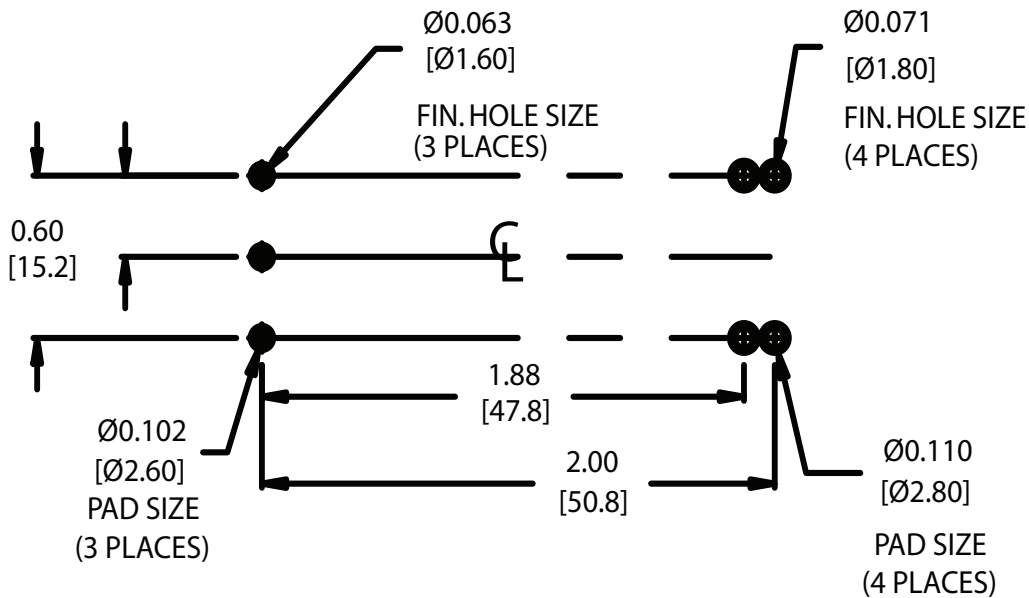


## AEQ42B50 Series



## Recommended PCB Hole Pattern

### RECOMMENDED PAD LAY OUT



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