

ALQ/AEQ42B50

Quarter-Brick Series

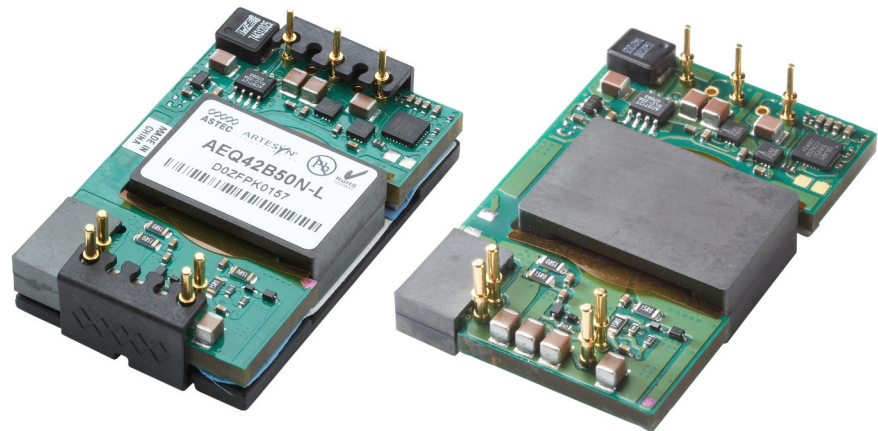
Fixed Ratio

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



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. @ I _o max. and V _{in} = 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 (V _{in} = V _{in} , nom)

Safety

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



General Specifications

Efficiency:		97%
Isolation voltage:	Input/output	1500 Vdc
Switching frequency:	Fixed	195 KHz typ.
Material flammability:		UL94V-0
Weight:		TBD
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

1. +Vin
2. Remote on/off
3. -Vin
4. -Vout
5. -Vout
9. +Vout
10. +Vout

Notes:

1. Recommended input fusing is a 20 A HRC 250 V rated fuse.
2. 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.
3. Efficiency measurements taken at full load, nominal input, TA = 25 °C, airflow at 200 LFM.
4. Through-hole termination intended for wave soldering process.
5. All specifications are considered typical values unless otherwise noted and are subject to change without notice.
6. All dimensions are provided in inches [millimeters]. Pin placement tolerance: ± 0.005 [0.127]. Mechanical tolerance: ± 0.02 [0.50].
7. 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)-(6)L	Low profile Open-frame
500 W	36 - 55 V	12 V	8.5 - 13.75 V	42 A	97%	AEQ42B50(N)-(6)L	Baseplate

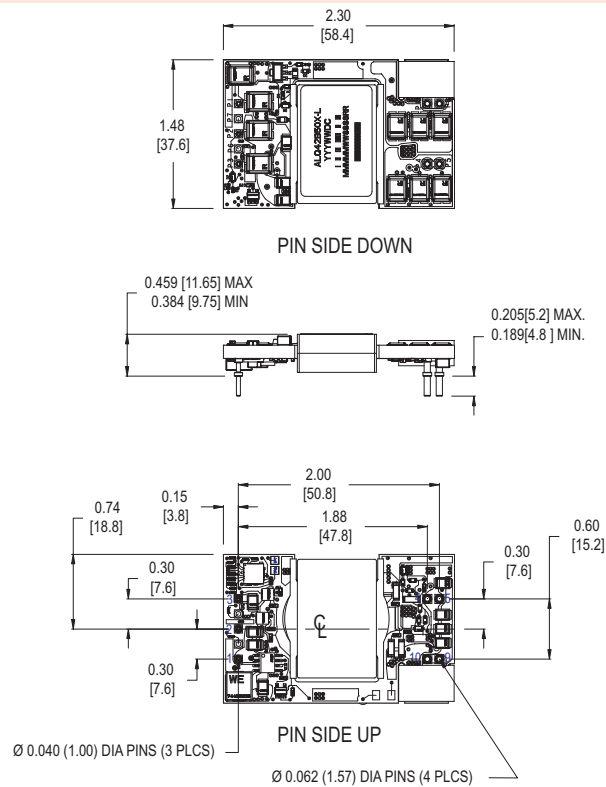
Notes / Options:

- Suffix "-6" : 3.7 mm pin length (default is 5 mm)
 Suffix "N" : Designates negative logic enable (default is positive logic with no suffix "N" required)
 Suffix "L" : RoHS 6/6 Compliant

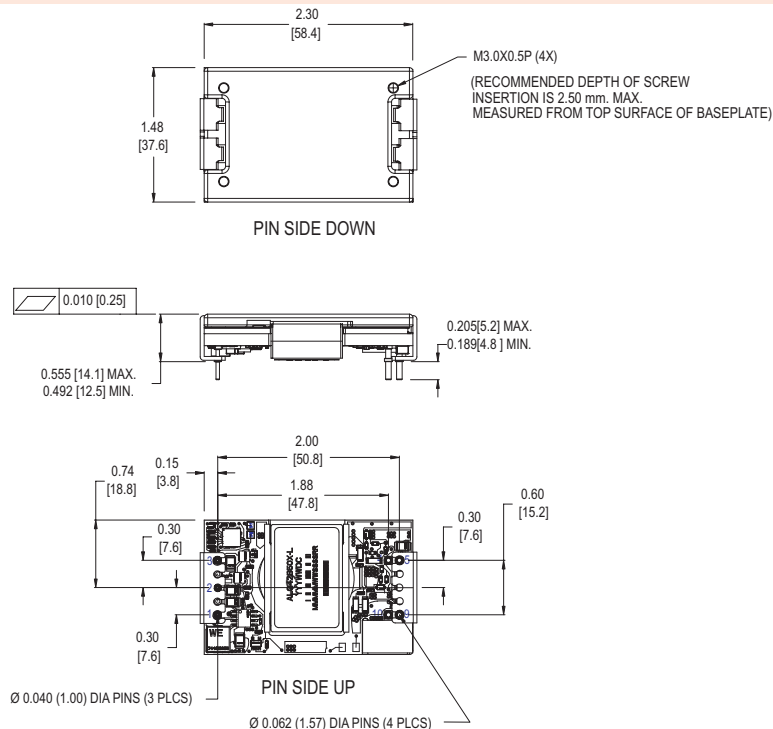
Mechanical Drawings

Rev. 3.10.09_111
ALQ/AEQ42B50
3 of 4

ALQ-Open-frame



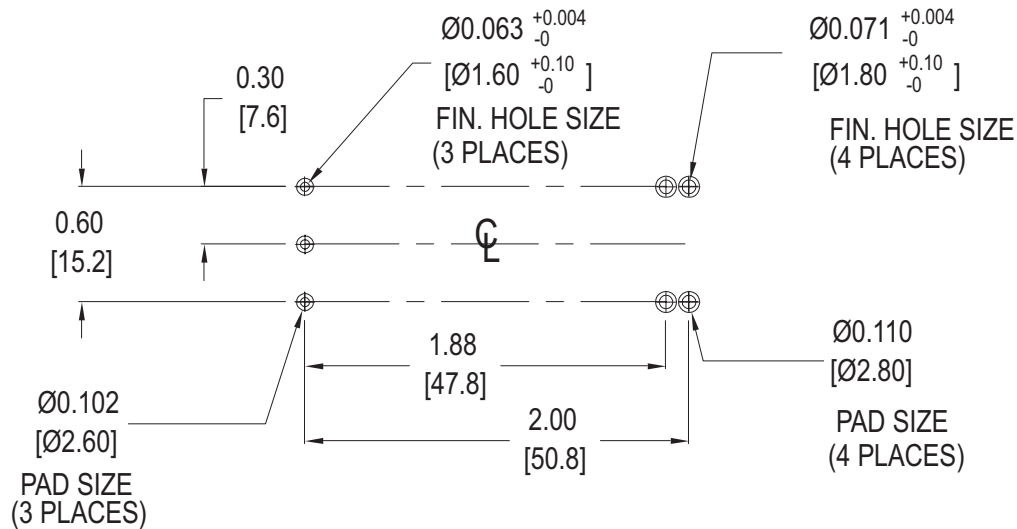
AEQ-Baseplate



Recommended PCB Hole Pattern

Rev. 3.10.09_111
ALQ/AEQ42B50
4 of 4

RECOMMENDED PAD AND HOLE LAY OUT



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