

ADQ700 Series

700 Watt Quarter Brick DC-DC Converter

Data Sheet

Total Power: 700 Watt (target)
(12 V @ 58 A)
Input Voltage: 40 - 60 Vdc
Single Outputs: 12 V Nom

SPECIAL FEATURES

- 700 W continuous power
- Ultra high efficiency > 96%
- 40 - 60 Vdc Datacomm input range
- Baseplate optimized for contact cooling or heatsink mounting
- Open frame version optimized for air cooling
- Low ripple and noise
- Fixed switching frequency
- High capacitive load capability
- Pre-bias start-up capability
- High reliability
- RoHS 6 compliant
- UL94 V-0 materials
- Heatsink accessory pack can be ordered (heatsink, thermal pad and screws)
- DOSA footprint compliant
- PMBus™ communication
- IPC9592 component stress complaint
- Two year warranty (consult factory for extended terms)

SAFETY

- EN60950
- CSA
- CE
- UL



Electrical Specifications

Input

Input voltage	40 - 60 Vdc
Input surge	80 V / 100 mSec
Input UVLO	Turn-on: 38.7 Vdc Turn-off: 37 Vdc Hysteresis: 2 Vdc
Input OVP	Turn-off: 64.5 Vdc Recovery point: 62.3 Vdc Hysteresis: 2 Vdc
I/O insulation	Basic insulation
I/O isolation	1500 Vdc
Efficiency (48 Vin, 25 °C ambient)	96% @ 12 V (100% load and 50% load)

Output

Output voltage	12 V nominal set point
Output voltage regulation	12 V ± 1%
Output current maximum	58 A for 12 V
Noise & ripple	At 12 V; 200 mV pk-pk max
Overtemperature protection	Baseplate: 110 °C Open frame: 120 °C hot spot
Overvoltage protection method / OVP operation	Auto restart 13.8 V - 16 V window
Overcurrent protection method / OCP operation	Auto-restart 64 A - 82 A window

Control

Enable	TTL compatible (negative logic)
PMBus connectivity	Connection port and control/monitoring available
Switching frequency	200 KHz
Pre-bias start-up	0% to 95% Vout

Environmental Specifications

Operating temperature	-40° C to +85 °C
Storage temperature	-55 °C to +125 °C
MTBF	1.5 Million hours

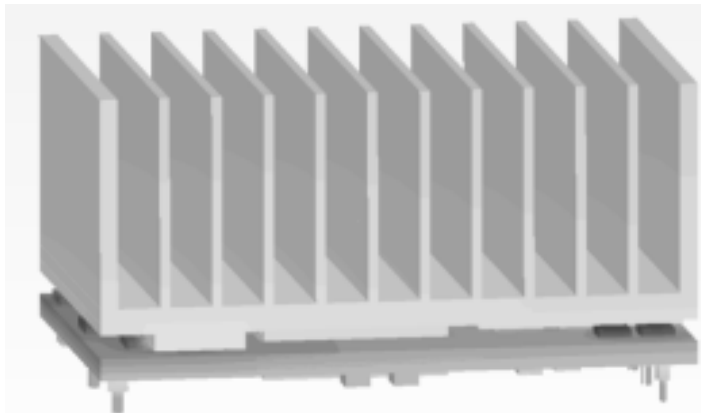
Ordering Information

Model number	Input voltage	Output voltage set point	Output current	Efficiency
ADQ700-48S12-4L	40 - 60 Vdc	12 Vdc	58 A	96% (full load)
ADQ700-48S12-4LI	40 - 60 Vdc	12 Vdc	58 A	96% (full load)
ADQ700-48S12B-4L	40 - 60 Vdc	12 Vdc	58 A	96% (full load)
ADQ700-48S12B-4LI	40 - 60 Vdc	12 Vdc	58 A	96% (full load)
ADQ700-48S12B-4LIHS	40 - 60 Vdc	12 Vdc	58 A	96% (full load)
ADQ700-48S12B-4LHS	40 - 60 Vdc	12 Vdc	58 A	96% (full load)

“B” = Baseplate

“I” = Digital interface option

“HS” = Heatsink kit added, 1.4” heatsink, thermal pad



Example of heatsink integration
Height: 35.56 mm [1.40”]

Pin Length Options

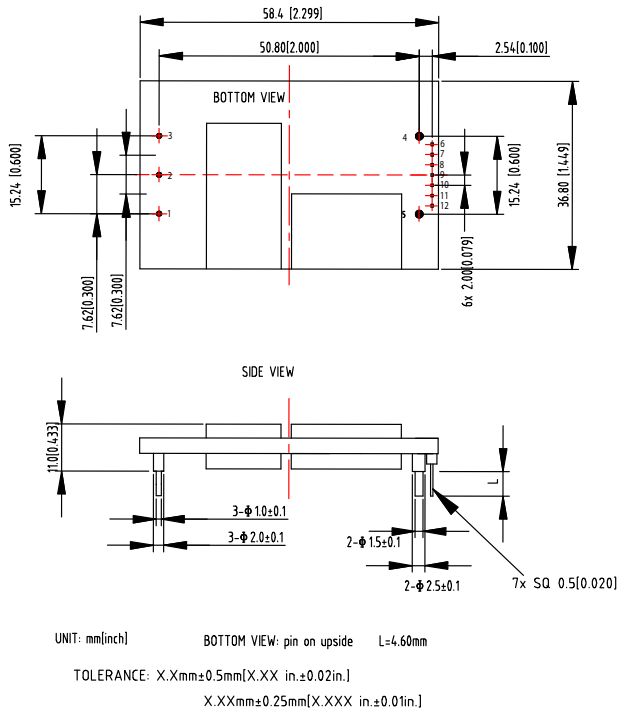
Device code suffix	L
-4	4.6 mm ± 0.25 mm
-6	3.8 mm ± 0.25 mm
-8	2.8 mm ± 0.25 mm
None	5.8 mm ± 0.25 mm

Pin Designations

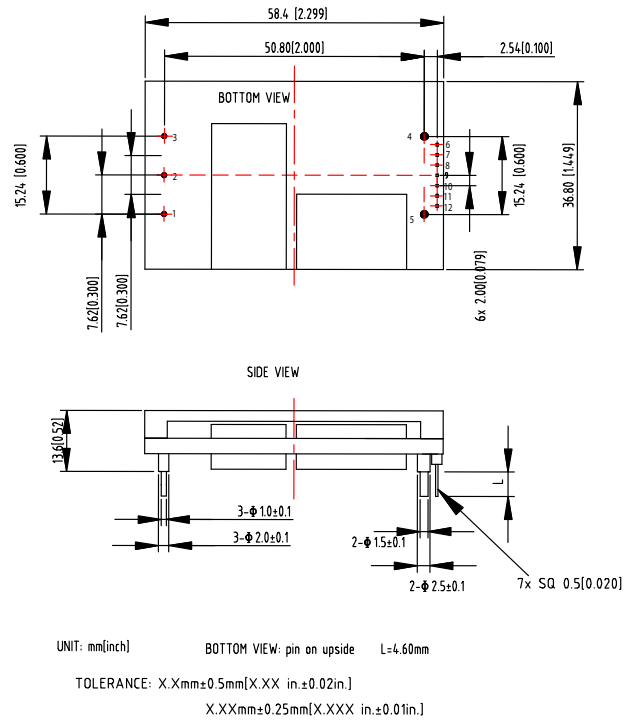
Pin	Function	Function
1	Vin+	Positive input voltage
2	Remote On/Off	Remote control
3	Vin-	Negative input voltage
4	Vo-	Negative output voltage
8	Vo+	Positive output voltage
9	C2	Digital
10	Sig_Gnd	Digital
11	Data	Digital
12	SMBAAlert	Digital
13	Clock	Digital
14	Addr1	Digital
15	Addr0	Digital

Mechanical Drawing

Open Frame Module



Baseplate Module



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