



50 WATT QUARTER BRICK

Regulated,
2:1 Input Range
DC/DC Converters

FEATURES

- **UL and CE Approved**
- **Single Output Up to 20A**
- **No Minimum Load**
- **Adjustable Output Voltage**
- **High Efficiency (Up to 91%)**
- **Compact 2.28" x 1.45" x 0.50" Quarter Brick Package**

OFQ50 Series

HIGH VOLTAGE
(HVPS) Condatas AG

Distribution
electronic
components



Specifications

Typical @ 25°C Under Full Load and Nominal Input Voltage, Unless Otherwise Specified.

INPUT

Input Voltages	48Vdc	36-72 Vdc
Input Filter		LC Type
Start Up Time		Nominal Vin and Constant Resistive Load
Power Up		25mS Typ
Remote ON/OFF		25mS Typ
Remote on/off (Note 3)		
(Negative Logic) DC-DC ON		Short or OV<Vr<1.2V
DC-DC Off		Open or 3.5V<Vr<15V
(Positive Logic) DC-DC ON		Open or 3.5V<Vr<15V
DC-DC Off		Short or OV<Vr<1.2V

OUTPUT

Voltage Accuracy (FL and Nominal Vin)	±1.5%
Voltage Adjustability	±10%, -20%
Line Regulation (LL to HL at FL)	±0.2%
Load Regulation (NL to FL)	1.8Vdc 5.4mV
	2.5Vdc 7.5mV, 3.3Vdc 10mV, 5Vdc 15mV
Ripple and Noise (20MHz BW) (Measured with a 1uF M/C & a 10uF/C)	100mVp-p
Temperature Coefficient (at FL)	±0.02%/°C, max
Transient Response, 25% load step change	200uS

GENERAL

Efficiency	See Table
Isolation Voltage	1600Vdc, min.
Isolation Resistance	10 ⁷ Ohms, min.
Switching Frequency	270KHz, typ.
Protection	Over Voltage Protection (Non-latching hiccup) 120% Vout max.
	Over current protection threshold 110%-140% of load
	Short circuit protection hiccup, automatic recovery

ENVIRONMENTAL

Operating Base Plate Temperature Range	-40° C to +100° C
Storage Temperature Range	-55° C to +125° C
Humidity, Max, Non-Condensing	95%

PHYSICAL

Case Material	Aluminum base-plate
Weight	42g (1.46 oz.)
Dimensions	2.28" x 1.45" x 0.50" Package (57.9 X 36.83 X 12.7 mm)

EMC CHARACTERISTICS

Conducted emissions	EN55022	Level A
	EN55022	Level B
Radiated emissions	EN550224	Level A
ESD	EN61000-4-2	Perf. Criteria2
Radiated immunity	EN61000-4-3	Perf. Criteria2
Fast transient	EN61000-4-4	Perf. Criteria2
Surge	EN61000-4-5	Perf. Criteria2
Conducted immunity	EN61000-4-6	Perf. Criteria2

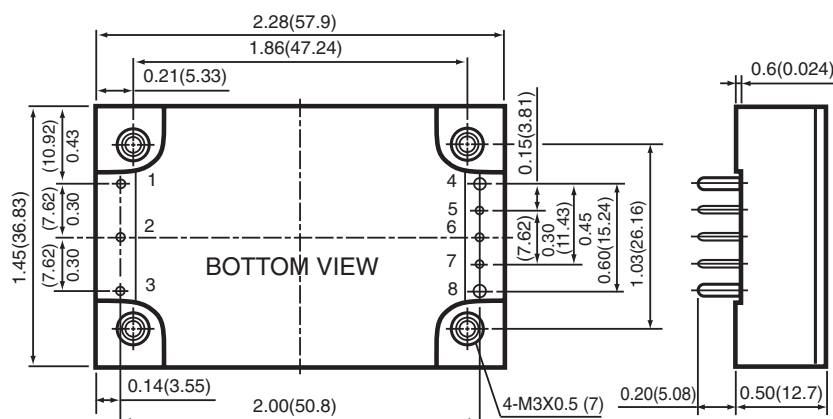
NOTE:

1. Maximum output deviation is 10% inclusive of trim. If remote sense is not being used, the +Vsense should be connected to its corresponding +OUTPUT and likewise the -sense should be connected to its corresponding -OUTPUT.
2. An external filter capacitor is required for normal operation. The capacitor should be capable of handling 1A ripple current for 48V models. Suggest: Nippon chemi-con KMF series, 220u F/100V, ESR 90mΩ.
3. The negative / positive logic and pin length are optional (see table). The pin voltage is referenced to negative input.
4. Heat sink is optional.
5. The OFQ50 meets level A & level B conducted emissions only with external components connected before the input pin to the converter.
6. Typical value at nominal input voltage and full load.
7. BASEPLATE GROUNDING: Base-plate should be grounded at one of the four screw bolts prior to operation.
8. The converter is provided with basic insulation.

(Continued)

SINGLE OUTPUT VOLTAGE	Input Voltage Nominal (Range) (Vdc)	Output Voltage (Vdc)	Output Current (mA)	Efficiency %	Model Number	Case
	48 (36-72)	1.8	20A	87	OFG50-48S1.8	O
	48 (36-72)	2.5	20A	88	OFG50-48S2.5	O
	48 (36-72)	3.3	15A	90	OFG50-48S3.3	O
	48 (36-72)	5	10A	91	OFG50-48S5	O

PIN CONNECTIONS	
PIN NO.	Define
1	–INPUT
2	ON/OFF
3	+INPUT
4	–OUTPUT
5	–SENSE
6	TRIM
7	+SENSE
8	+OUTPUT

 $x.xxx \pm 0.01 (x.xx \pm 0.25)$ Pin Pitch tolerance ± 0.014 (0.35)

EXTERNAL OUTPUT TRIMMING

Output can be externally trimmed by following the method shown below

The diagram illustrates two methods for external output trimming. On the left, the 'TRIM UP' circuit shows a 70 ohm resistor connected to output 7, and a variable resistor R_U connected between output 7 and output 6. On the right, the 'TRIM DOWN' circuit shows a 60 ohm resistor connected to output 6, and a variable resistor R_D connected between output 6 and output 5.

PRODUCT OPTIONS TABLE	
OPTION	SUFFIX
Negative remote ON/OFF logic, 0.20" pin length (standard)	–
Negative remote ON/OFF logic, 0.145" pin length	–L
Negative remote ON/OFF logic, 0.11" pin length	–K
Positive remote ON/OFF logic, 0.20" pin length	–P
Positive remote ON/OFF logic, 0.145" pin length	–S
Positive remote ON/OFF logic, 0.11" pin length	–M