



POLYTRON DEVICES, Inc.

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

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 10uFT/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:

- 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.
- 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, 220µ F/100V, ESR 90mΩ.
- The negative / positive logic and pin length are optional (see table). The pin voltage is referenced to negative input.
- Heat sink is optional.
- The OFQ50 meets level A & level B conducted emissions only with external components connected before the input pin to the converter.
- Typical value at nominal input voltage and full load.
- BASEPLATE GROUNDING: Base-plate should be grounded at one of the four screw bolts prior to operation.
- The converter is provided with basic insulation.

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Selection Guide

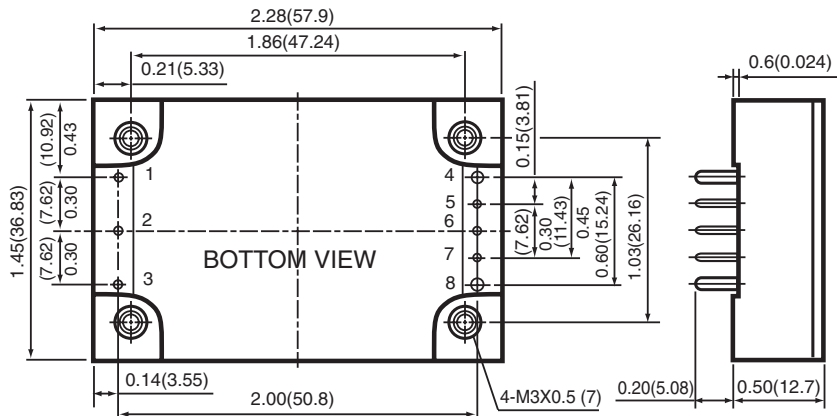
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SINGLE OUTPUT VOLTAGE	Input Voltage Nominal (Range) (Vdc)	Output Voltage (Vdc)	Output Current (mA)	Efficiency %	Model Number	Case
	48 (36-72)	1.8	20A	87	OFQ50-48S1.8	O
	48 (36-72)	2.5	20A	88	OFQ50-48S2.5	O
	48 (36-72)	3.3	15A	90	OFQ50-48S3.3	O
	48 (36-72)	5	10A	91	OFQ50-48S5	O

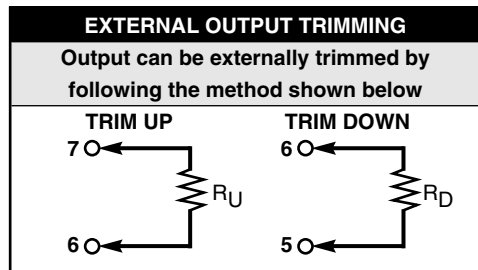
Mechanical Specifications

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

PIN 1, 2, 3, 5, 6, 7, DIM. 0.040 (1.016mm)
 PIN 4, 8, DIM. 0.060 (1.57mm)
 Tolerance: x.xx±0.02(x.x±0.5)
 x.xxx±0.01(x.xx±0.25)



All Dimensions in inches (mm)
 Pin Pitch tolerance ±0.014 (0.35)



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



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