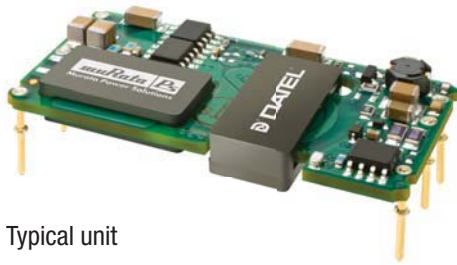




# UEI30 Series

## 30W Isolated Wide-Range DC/DC Converters



Typical unit

### FEATURES

- Small footprint DC/DC converter, ideal for high current applications
- 0.92" x 1.92" x 0.35" open frame package
- Wide range input voltages 9-36 and 18-75Vdc
- Assembly and attachment for RoHS-6 hazardous substance compliance
- Isolation up to 2250 VDC (basic)
- Up to 30W total output power with overtemperature shutdown
- High efficiency synchronous rectifier forward topology
- Stable no-load operation with no required external components
- -40 to +85°C temperature range; see derating
- Certified to UL60950-1, CSA-C22.2 No. 234, EN60950-1 safety approvals
- Extensive self-protection shut down features
- RoHS-6 hazardous substance compliant

Featuring a full 30 Watt output in 1.8 square inches of board area, the UEI series isolated DC/DC converter family offers efficient regulated DC power for printed circuit board mounting.

### PRODUCT OVERVIEW

Wide range 4:1 inputs on the 0.92" x 1.92" x 0.35" converter are either 9 to 36 Volts DC (Q12 models) or 18 to 75 Volts DC (Q48 models), ideal for battery-powered and telecom equipment. Fixed output voltages from 3.3 VDC to 15 VDC are tightly regulated and may be trimmed within  $\pm 10\%$  of nominal output. Applications include small instruments, computer-based systems, data communications equipment, remote sensor systems, vehicle and portable electronics.

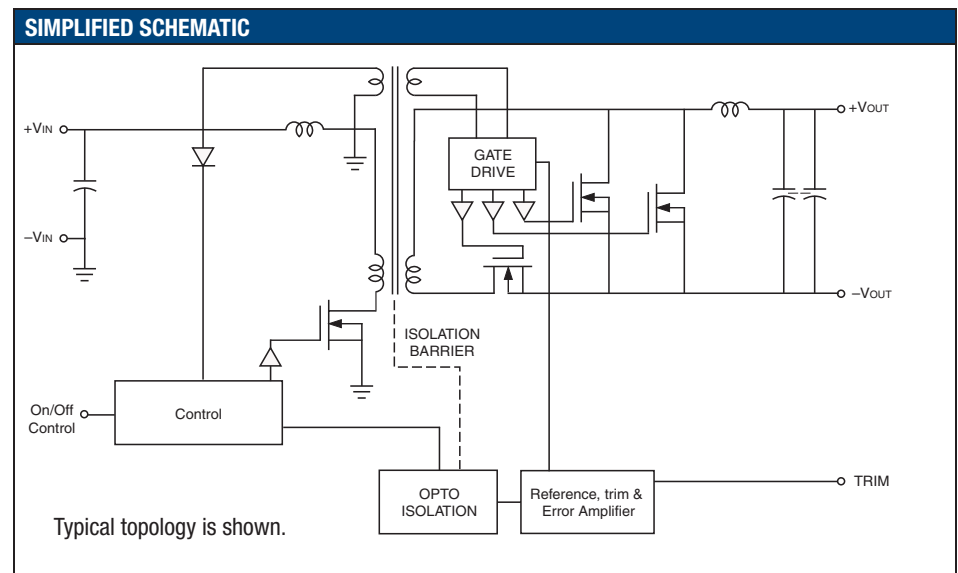
The UEI 30W Series includes full magnetic and optical isolation up to 2250 Volts DC (basic insulation). For connection to digital systems, the outputs offer fast settling to current step loads and tolerance of higher capacitive loads. Excellent ripple and noise specifications assure compatibility to circuits using CPU's, ASIC's, programmable logic and FPGA's. No minimum load is required. For systems requiring controlled startup/shutdown, an external switch, transistor or digital logic

may be used to activate the remote On/Off control. Remote Sense inputs compensate for resistive line drops at high currents.

A wealth of self-protection features avoid both converter and external circuit problems. These include input undervoltage lockout and overtemperature shutdown. The outputs current limit using the "hiccup" autorestart technique and the outputs may be short-circuited indefinitely. Additional features include output overvoltage and reverse conduction elimination.

The synchronous rectifier forward topology offers high efficiency for minimal heat buildup and "no fan" operation. The open frame design is also available under special quantity order with an encapsulation shell and thermally-conductive potting compound. This option offers additional cooling in low-airflow, high temperature applications.

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PERFORMANCE SPECIFICATIONS AND ORDERING GUIDE															
Part Number <sup>①</sup>	Output							Input				Efficiency		Open Frame Package, C80	
	V <sub>OUT</sub> (V)	I <sub>OUT</sub> (A)	Power	R/N (mVp-p)		Regulation (Max.)		V <sub>IN</sub> Nom. (V)	Range (V)	I <sub>IN</sub> , no load (mA)	I <sub>IN</sub> , full load (A)	Min.	Typ.	Case	Pinout
			(W)	Typ.	Max.	Line	Load								
UEI30-033-Q12P-C	3.3	9	29.7	25	35	±0.2%	±0.25%	24	9-36	130	1.39	87.3%	89%	C80	P21
UEI30-033-Q48N-C	3.3	9	29.7	50	75	±0.2%	±0.25%	48	18-75	130	0.69	87%	89.5%	C80	P21
UEI30-050-Q12P-C	5	6	30	35	50	±0.2%	±0.2%	24	9-36	130	1.4	88%	89.5%	C80	P21
UEI30-050-Q48N-C	5	6	30	50	75	±0.2%	±0.2%	48	18-75	130	0.69	89.5%	91%	C80	P21
UEI30-120-Q12P-C	12	2.5	30	60	120	±0.2%	±0.1%	24	9-36	75	1.4	87.5%	89%	C80	P21
UEI30-120-Q48N-C	12	2.5	30	30	60	±0.2%	±0.1%	48	18-75	40	0.7	87.5%	89%	C80	P21
UEI30-150-Q12P-C	15	2	30	40	65	±0.2%	±0.1%	24	9-36	95	1.4	87.5%	89%	C80	P21
UEI30-150-Q48N-C	15	2	30	50	100	±0.2%	±0.1%	48	18-75	50	0.7	87.5%	89.5%	C80	P21

① Please refer to the part number structure for additional options and complete ordering part numbers.  
 ② All specifications are at nominal line voltage and full load, +25 deg.C. unless otherwise noted. See detailed specifications.

Output capacitors are 1 µF ceramic in parallel with 10 µF electrolytic. Input cap is 22 µF, low ESR. These I/O caps are necessary for our test equipment and may not be needed for your application.  
 ③ Sense input is not included for 12 Vout and higher models. Sense is optional for 5 Vout and lower.

### PART NUMBER STRUCTURE

**UEI30 - 050 - Q48 N - C**

**Nominal Output Voltage**  
In tenths of a volt

**RoHS-6 hazardous substance compliance**  
(does not claim EU RoHS exemption 7b-lead in solder)

**Input Voltage Range:**  
Q12 = 9-36V  
Q48 = 18-75V

**On/Off Control Polarity:**  
P = Positive  
N = Negative

Positive "P" polarity is standard for Q12 models and optional special order for Q48 models. Negative "N" polarity is standard for Q48 models and optional special order for Q12 models.

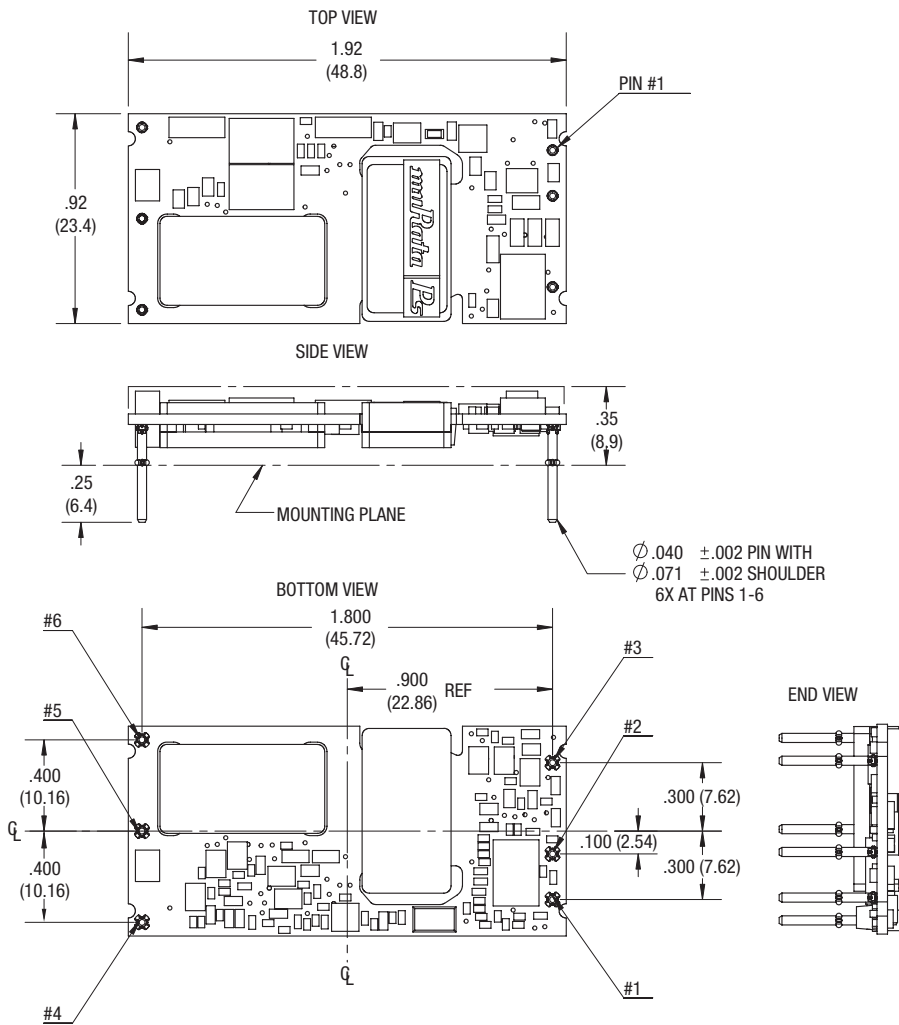
**Note:**  
Not all model number combinations are available. Contact Murata Power Solutions.

### Soldering Guidelines

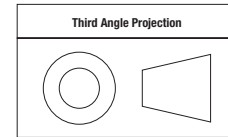
Murata Power Solutions recommends the specifications below when installing these converters. These specifications vary depending on the solder type. Exceeding these specifications may cause damage to the product. Your production environment may differ; therefore please thoroughly review these guidelines with your process engineers.

Wave Solder Operations for through-hole mounted products (THMT)			
For Sn/Ag/Cu based solders:		For Sn/Pb based solders:	
Maximum Preheat Temperature	115° C.	Maximum Preheat Temperature	105° C.
Maximum Pot Temperature	270° C.	Maximum Pot Temperature	250° C.
Maximum Solder Dwell Time	7 seconds	Maximum Solder Dwell Time	6 seconds

**MECHANICAL SPECIFICATIONS**



Dimensions are in inches (mm) shown for ref. only.



Tolerances (unless otherwise specified):  
 .XX ± 0.02 (0.5)  
 .XXX ± 0.010 (0.25)  
 Angles ± 2°

Components are shown for reference only.

∅ .040 ±.002 PIN WITH  
 ∅ .071 ±.002 SHOULDER  
 6X AT PINS 1-6

**UEI30 Open Frame  
 30W  
 Package C80**

**PHYSICAL CHARACTERISTICS**

Pin material	Copper alloy with gold plate over nickel underplate
Pin diameter	0.04" (1.016mm)
Pin Finish	Gold plate
Weight	0.53 oz (15g)
Electromagnetic interference	Designed to meet FCC part 15, class B, EN55022 (may need filter)
Flammability Rating	UL 94V-0
Safety	Designed to meet IEC/EN/UL/cUL 60950-1, CSA-C22.2 No. 60950-1

**INPUT/OUTPUT CONNECTIONS**

Pin	Function P21	Pin	Function P21
1	+ Vin	4	+ Vout
2	- Vin	5	- Vout
3	Remote On/Off*	6	Trim

\* The Remote On/Off can be provided with either positive (P suffix) or negative (N suffix) polarity.

Murata Power Solutions, Inc.  
 11 Cabot Boulevard, Mansfield, MA 02048-1151 U.S.A.  
 ISO 9001 and 14001 REGISTERED

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