



UEI15 Series

Isolated Wide Input Range 15-Watt DC/DC Converters

Typical unit



FEATURES

- Small footprint DC/DC converter, ideal for high current applications
- Industry standard 0.96" x 1.1" X 0.32" open frame package and pinout
- Wide range input voltages 9-36 and 18-75 Vdc
- Assembly and attachment for RoHS standards
- Isolation up to 2250 VDC (basic)
- Up to 15 Watts or greater total output power with overtemperature shutdown
- High efficiency synchronous rectifier forward topology
- Stable operation with no required external components
- Usable -40 to 85°C temperature range (with derating)
- Meets UL 60950-1, CAN/CSA-C22.2 No. 60950-1, IEC60950-1, EN60950-1 safety approvals
- Extensive self-protection shut down features

Featuring a full 15 Watt or greater output in one square inch 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 0.96" x 1.1" x 0.32" 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. The industry-standard pinout fits larger 1" x 2" converters. Fixed output voltages from 3.3 VDC to 15 VDC are regulated to within $\pm 0.2\%$ or less and may be trimmed within $\pm 10\%$ of nominal output. Applications include small instruments, area-limited microcontrollers, computer-based systems, data communications equipment, remote sensor systems, vehicle and portable electronics.

The UEI 15W 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. For systems requiring controlled startup/shutdown, an external switch, transistor or digital logic may be used to activate the remote On/Off control.

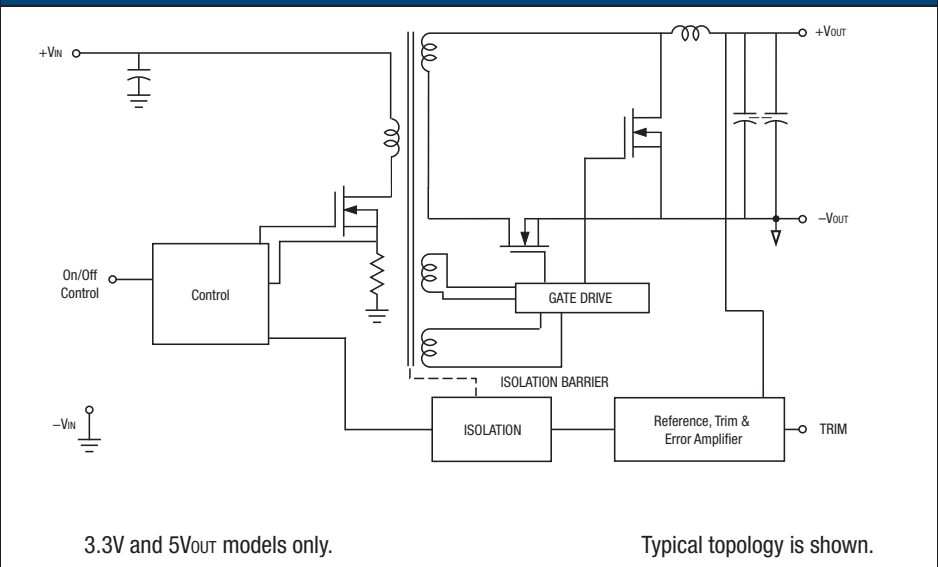
A wealth of self-protection features avoid both converter and external circuit problems. These include input undervoltage lockout and overtemperature shutdown. The outputs current limit using the "hiccup" autorestart technique and the outputs may be short-circuited indefinitely. Additional features include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

The high efficiency offers minimal heat buildup and "no fan" operation.

Contents of full data sheet

	Page
Description, Photograph, Connection Diagram	1
Ordering Guide, Model Numbering	2
Mechanical Specifications, Input/Output Pinout	3
Detailed Electrical Specifications	6
Application Notes	8
Soldering Guidelines	11
Performance Data	12

SIMPLIFIED SCHEMATIC



For full details go to www.murata-ps.com/rohs

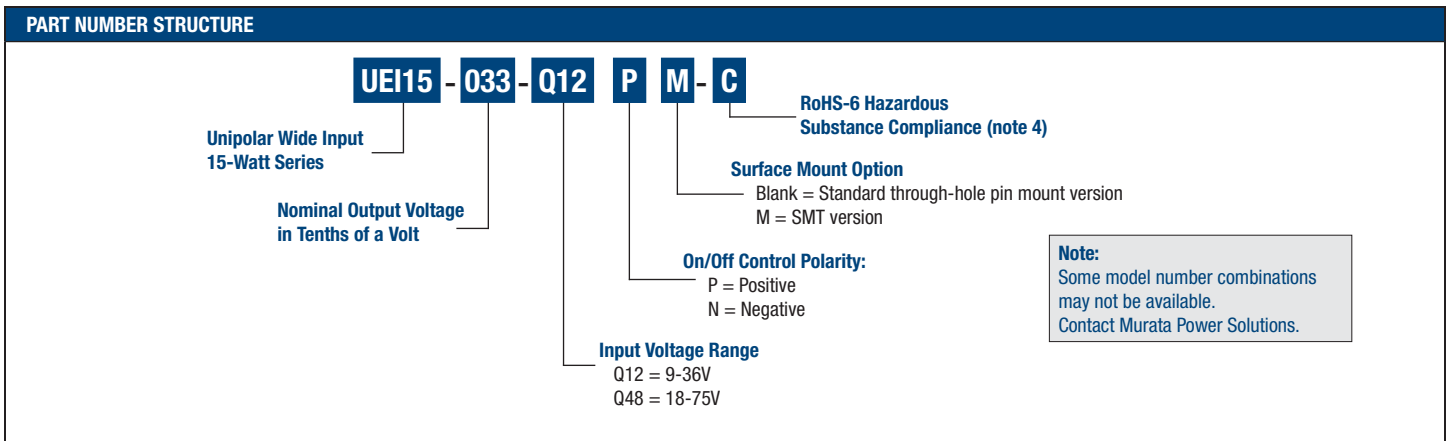


www.murata-ps.com

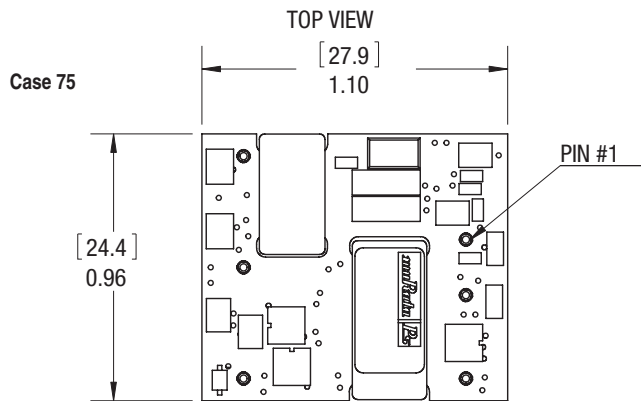
email: sales@murata-ps.com

PERFORMANCE SPECIFICATIONS AND ORDERING GUIDE ①																
Root Models ①	Output						Input				Efficiency		Open Frame Package – C75			
	V _{OUT} (V)	I _{OUT} (A)③	Power (W)	R/N (mVp-p) ②		Regulation (Max.)		V _{IN} Nom. (V)	Range (V)	I _{IN} = no load (mA)	I _{IN} = full load (A)	Min.	Typ.	(inches)	(mm)	Case Pinout
				Typ.	Max.	Line	Load									
UEI15-033-Q12P-C	3.3	4.5	14.85	60	90	±0.05%	±0.1%	24	9-36	43	0.71	86.5%	89%	1.1×0.96×0.32	27.9×24.4×8.1	P85
UEI15-033-Q48N-C	3.3	5	16.5	60	90	±0.2%	±0.2%	48	18-75	24	0.4	86.5%	88.8%			
UEI15-050-Q12P-C	5	3	15	70	125	±0.05%	±0.075%	24	9-36	41	0.72	86.3%	87.3%			
UEI15-050-Q48N-C	5	3	15	60	95	±0.05%	±0.06%	48	18-75	28	0.36	84.3%	86.0%			
UEI15-120-Q12P-C	12	1.3	15.6	110	150	±0.05%	±0.05%	24	9-36	15	0.77	82.3%	84.5%			
UEI15-120-Q48N-C	12	1.3	15.6	85	120	±0.075%	±0.05%	48	18-75	15	0.76	83.3%	85%			
UEI15-150-Q12P-C	15	1.1	16.5	130	175	±0.05%	±0.05%	24	9-36	18	0.81	83.5%	85%			
UEI15-150-Q48N-C	15	1.1	16.5	80	120	±0.05%	±0.05%	48	18-75	14	0.4	83.3%	85.3%			

- ① Please refer to the part number structure for additional options and complete ordering part numbers.
- ② All specifications are typical at nominal line voltage and full load, +25 deg.C. unless otherwise noted. See detailed specifications.
- ③ Minimum output load for UEI15-033-Q12, UEI15-120-Q12 and UEI15-050-Q12 is 10% of maximum current.
- ④ RoHS-6 compliance does not claim EU RoHS exemption 7b (lead in solder).

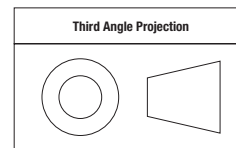


MECHANICAL SPECIFICATIONS, OPEN FRAME



PHYSICAL CHARACTERISTICS	
Pin Material	Copper alloy
Pin Diameter	0.04" (1.016mm)
Pin Finish	Gold plate
Weight	0.352 oz./10 grams
Electromagnetic Interference	FCC part 15, class B, EN55022 (see note 1) (Requires external filter)
Flammability Rating	UL 94V-0
Safety	UL/cUL 60950-1, CAN/CSA-C22.2-60950-1, IEC/EN 60950-1

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

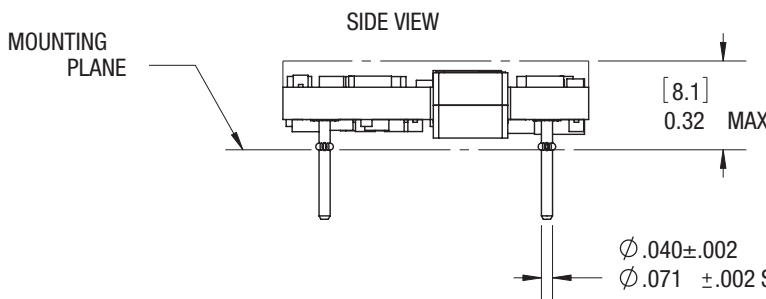


Tolerances (unless otherwise specified):
 .XX ± 0.02 (0.5)
 .XXX ± 0.010 (0.25)
 Angles ± 1°

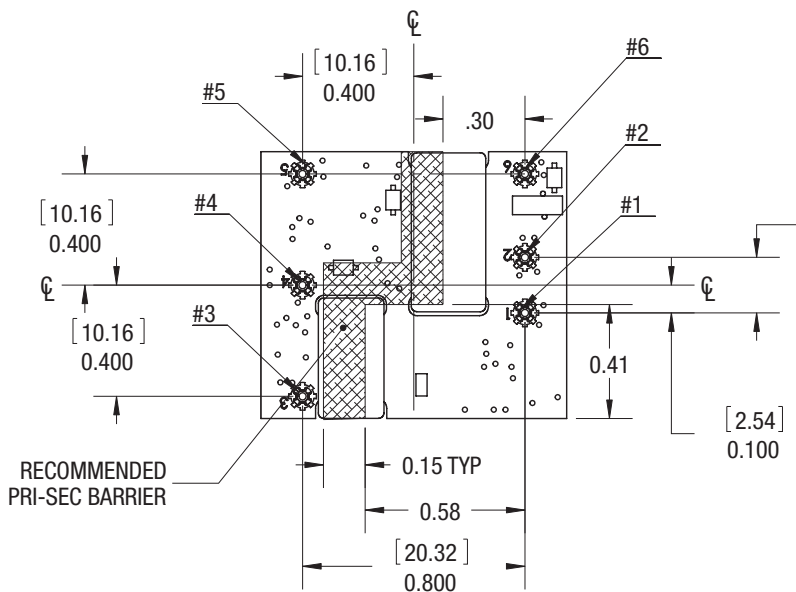
Components are shown for reference only.

INPUT/OUTPUT CONNECTIONS	
Pin	Function P85
1	+ Vin
2	- Vin
3	+ Vout
4	Output Trim
5	- Vout
6	On/Off Control*

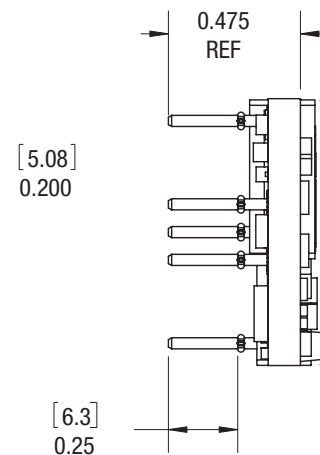
*The Remote On/Off can be provided with either positive (P suffix) or negative (N suffix) polarity



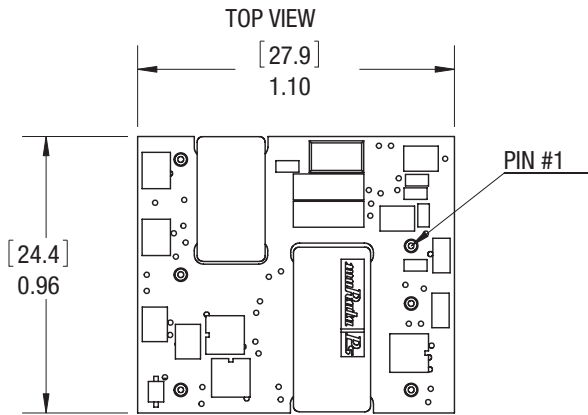
BOTTOM VIEW



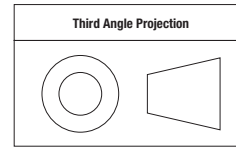
END VIEW



MECHANICAL SPECIFICATIONS, SURFACE MOUNT PACKAGE



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

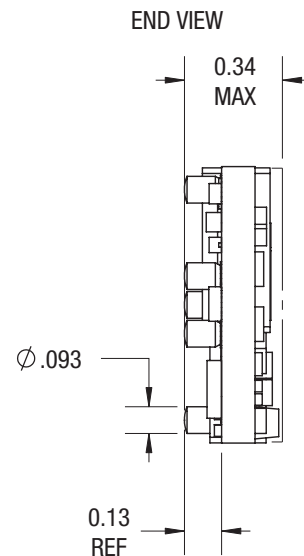
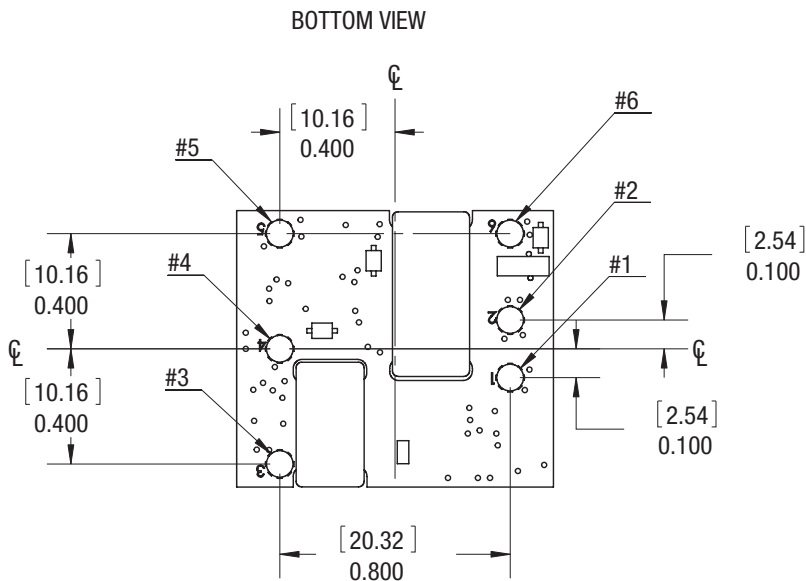
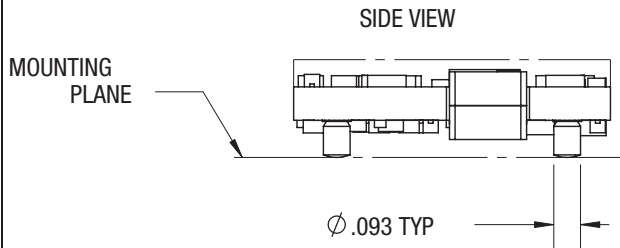


Tolerances (unless otherwise specified):
 .XX ± 0.02 (0.5)
 .XXX ± 0.010 (0.25)
 Angles ± 1°

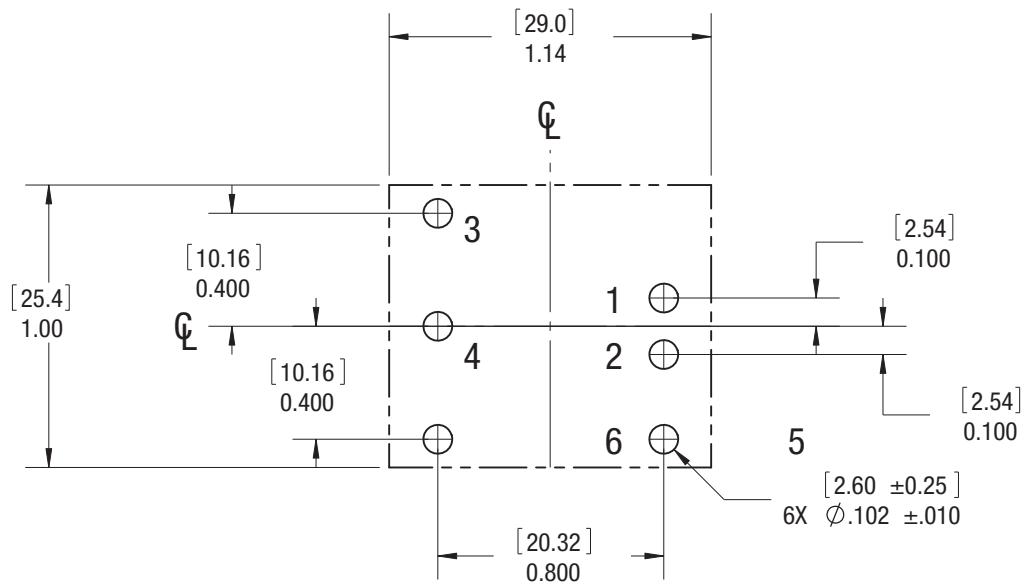
Components are shown for reference only.

INPUT/OUTPUT CONNECTIONS	
Pin	Function P85
1	+ Vin
2	- Vin
3	+ Vout
4	Output Trim
5	- Vout
6	On/Off Control*

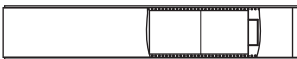
*The Remote On/Off can be provided with either positive (P suffix) or negative (N suffix) polarity



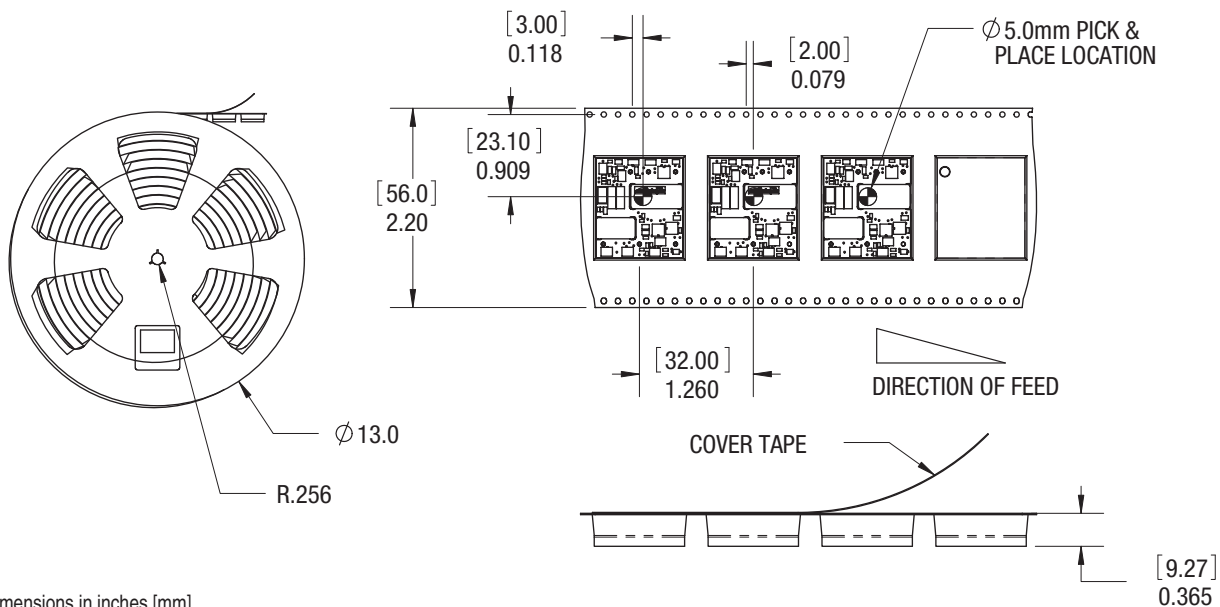
MECHANICAL SPECIFICATIONS, SURFACE MOUNT PACKAGE



RECOMMENDED SMT PAD LAYOUT



PACKAGING CONFORMS TO EIA-481
CONVERTERS SHIPPING IN QUANTITIES
OF 100 PER REEL



Dimensions in inches [mm]

SURFACE MOUNT TAPE AND REEL

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

Murata Power Solutions, Inc. makes no representation that the use of its products in the circuits described herein, or the use of other technical information contained herein, will not infringe upon existing or future patent rights. The descriptions contained herein do not imply the granting of licenses to make, use, or sell equipment constructed in accordance therewith. Specifications are subject to change without notice. © 2009 Murata Power Solutions, Inc.