

Typical unit

**PRODUCT OVERVIEW**

The OKL-T/3 series are miniature non-isolated Point-of-Load (PoL) DC/DC power converters for embedded applications. Featuring iLGA™ inspectable Land Grid Array (LGA) format, the OKL measures only 0.48 x 0.48 x 0.25 inches (12.2 x 12.2 x 6.35 mm).

The wide input range is 4.5 to 14 Volts DC. The maximum output current is 3 Amps (T/3 models). Based on fixed-frequency synchronous buck converter switching topology, the high power conversion efficient Point of Load (PoL) module features

programmable output voltage and On/Off control. These converters also include under voltage lock out (UVLO), output short circuit protection, over-current and over temperature protections.

An optional sequence/tracking feature on OKL2 models allows power sequencing of PoLs. These units are designed to meet all standard UL/EN/IEC 60950-1 safety and FCC EMI/RFI emissions certifications and RoHS-6 hazardous substance compliance.

**FEATURES**

- iLGA™ inspectable Land Grid Array
- 4.5-14Vdc input voltage range
- Programmable output voltage from 0.591-5.5Vdc
- Drives up to 200 µF ceramic capacitive loads
- High power conversion efficiency at 93%
- Outstanding thermal derating performance
- Over temperature and over current protection
- On/Off control and Power Good signal
- Optional Sequence/Tracking operation (OKL2 models)
- Designed to meet UL/EN/IEC 60950-1 safety (pending)
- RoHS-6 hazardous substance compliance

**Contents of full data sheet**

**Page**

Description, Connection Diagram, Photograph	1
Ordering Guide, Model Numbering, Product Label	2
Mechanical Specifications, Input/Output Pinout	3
Detailed Electrical Specifications	4
Output Voltage Adjustment, Application Notes	5
Performance Data and Oscillograms	8
Tape and Reel Information	15

**Connection Diagram**

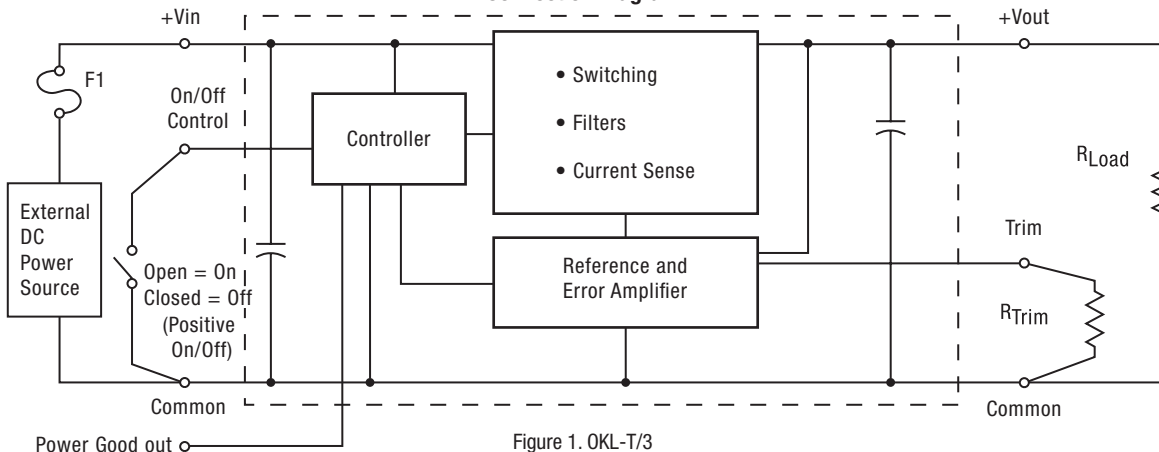


Figure 1. OKL-T/3

Note: Murata Power Solutions strongly recommends an external input fuse, F1. See specifications.

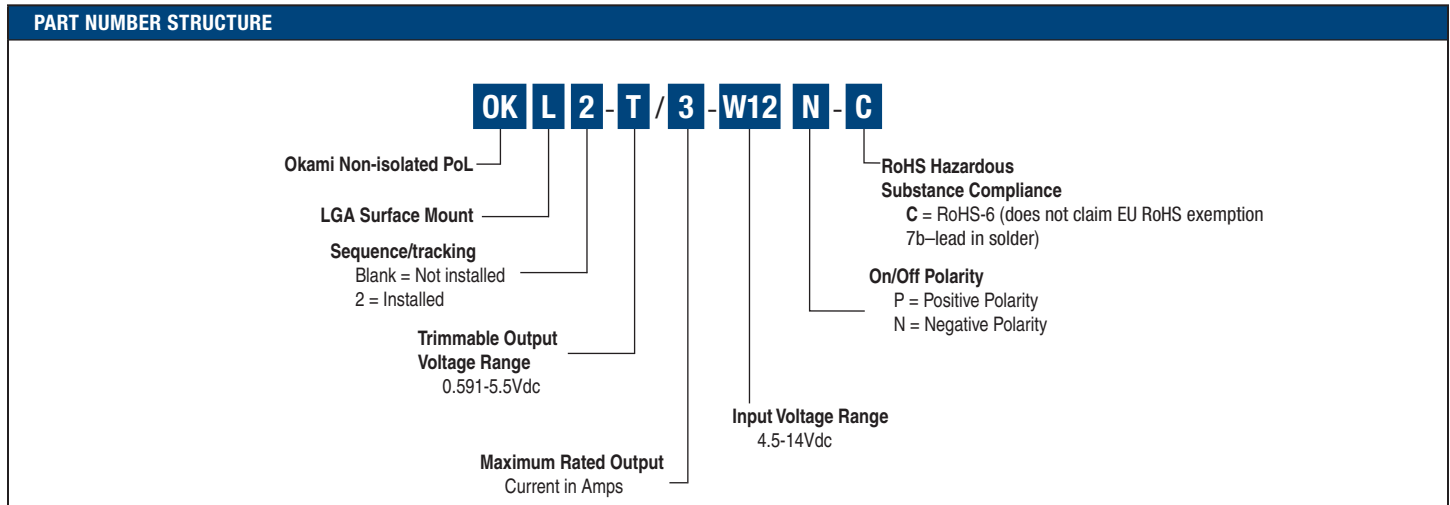


For full details go to [www.murata-ps.com/rohs](http://www.murata-ps.com/rohs)

**Performance Specifications and Ordering Guide**

ORDERING GUIDE																
Model Number	Output					Input				Efficiency		On/Off Polarity	Seq/Track	Package - Pinout P83		
	Vout (Volts) ①	Iout (Amps, max.)	Power (Watts)	R/N (mV p-p) Max. ④	Regulation (max.)		Vin nom. (Volts)	Range (Volts)	Iin, no load (mA) ④	Iin, full load (Amps) ②	Min.			Typ.	Case C83 inches (mm)	
					Line	Load										
<b>OKL-T/3-W12P-C</b>	0.591-5.5	3	15.0	37	±0.25%	±0.25%	12	4.5-14	20	1.34	91%	93%	Pos.	no	0.48x0.48x0.25 12.2x12.2x6.35	
<b>OKL-T/3-W12N-C</b>	0.591-5.5	3	15.0	37	±0.25%	±0.25%	12	4.5-14	20	1.34	91%	93%	Neg.	no	0.48x0.48x0.25 12.2x12.2x6.35	
<b>OKL2-T/3-W12P-C</b>	0.591-5.5	3	15.0	Please contact Murata Power Solutions for further information.										Pos.	yes	0.48x0.48x0.25 12.2x12.2x6.35
<b>OKL2-T/3-W12N-C</b>	0.591-5.5	3	15.0											Neg.	yes	0.48x0.48x0.25 12.2x12.2x6.35

- ① The output range is limited by Vin. See detailed specs.
- ② All specifications are at nominal line voltage, Vout=nominal (5V for W12 models) and full load, +25 deg.C. unless otherwise noted.  
Output capacitors are 10 µF ceramic. Input cap is 22 µF. See detailed specifications.  
I/O caps are necessary for our test equipment and may not be needed for your application.
- ③ Use adequate ground plane and copper thickness adjacent to the converter.
- ④ Ripple and Noise (R/N) and no-load input current are shown at Vout=1V. See specs for details.



**Product Label**

Because of the small size of these products, the product label contains a character-reduced code to indicate the model number and manufacturing date code. Not all items on the label are always used. Please note that the label differs from the product photograph. Here is the layout of the label:

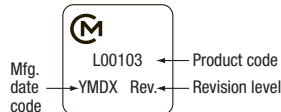


Figure 2. Label Artwork Layout

The label contains three rows of information:

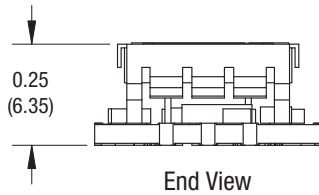
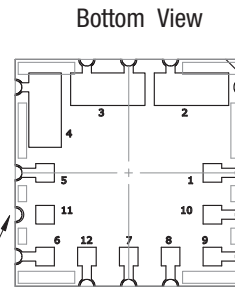
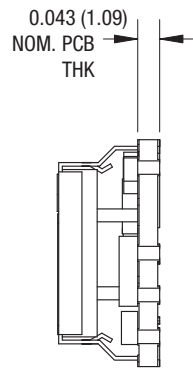
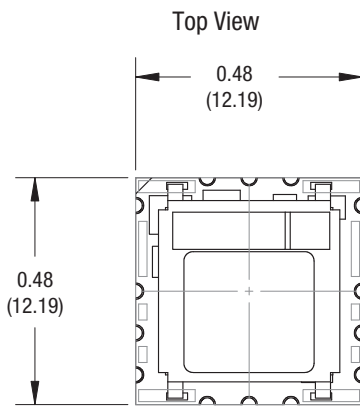
- First row – Murata Power Solutions logo
- Second row – Model number product code (see table)
- Third row – Manufacturing date code and revision level

Model Number	Product Code
OKL-T/3-W12N-C	L00103
OKL-T/3-W12P-C	L01103
OKL2-T/3-W12N-C	L20103
OKL2-T/3-W12P-C	L21103

The manufacturing date code is four characters:

- First character – Last digit of manufacturing year, example 2009
- Second character – Month code (1 through 9 and 0 through D)
- Third character – Day code (1 through 9 = 1 to 9, 10=O and 11 through 31 = A through Z)
- Fourth character – Manufacturing information

**MECHANICAL SPECIFICATIONS**

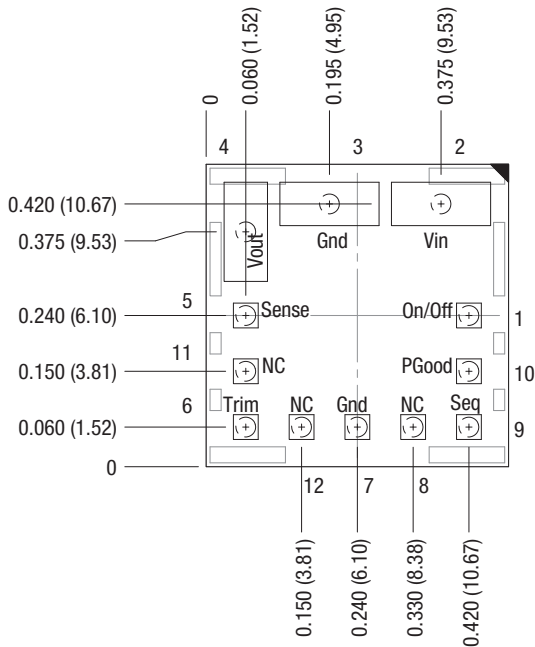


**NOTE:**  
In case of solder-wicking, this terminal is connected to Vout.

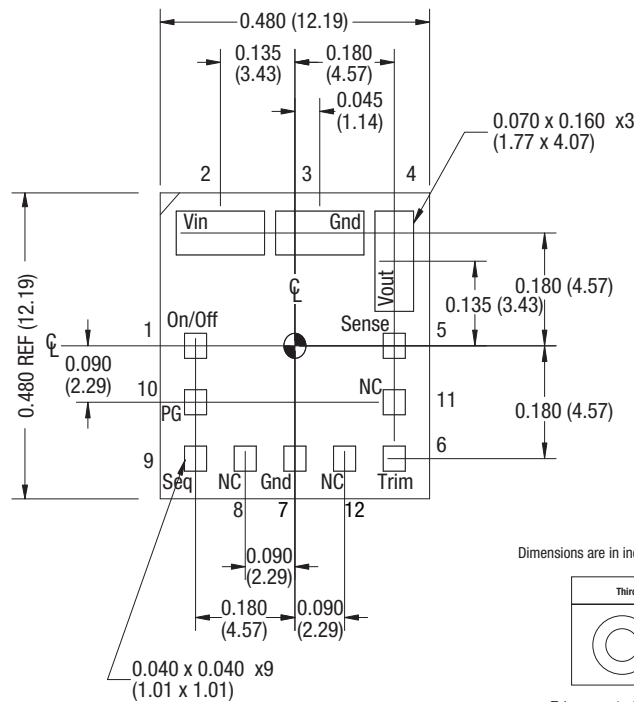
INPUT/OUTPUT CONNECTIONS	
Pin	Function
1	On/Off Control*
2	V <sub>IN</sub>
3	Ground
4	V <sub>OUT</sub>
5	Sense
6	Trim
7	Ground
8	NC
9	Sequence/Track
10	Power Good out
11	NC
12	NC

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

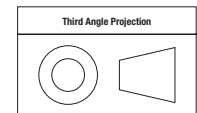
**Bottom View**



**Recommended Footprint -through the Board-**



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.

Figure 3. OKL-T/3 Mechanical Outline

