

PRELIMINARY



Typical unit

PRODUCT OVERVIEW

The OKL-T/3 series are miniature non-isolated Point-of-Load (POL) DC/DC power converters for embedded applications. The tiny form factor is configured on a Land Grid Array (LGA) assembly measuring only 0.488 x 0.488 x 0.22 inches (12.4 x 12.4 x 5.6 mm). Applications include powering CPU's, datacom/telecom systems, distributed bus architectures (DBA), programmable logic and mixed voltage systems.

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 conver-

sion 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/track input on OKL2 models allows the output to follow an external voltage input for controlled (ramp) startup and shutdown. 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

- Non-isolated SMT LGA POL DC/DC power module
- 4.5-14Vdc input voltage range
- Programmable output voltage from 0.591-5.5Vdc
- Drives 1000 µF ceramic capacitive loads
- High power conversion efficiency at 93%
- Outstanding thermal derating performance
- Over temperature and over current protection
- On/Off control
- Designed to meet UL/EN/IEC 60950-1 safety
- RoHS-6 hazardous substance compliance

Connection Diagram

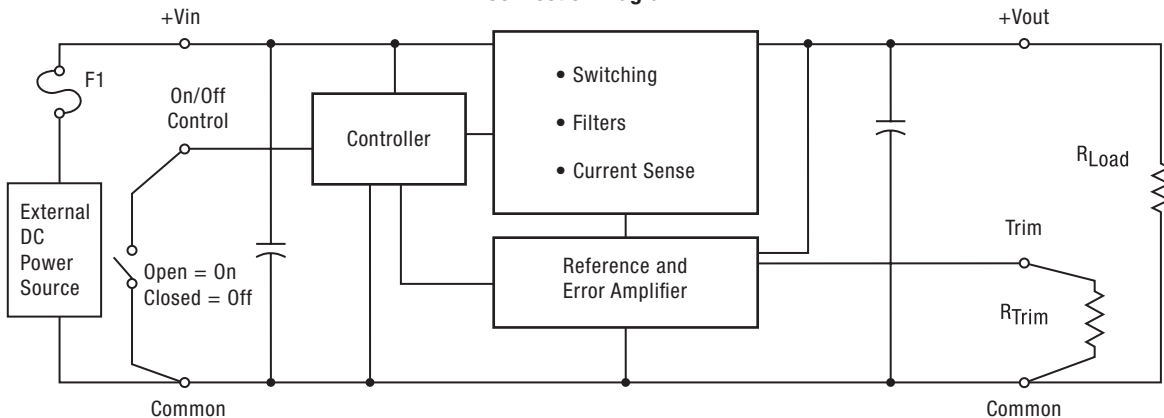


Figure 1. OKL-T/3

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

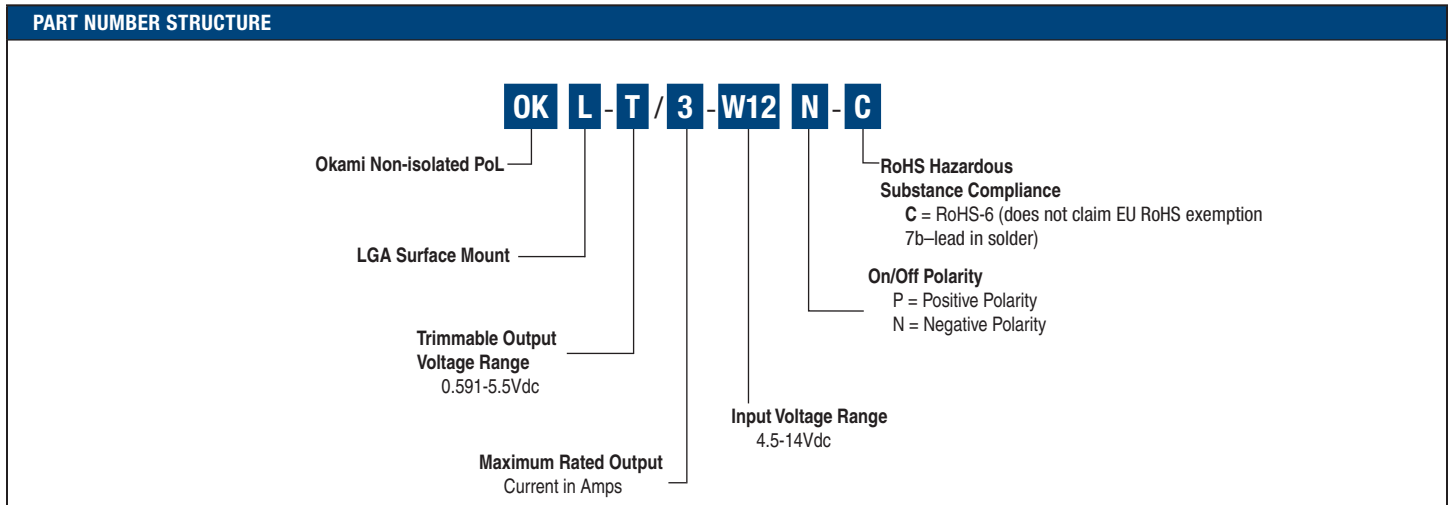


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Performance Specifications and Ordering Guide

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)	Iin, full load (Amps)	Min.			Typ.	Case C83 inches (mm)
					Line	Load									
OKL-T/3-W12P-C	0.591-5.5	3	15.0	20	±0.25%	±0.25%	12	4.5-14	20	1.34	91%	93%	Pos.	no	0.49x0.49x0.22 12.4x12.4x5.6
OKL-T/3-W12N-C	0.591-5.5	3	15.0	20	±0.25%	±0.25%	12	4.5-14	20	1.34	91%	93%	Neg.	no	0.49x0.49x0.22 12.4x12.4x5.6
OKL2-T/3-W12P-C	0.591-5.5	3	15.0	20	±0.25%	±0.25%	12	4.5-14	20	1.34	91%	93%	Pos.	yes	0.49x0.49x0.22 12.4x12.4x5.6
OKL2-T/3-W12N-C	0.591-5.5	3	15.0	20	±0.25%	±0.25%	12	4.5-14	20	1.34	91%	93%	Neg.	yes	0.49x0.49x0.22 12.4x12.4x5.6

- 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 1 µF ceramic and 10 µF electrolytic in parallel. 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) is 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:

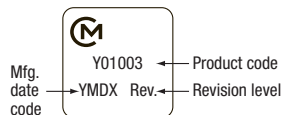


Figure 2. Label Artwork Layout

The label contains three rows of information:

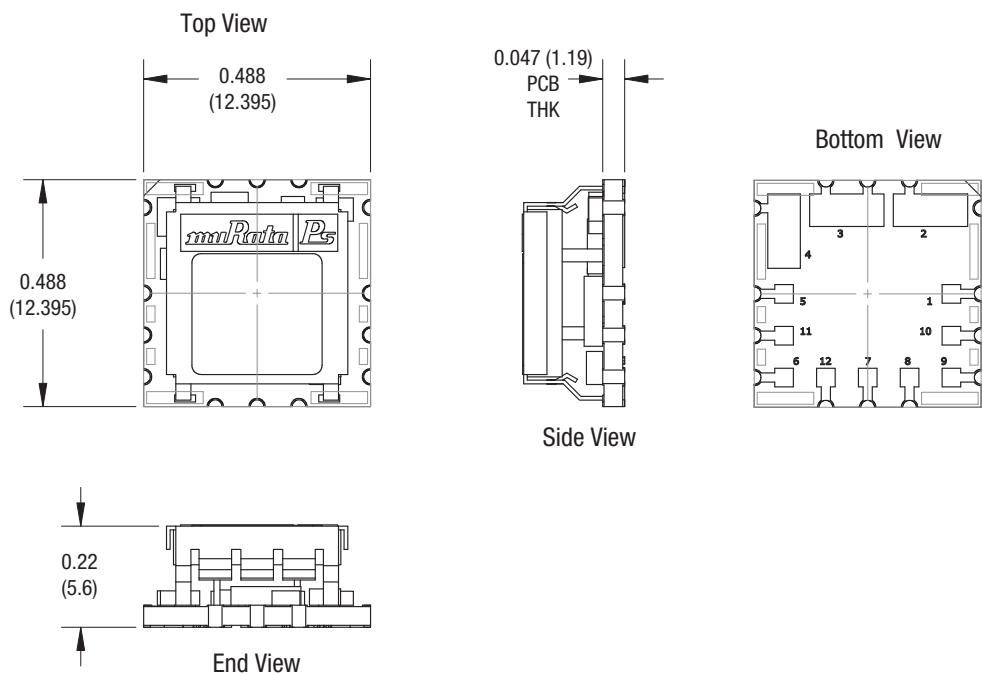
- First row – Murata Power Solutions logo
- Second row – Model number product code (see table)
- Third row – Manufacturing date code and revision level

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:

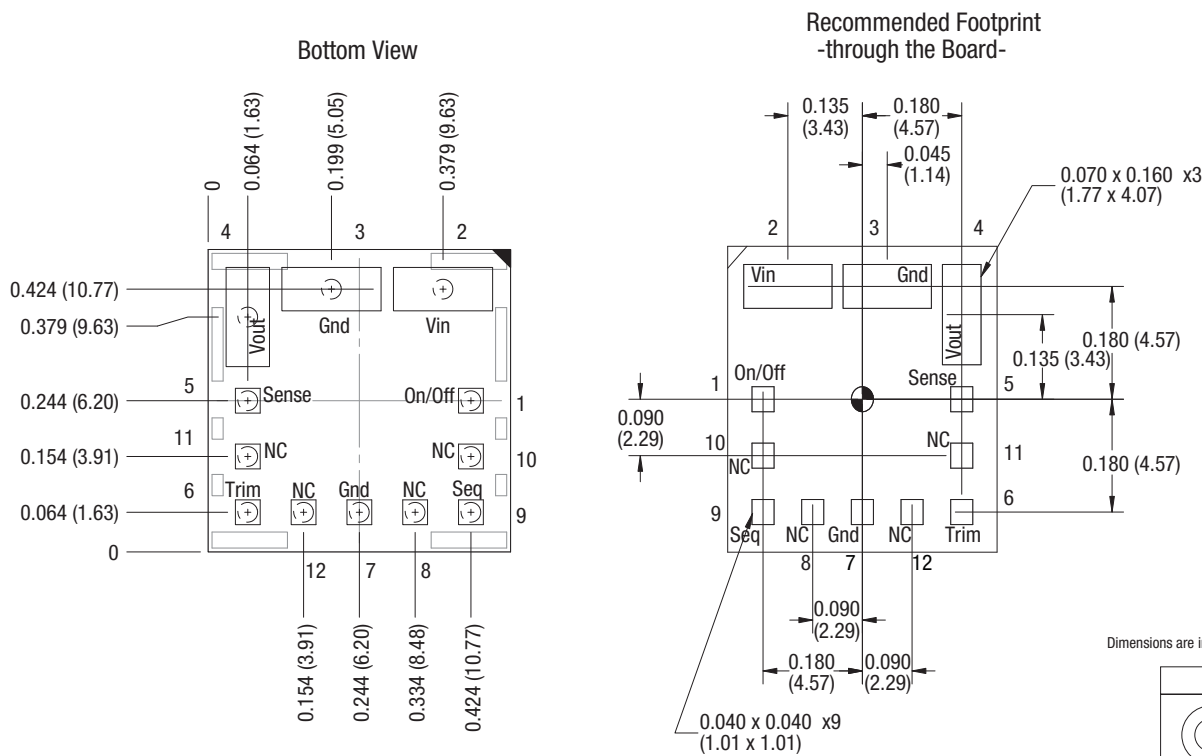
- First character – Last digit of manufacturing year, example 2009
- Second character – Month code (1 through 9 and 0 through D)
- Third character – Day code (1 through 9 = 1 to 9, 10=0 and 11 through 31 = A through Z)
- Fourth character – Manufacturing information

MECHANICAL SPECIFICATIONS

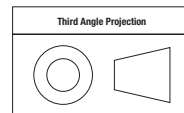


INPUT/OUTPUT CONNECTIONS	
Pin	Function
1	On/Off Control*
2	V _{IN}
3	Ground
4	V _{OUT}
5	Sense
6	Trim
7	Ground
8	NC
9	Sequence
10	NC
11	NC
12	NC

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



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