



Typical unit

PRODUCT OVERVIEW

The OKY-T/3 and -T/5 series are miniature non-isolated Point-of-Load (POL) switch mode DC/DC power converters for embedded applications. The module is fully compatible with Distributed-power Open Standards Alliance (DOSA) industry-standard specifications (www.dosapower.com). Applications include powering CPU's, datacom/telecom systems, programmable logic and mixed voltage systems.

The wide input range is 2.4 to 5.5 Volts DC. Two maximum output currents are offered, 3 Amps (T/3 models) or 5 Amps (T/5 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.

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 POL DC/DC power module
- 2.4-5.5Vdc input voltage range
- Programmable output voltage from 0.7525-3.63Vdc
- 3 Amp (T/3) or 5 Amp (T/5) output current models
- Drives 1000 μ F ceramic capacitive loads
- High power conversion efficiency at 96%
- Outstanding thermal derating performance
- Over temperature and over current protection
- On/Off control
- UL/EN/IEC 60950-1 safety
- Industry-standard (DOSA) surface-mount package
- 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, Soldering Guidelines | 5 |
| Application Notes | 6 |
| OKY-T/3-W5 Performance Data and Oscillograms | 9 |
| OKY-T/5-W5 Performance Data and Oscillograms | 13 |
| Tape and Reel Information | 19 |

Connection Diagram

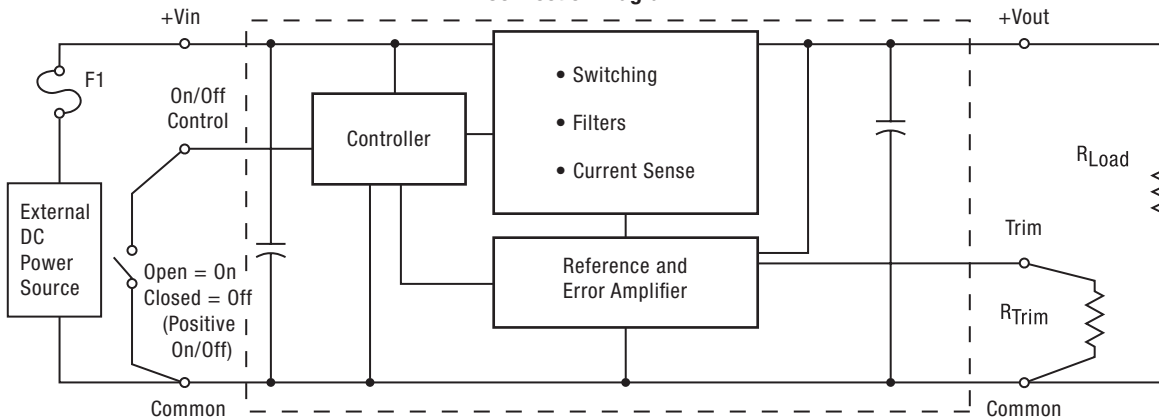


Figure 1. OKY-T/3, -T/5

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



Performance Specifications and Ordering Guide

| ORDERING GUIDE | | | | | | | | | | | | | | |
|----------------------|--------------------------|-----------------------------|---------------|--------------|--------------------|-------|------------------------------|-----------------|--------------------------------|------------------------------------|------------|-------|---|--------|
| Root Model ② | Output | | | | | | Input | | | | Efficiency | | Package | |
| | V _{OUT} (Volts) | I _{OUT} (Amps max) | Power (Watts) | R/N (mVp-p)⑤ | Regulation (Max.)③ | | V _{IN} Nom. (Volts) | Range (Volts) ④ | I _{IN} , no load (mA) | I _{IN} , full load (Amps) | Min. | Typ. | Case C72 ① | Pinout |
| | | | | Max. | Line | Load | | | | | | | | |
| OKY-T/3-W5N-C | 0.7525-3.63 | 3 | 10.9 | 20 | ±0.2% | ±1.5% | 5 | 2.4-5.5 | 45 | 2.1 | 92% | 94.4% | 0.47 x 0.82 x 0.28 (11.9 x 20.8 x 7.0) | P78 |
| OKY-T/3-W5P-C | 0.7525-3.63 | 3 | 10.9 | 20 | ±0.2% | ±1.5% | 5 | 2.4-5.5 | 45 | 2.1 | 92% | 94.4% | 0.47 x 0.82 x 0.28 (11.9 x 20.8 x 7.0) | P78 |
| OKY-T/5-W5N-C | 0.7525-3.63 | 5 | 18 | 20 | ±0.2% | ±1% | 5 | 2.4-5.5 | 35 | 3.5 | 92% | 96% | 0.47 x 0.82 x 0.28 (11.9 x 20.8 x 7.0) | P78 |
| OKY-T/5-W5P-C | 0.7525-3.63 | 5 | 18 | 20 | ±0.2% | ±1% | 5 | 2.4-5.5 | 35 | 3.5 | 92% | 96% | 0.47 x 0.82 x 0.28 (11.9 x 20.8 x 7.0) | P78 |

① Dimensions are in inches (mm).

② These are partial model numbers. Please refer to the part number structure for complete ordering part numbers.

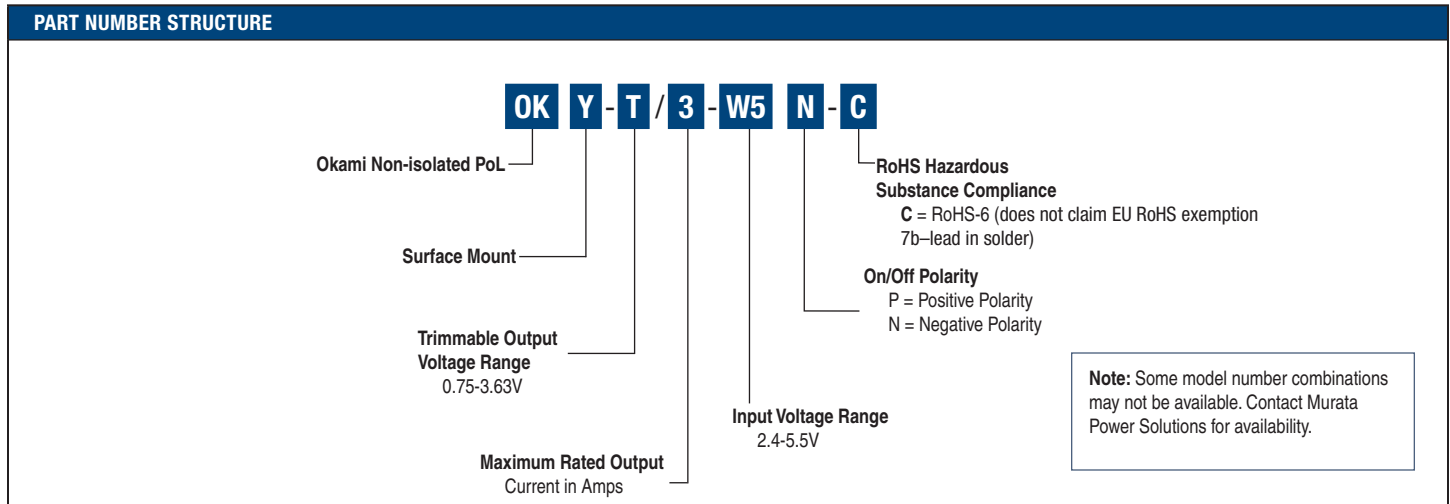
③ All specifications are at nominal line voltage, V_{OUT}=nominal (3.3V) and full load, +25 °C, unless otherwise noted.

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.

④ V_{IN} must be 0.5V or higher than V_{OUT}.

⑤ Ripple and Noise is shown at V_{OUT}=1V.



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 on page 1. Here is the layout of the label:

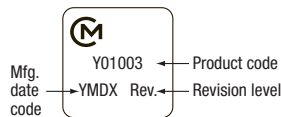


Figure 2. Label Artwork Layout

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 |
|---------------|--------------|
| OKY-T/3-W5N-C | Y00003 |
| OKY-T/3-W5P-C | Y01003 |
| OKY-T/5-W5N-C | Y00005 |
| OKY-T/5-W5P-C | Y01005 |

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

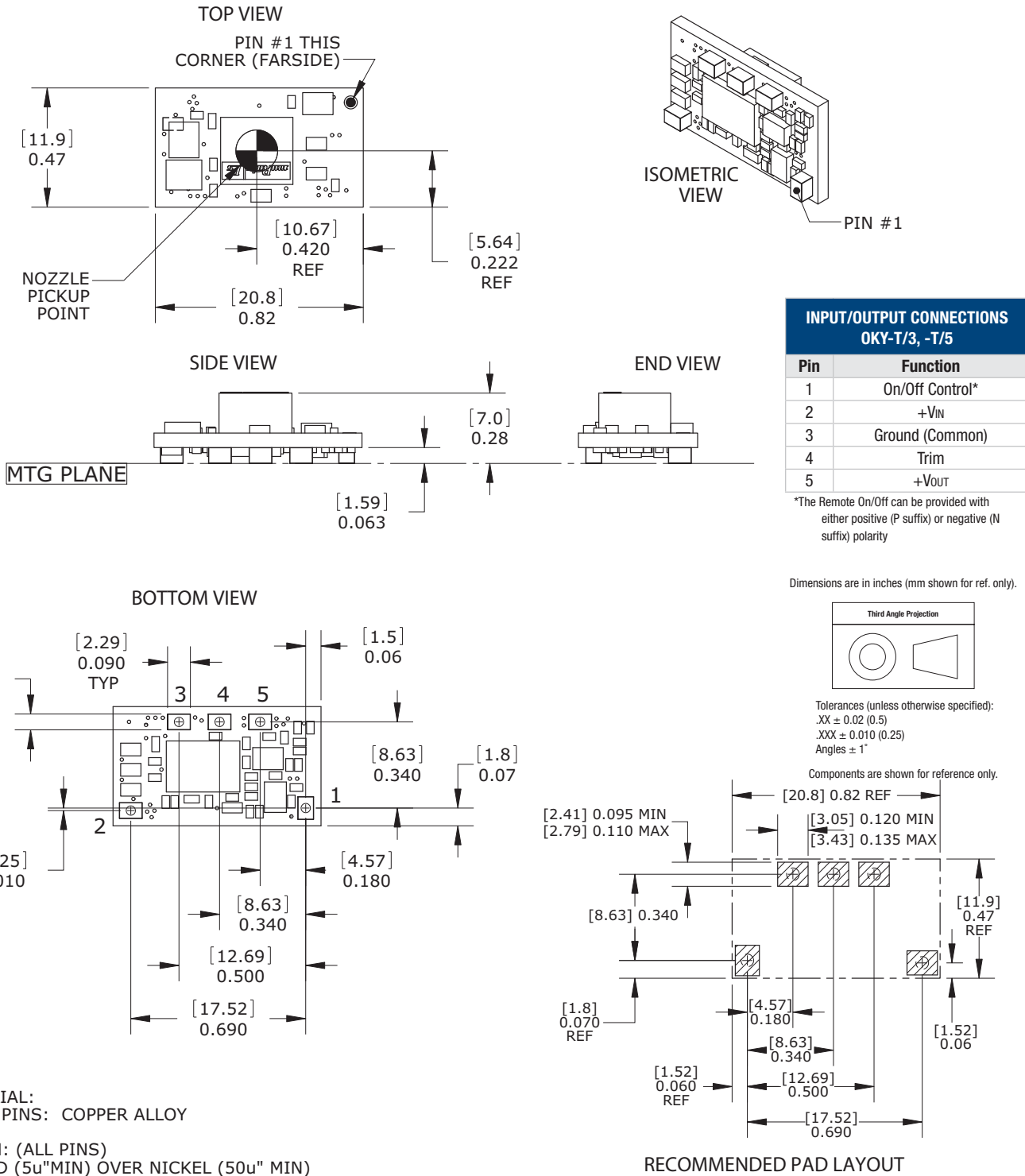


Figure 3. OKY-T/3, -T/5 Mechanical Outline

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. © 2010 Murata Power Solutions, Inc.