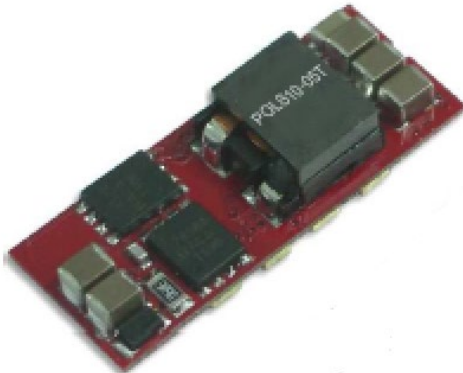
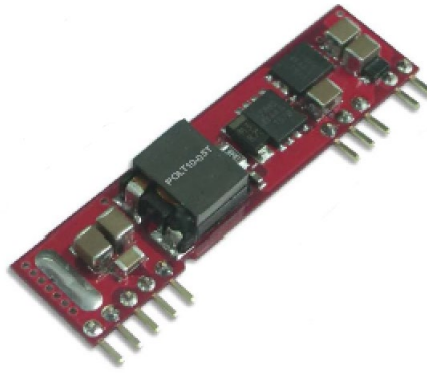


SMD Type



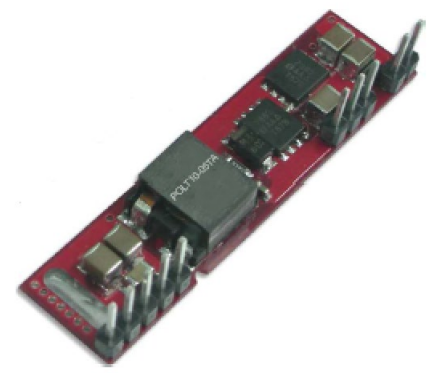
Size: 1.30in x 0.53in x 0.30in

SIP Vertical Mounting



Size: 2.00in x 0.50in x 0.28in

SIP Horizontal Mount



Size: 2.00in x 0.50in x 0.28in

OPTIONS

- SMD or SIP Package
- Vertical or Horizontal Mounting Available for SIP Models
- Negative or Positive Logic Remote Control Option

APPLICATIONS

- Wireless Network
- Telecom/Datacom
- Industry Control System
- Distributed Power Architectures
- Semiconductor Equipment
- Microprocessor Power Applications

FEATURES

- High Efficiency of 95%
- SMD and SIP Packages Available
- Small Size and Low Profile
- No Minimum Load Required
- SMD Package Qualified for Lead Free Reflow Solder Process According to ICP J-STD-020
- Low Output Ripple & Noise
- Compliant to RoHS II & REACH
- CE Marked
- Over Load, Short Circuit, and Over Temperature Protection
- Remote ON/OFF
- UL60950-1, EN60950-1, and IEC60950-1 Safety Approvals

DESCRIPTION

The POL10-05T series of DC/DC POL power converters offers 10A output current rating and 7.5-33 watts of output power in a small size and low profile package. This series consists of single output models with an operating input voltage range of 2.4~5.5VDC. Each model in this series is compliant to RoHS II & REACH, CE marked, has low ripple & noise, and is protected against over load, short circuit, and over temperature conditions. This series has UL60950-1, EN60950-1, and IEC60950-1 safety approvals. Please contact factory for order details.

MODEL SELECTION TABLE

| Model Number | Input Voltage Range | Output Voltage | Output Current @Full Load | Package Type | No Load Input Current 0.75VDC/3.3VDC | Maximum Capacitive Load ⁽¹⁾ | Efficiency ⁽²⁾ | Remote ON/OFF |
|---------------|---------------------|----------------|---------------------------|----------------|--------------------------------------|--|---------------------------|---------------|
| POLS10-05T | 5VDC (2.5~5.5VDC) | 0.75~3.3VDC | 10A | SMD | 100/300mA | 1000/5000µF | 95% | Positive |
| POLS10-05T-P | | | | | | | | Negative |
| POLT10-05T | 5VDC (2.5~5.5VDC) | 0.75~3.3VDC | 10A | SIP Vertical | 100/300mA | 1000/5000µF | 95% | Positive |
| POLT10-05T-P | | | | | | | | Negative |
| POLT10-05TA | 5VDC (2.5~5.5VDC) | 0.75~3.3VDC | 10A | SIP Horizontal | 100/300mA | 1000/5000µF | 95% | Positive |
| POLT10-05TA-P | | | | | | | | Negative |

SPECIFICATIONS

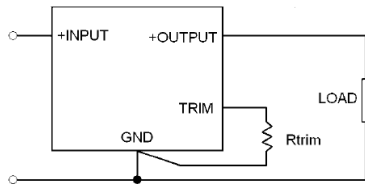
All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted.
 We reserve the right to change specifications based on technological advances.

| SPECIFICATION | TEST CONDITIONS | Min | Typ | Max | Unit |
|---|---|---|-----------|------|-------|
| INPUT SPECIFICATIONS | | | | | |
| Operating Input Voltage Range | Vout(set) , Vin=0.5VDC | 2.5 | 5 | 5.5 | VDC |
| Maximum Input Current | Vin=2.4 to 5.5VD, Io=Io(max.) | | 10 | | A |
| Input Reflected Ripple Current | 5~20MHz, 1μH source impedance | | 100 | | mAp-p |
| Start-Up Voltage | | | 2.2 | | VDC |
| Shutdown Voltage | | | 2.0 | | VDC |
| Input Filter ⁽³⁾ | | Capacitor Type | | | |
| OUTPUT SPECIFICATIONS | | | | | |
| Output Voltage | | See Table | | | |
| Voltage Accuracy | % of Vout(set) | -2.0 | | +2.0 | % |
| Line Regulation | Vin=Vout(set) +0.5VDC to Vin(max.) at Full Load; % of Vout(set) | -0.3 | | +0.3 | % |
| Load Regulation | No Load to Full Load; % of Vout(set) | -0.4 | | +0.4 | % |
| Voltage Adjustability ⁽⁴⁾ | | 0.7525 | | 3.63 | VDC |
| Remote Sense | | | | 0.5 | VDC |
| Output Current | | See Table | | | |
| Maximum Capacitive Load | | See Table | | | |
| Ripple & Noise | Measured by 20MHz BW, with a 1μF MLCC & a 10μF T/C | | | 15 | mVrms |
| | | | | 50 | mVp-p |
| Dynamic Load Response | With a 1μF MLCC & a 10μF T/C ΔIo/Δt=2.5A/μs, Vin(nom) Peak Deviation 50% load step change Setting Time(Vout<10%peak deviation) | | 200 | | mV |
| | | | 25 | | μS |
| Dynamic Load Response | With 2pcs of 150μF polymer capacitors ΔIo/Δt=2.5A/μs, Vin(nom) Peak Deviation 50% load step change Setting Time(Vout<10%peak deviation) | | 100 | | mV |
| | | | 100 | | μS |
| Temperature Coefficient | | -0.4 | | +0.4 | %/°C |
| Rise Time | Time for Vout to rise from 10% to 90% of Vout(set) | | | 6 | mS |
| REMOTE ON/OFF CONTROL⁽⁵⁾⁽⁶⁾ | | | | | |
| Negative Logic (Option) | DC-DC ON DC-DC OFF | Open or 0~0.3VDC 1.5VDC~Vin(max.) | | | |
| Positive Logic (Standard) | DC-DC ON DC-Dc OFF | Open or Vin(max.) 0~0.3VDC | | | |
| Input Current of CTRL Pin | | 0.01 | | 1.0 | mA |
| Remote OFF Input Current | | | 1.5 | | mA |
| Turn-On Delay Time ⁽⁷⁾ | | | 1 | | ms |
| Over Voltage Overshoot-Startup | Vin=2.4~5.5VDC at Full Load; % of Vout(set) | | 1.0 | | % |
| PROTECTION | | | | | |
| Short Circuit Protection | | Continuous, Automatic Recovery | | | |
| Over Load Protection | % of Iout rated | | 200 | | % |
| Over Temperature Protection | | | 125 | | °C |
| ENVIRONMENTAL SPECIFICATIONS | | | | | |
| Operating Case Temperature | With Derating | -40 | | +85 | °C |
| Storage Temperature | | -55 | | +125 | °C |
| Relative Humidity | | 5 | | 95 | %RH |
| Thermal Shock | | MIL-STD-810F | | | |
| Vibration | | MIL-STD-810F | | | |
| MTBF | MIL-HDBK-217F, Full Load | | 3,239,000 | | Hours |
| GENERAL SPECIFICATIONS | | | | | |
| Efficiency | | See Table | | | |
| Switching Frequency | | 270 | 300 | 330 | kHz |
| PHYSICAL SPECIFICATIONS | | | | | |
| Weight | | 0.21 oz(6.0g) | | | |
| Dimensions (L x W x H) | SMD Type | 1.30in x 0.53in x 0.30in (33mm x 13.5mm x 7.6mm) | | | |
| | SIP Type | 2.00in x 0.50in x 0.28in (50.9mm x 12.7mm x 7.2mm) | | | |
| SAFETY CHARACTERISTICS | | | | | |
| Safety Approvals | UL60950-1 ⁽⁸⁾ , EN60950-1, IEC60950-1 | | | | |
| Lead-Free Reflow Solder Process | IPC J-STD-020D | | | | |
| Moisture Sensitivity Level | IPC J-STD-033B, Level 2a | | | | |

NOTES

- (1) $ESR \geq 1m\Omega$ / $ESR \geq 10m\Omega$, Test by minimum input and constant resistive load.
- (2) $V_{in(nom)}$, 3.3VDC @ Full Load
- (3) It's necessary to equip the external input capacitors at the input of the module. The capacitors should connect as close as possible to the input terminals ensuring module stability. The external C_{in} is 3pcs of $150\mu F$ low-ESR polymer capacitors // 2pcs of $47\mu F$ ceramic capacitors at least.
- (4) Output voltage is programmable from 0.75V to 3.3V by connecting a single resistor (shown as Trim Table) between the Trim and GND pins of the module. To calculate the value of the resistor R_{trim} for a particular output voltage V_{out} , use the following equation:

Trim Figure



Trim Table

| Vout(set) (VDC) | Rtrim (kΩ) |
|-----------------|------------|
| 0.7525 | Open |
| 1.2 | 41.973 |
| 1.5 | 23.077 |
| 1.8 | 15.004 |
| 2.5 | 6.974 |
| 3.3 | 3.160 |

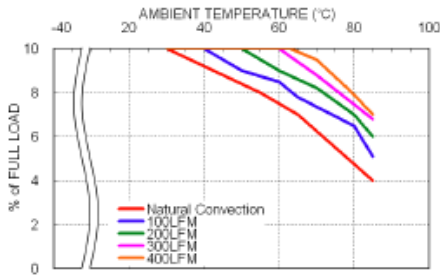
- (5) Remote On/Off referred to $-V_{in}$ pin
- (6) Positive Logic: ON/OFF is open collector/drain logic input
 Negative Logic: ON/OFF pin is open collector/drain logic input with external pull-up resistor.
- (7) Case 1: ON/OFF input is set to logic low (module on) and then input power is applied (delay from instant at which $V_{in}=V_{in(min)}$) until $V_{out}=10\%$ of $V_{out(set)}$
 Case 2: Input power is applied for at least one second and then the ON/OFF input is set to logic low (delay from instant at which $V_{on/off}=0.3VDC$ until $V_{out}=10\%$ of $V_{out(set)}$)
- (8) This product is Listed to applicable standards and requirements by UL.

CAUTION: This power module is not internally fused. An input line fuse must always be used.

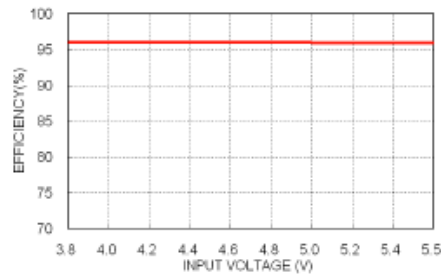
**Due to advances in technology, specifications subject to change without notice.*

CHARACTERISTIC CURVES

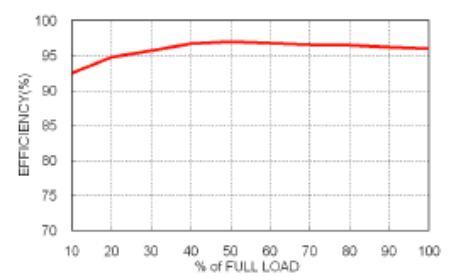
POLS10-05T, Vout=3.3V Derating Curve



POLS10-05T, Vout=3.3V Efficiency vs. Input Voltage



POLS10-05T, Vout=3.3V Efficiency vs. Output Load



MECHANICAL DRAWINGS

| POLS10-05T | | PIN CONNECTION | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------|--|--|-----|--------|---|-------|---|--------|---|--------|---|-------|---|-----|---|------|---|------|---|------|----|------|----|------|
| <p>Bottom view dimensions: 1.30(33.0) total width, 0.310(7.88) between pins 5 and 2, 0.570(14.48) between pins 4 and 3, 0.302(7.67) between pins 3 and 2, 0.190(4.83) between pins 4 and 3. Pin 6 is 0.062x0.112(1.57x2.84). Pin 1 is 0.04(1.1) wide. Side view shows a height of 0.30(7.6) and a thickness of 0.06(1.6).</p> | | <table border="1"> <thead> <tr> <th>PIN</th> <th>DEFINE</th> </tr> </thead> <tbody> <tr><td>1</td><td>Ctrl</td></tr> <tr><td>2</td><td>+Sense</td></tr> <tr><td>3</td><td>Trim</td></tr> <tr><td>4</td><td>+Vout</td></tr> <tr><td>5</td><td>GND</td></tr> <tr><td>6</td><td>+Vin</td></tr> </tbody> </table> | | PIN | DEFINE | 1 | Ctrl | 2 | +Sense | 3 | Trim | 4 | +Vout | 5 | GND | 6 | +Vin | | | | | | | | |
| PIN | DEFINE | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Ctrl | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | +Sense | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Trim | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | +Vout | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | GND | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | +Vin | | | | | | | | | | | | | | | | | | | | | | | | |
| POLT10-05T | | PIN CONNECTION | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Bottom view dimensions: 2.00(50.8) total width, 0.50(12.7) height, 0.100(2.54) between pins 10 and 6, 1.400(35.56) between pins 6 and 1, 1.800(45.72) between pins 11 and 1, 0.05(1.3) between pins 5 and 1. Side view shows a height of 0.28(7.2) and a thickness of 0.13(3.3).</p> | | <table border="1"> <thead> <tr> <th>PIN</th> <th>DEFINE</th> </tr> </thead> <tbody> <tr><td>1</td><td>+Vout</td></tr> <tr><td>2</td><td>+Vout</td></tr> <tr><td>3</td><td>+Sense</td></tr> <tr><td>4</td><td>+Vout</td></tr> <tr><td>5</td><td>GND</td></tr> <tr><td>6</td><td>GND</td></tr> <tr><td>7</td><td>+Vin</td></tr> <tr><td>8</td><td>+Vin</td></tr> <tr><td>10</td><td>Trim</td></tr> <tr><td>11</td><td>Ctrl</td></tr> </tbody> </table> | | PIN | DEFINE | 1 | +Vout | 2 | +Vout | 3 | +Sense | 4 | +Vout | 5 | GND | 6 | GND | 7 | +Vin | 8 | +Vin | 10 | Trim | 11 | Ctrl |
| PIN | DEFINE | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | +Vout | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | +Vout | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | +Sense | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | +Vout | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | GND | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | GND | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | +Vin | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | +Vin | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Trim | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | Ctrl | | | | | | | | | | | | | | | | | | | | | | | | |
| POLT10-05TA | | PIN CONNECTION | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Bottom view dimensions: 2.00(50.8) total width, 0.50(12.7) height, 0.100(2.54) between pins 10 and 6, 1.400(35.56) between pins 6 and 1, 1.800(45.72) between pins 11 and 1, 0.05(1.3) between pins 5 and 1. Side view shows a height of 0.28(7.2) and a thickness of 0.16(4.1).</p> | | <table border="1"> <thead> <tr> <th>PIN</th> <th>DEFINE</th> </tr> </thead> <tbody> <tr><td>1</td><td>+Vout</td></tr> <tr><td>2</td><td>+Vout</td></tr> <tr><td>3</td><td>+Sense</td></tr> <tr><td>4</td><td>+Vout</td></tr> <tr><td>5</td><td>GND</td></tr> <tr><td>6</td><td>GND</td></tr> <tr><td>7</td><td>+Vin</td></tr> <tr><td>8</td><td>+Vin</td></tr> <tr><td>10</td><td>Trim</td></tr> <tr><td>11</td><td>Ctrl</td></tr> </tbody> </table> | | PIN | DEFINE | 1 | +Vout | 2 | +Vout | 3 | +Sense | 4 | +Vout | 5 | GND | 6 | GND | 7 | +Vin | 8 | +Vin | 10 | Trim | 11 | Ctrl |
| PIN | DEFINE | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | +Vout | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | +Vout | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | +Sense | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | +Vout | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | GND | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | GND | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | +Vin | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | +Vin | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Trim | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | Ctrl | | | | | | | | | | | | | | | | | | | | | | | | |
| | | <p>Notes: All dimensions in inch(mm) Tolerance: x.xx±0.02 (x.xx±0.5) x.xxx±0.01 (x.xx±0.25) Pin Pitch Tolerance: ±0.01 (0.25) Pin Dimension Tolerance ±0.004(0.1)</p> | | | | | | | | | | | | | | | | | | | | | | | |

MODEL NUMBER SETUP

| POLT | 10 | - | 05 | T | - | P |
|----------------------------------|----------------|---|-----------------------|---|---|---|
| Series Name | Output Current | | Input Voltage | Package | | Remote Control Option |
| POLS: SMD Type POLT: SIP Type | | | 05: 2.4~5.5VDC | T: No Assembly (SMD Type) T: Vertical Mounting (SIP Type) TA: Horizontal Mounting (SIP Type) | | None: Positive Logic P: Negative Logic |

COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001: 2015 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

Contact **Wall Industries** for further information:

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