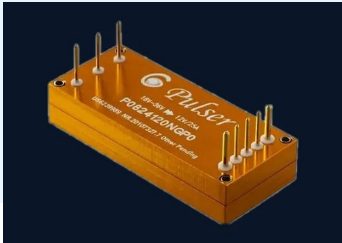


# Pulser Series

## 1/8 Brick up to 300W/25A | 94% Efficiency

The Pulser series delivers 300W/25A from 18~36V input in the industry-standard 1/8 brick package. Patented Buck-Reset Forward topology with PR-SR achieves 94% efficiency and 248 W/in3 power density. UltraFast i-Limit technology eliminates short-circuit current runaway. Optimized for pulsed-load applications: radar, test equipment, medical devices, and motor drives.



**300W**

Max Output

**94%**

Peak Efficiency

**248 W/in3**

Power Density

- Pulsed Load Optimized - Deviation <+/-8% for 0~90% load within 40us
- UltraFast i-Limit - Propagation delay reduced from 350us to 60ns
- Highest Efficiency - 94% peak with PR-SR at 450KHz
- High Density - 248 W/in3 in 1/8 brick footprint
- Metal Enclosed - Six-sided case, homogeneous heat spread
- UltraFast Protection - No short-circuit current runaway

### MODEL LIST

| Model    | Input  | Vout | Iout | Max Out | Eff. | Freq   |
|----------|--------|------|------|---------|------|--------|
| P0824120 | 18-36V | 12V  | 25A  | 300W    | 94%  | 450KHz |

## SPECIFICATIONS

### Absolute Maximum Ratings

|                 |                 |
|-----------------|-----------------|
| Storage Temp    | -55C to +125C   |
| Input (24V Op)  | -0.5V to +40Vdc |
| Input (48V Op)  | -0.5V to +80Vdc |
| Transient (24V) | 50V Max         |
| Transient (48V) | 100V Max        |
| I/O Isolation   | 2.0KV Min       |
| I/C Isolation   | 1.0KV Min       |
| O/C Isolation   | 1.0KV Min       |
| Remote Control  | -0.5V to +12Vdc |

### General

|                |               |
|----------------|---------------|
| Switching Freq | 450KHz        |
| MTBF           | 4.50x10^6 hrs |
| Weight         | 32g           |

### Control

|            |                  |
|------------|------------------|
| Logic High | +3.0V to +6.5V   |
| Logic Low  | 0V to +1.0V      |
| RC Current | -0.5mA to +1.5mA |

### Input

|                  |                         |
|------------------|-------------------------|
| Range (24V)      | +18V to +36Vdc          |
| Range (48V)      | +36V to +75Vdc          |
| Reflected Ripple | 20mA rms/60mAp-p        |
| Power ON         | 17~18V / 34~36V         |
| Power OFF        | 15.6~16.6V / 31.2~33.2V |
| Off Current      | 6mA Max                 |
| Latch Current    | 8mA Max                 |
| Input Cap        | 40uF/20uF Max           |

### Output (P0824120)

|                  |                       |
|------------------|-----------------------|
| Voltage Accuracy | +/-1.0%               |
| Line Regulation  | +/-0.2%               |
| Load Regulation  | +/-0.2%               |
| Temp Drift       | +/-0.03%/C            |
| Ripple/Noise     | 3% Vo (1% RMS)        |
| OVP              | 115~130% Vo           |
| Current Limit    | 108%~125%             |
| Trim             | +/-10%                |
| Step Load 50-75% | +/-3% Vo, COUT=0uF    |
| Step Load 10-90% | +/-5% Vo, COUT=100uF  |
| Step Load 0-100% | +/-3% Vo, COUT=2200uF |
| Start-Up         | 20ms/250ms            |

**NOTE:** Specs typical at nominal input, full load, 25C unless noted.

Specifications subject to change without notice.

## TYPICAL PERFORMANCE

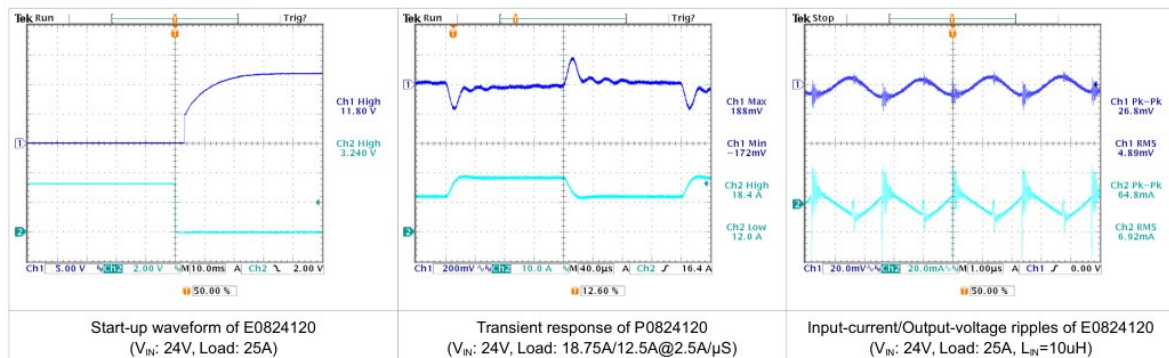
### P08 Pulser 1/8 Brick

**Model Number: P0824120**

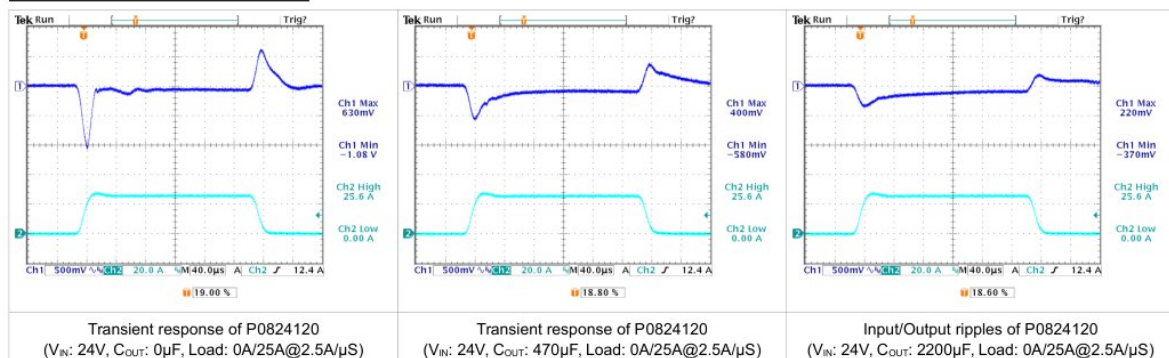
#### MODEL PARAMETERS

| General                        |                                              |                                                                                                               |
|--------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Conversion Efficiency          | Typical                                      | See efficiency plots                                                                                          |
| Switching Frequency            | Typical                                      | 450KHz                                                                                                        |
| Input/Output                   |                                              |                                                                                                               |
| Reflected Input Ripple Current | $L_{EXT} = 10\mu H$                          | 20mA rms/60mAp-p                                                                                              |
| Input Ripple Rejection (<1KHz) | $V_{NOM}$ , Full Load                        | -50dB                                                                                                         |
| Voltage Accuracy               | Typical                                      | $\pm 1.0\%$                                                                                                   |
| Line Regulation                | Full Input Range                             | $\pm 0.2\%$                                                                                                   |
| Load Regulation                | 0%~100%                                      | $\pm 0.2\%$                                                                                                   |
| Temperature Drift              | -40°C ~100°C                                 | $\pm 0.03\%/^{\circ}C$                                                                                        |
| Output Tolerance Band          | All Conditions                               | $\pm 4\%$                                                                                                     |
| Ripple & Noise (20MHz)         | Peak-Peak (RMS)                              | 3% (1%) $V_O$                                                                                                 |
| Over Voltage Protection        | $V_{NOM}$ , 10% Load                         | 115~130 % $V_O$                                                                                               |
| Output Current Limits          | $V_{NOM}$                                    | 108%~125%                                                                                                     |
| Voltage Trim                   | $V_{NOM}$ , 10% Load                         | $\pm 10\%$                                                                                                    |
| Step Load (2.5A/ $\mu s$ )     | 50%~75% Load<br>10%~90% Load<br>0%~100% Load | $\pm 3\% V_O$ $C_{OUT} = 0\mu F$<br>$\pm 5\% V_O$ $C_{OUT} = 100\mu F$<br>$\pm 3\% V_O$ $C_{OUT} = 2200\mu F$ |
| Start-Up Delay Time            | $V_{NOM}$ , Full Load                        | 20mS/250mS                                                                                                    |

#### TYPICAL WAVEFORMS

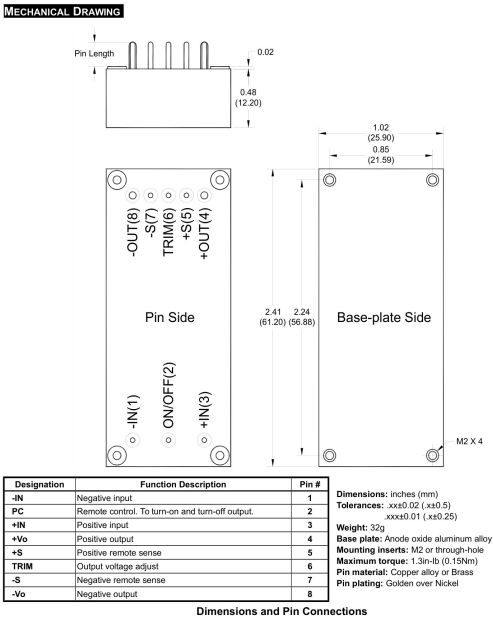


#### PULSED-LOAD WAVEFORMS



MECHANICAL DRAWING

P08 Pulser 1/8 Brick



NOTE:

1. It is recommended that the input should be protected by fuses or other protection devices.
2. Specifications are subject to change without notice.
3. Printed or downloaded datasheets are not subject to Onetech document control.
4. Product labels shown, including safety agency certificates, may vary based on the date of manufacture.
5. Information provided in this documentation is for ordering purposes only.
6. This product is not designed for use in critical life support systems, nuclear control systems or other such applications, which necessitate specific safety and regulatory standards other than the ones listed in this datasheet.

**Disclaimer:**  
In order to secure effective usage of converter and the validity of Onetech's service and warranty coverage, please refer to the application notes for general usage. For needs of usage beyond the application notes, please contact to Onetech headquarter or our regional sales representative office for help.

Pin Connections

| Pin | Designation | Function        |
|-----|-------------|-----------------|
| 1   | -IN         | Negative input  |
| 2   | PC          | Remote control  |
| 3   | +IN         | Positive input  |
| 4   | +Vo         | Positive output |
| 5   | +S          | Sense           |
| 6   | TRIM        | Voltage adjust  |
| 7   | -S          | Sense           |
| 8   | -Vo         | Negative output |

Weight: 32g | M2 mounting | Max torque: 1.3 in-lb (0.15Nm)  
Pin: Copper alloy/Brass, Golden over Nickel plating

## PULSED-LOAD & NOTES

|                               |                         |
|-------------------------------|-------------------------|
| 0-90% Load Step, COUT=0uF     | +/-8% Vo peak deviation |
| 0-90% Load Step, COUT=470uF   | +/-5% Vo peak deviation |
| 0-100% Load Step, COUT=2200uF | +/-3% Vo peak deviation |
| Slew Rate                     | 2.5A/us                 |
| Settling Time                 | <40us                   |
| UltraFast i-Limit             | 60ns prop delay         |
| Short Circuit Current         | <75A @ 2mOhm            |

### NOTES:

- 1. Use fuses or protection devices on the input.
- 2. Specs typical at nominal input, full load, 25C.
- 3. Subject to change without notice.
- 4. Not for critical life support applications.

### Contact OneTech Integration

[sales@onetech-integration.com](mailto:sales@onetech-integration.com)

[www.onetech-integration.com](http://www.onetech-integration.com) | +886-3-495-3882 | Taiwan R.O.C.