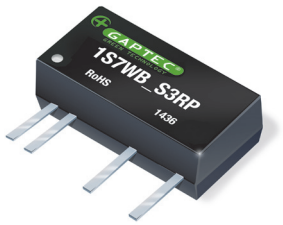
GAPTEC®
GREEN TECHNOLOGY

# 1S7WB Series

1W - Single/Dual Output - Wide Input - Isolated & Regulated
SIP Package




## DC-DC Converter 1 Watt

- **7PIN SIP package**
- **2:1 Wide input voltage range**
- **High Efficiency up to 80%**
- **Regulated output types**
- **Internal SMD construction**
- **Operating temperature: -40°C to +85°C**
- **Short circuit protection (SCP)**
- **RoHS Compliance**
- **No external component required**
- **Industry standard pinout**







The 1S7WB Series are specially designed for applications where a group of polar power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:
1) Where the voltage of the input power supply is wide range (voltage range≤2:1)
2) Where isolation is necessary between input and output (isolation voltage ≤3000VDC);
3) Where the regulation of the output voltage and the output ripple noise are demanding.

### Common specifications

| | |
|---|---|
| Input voltage range: | 2:1 |
| Filter: | Capacitor |
| Short circuit protection: | Continuous |
| Cooling: | Free air convection |
| Operation temperature range: | -40°C~+85°C |
| Storage temperature range: | -55°C ~+125°C |
| Storage humidity range: | < 95% |
| Temperature coefficient: | 0.03 %/°C MAX (full load) |
| Switching Frequency: | 100kHz TYP |
| Case material: | DAP |
| MTBF (MIL-HDBK 217F): | +25°C: 1500000 hours |
| Weight: | 2.7g |

### Isolation specifications

| Item | Test condition | Min | Typ | Max | Units |
|---|---|---|---|---|---|
| Isolation voltage | Tested for 1 second | | 3000 | | VDC |
| Isolation resistance | 500VDC | 1000 | | | MΩ |

### Output specifications

| Item | Test condition | Min | Typ | Max | Units |
|---|---|---|---|---|---|
| 100% full load | | | | ±5 | % |
| Line regulation | Regulated | | ±0.5 | | % |
| Load regulation | Regulated | | ±1.5 | | % |
| Output ripple & noise | 20MHz Bandwidth<br>• 5V, 9V<br>• 12-24V | | | 100<br>1% of Vout | mVp-p<br>mVp-p |
| Transient response setting time | 50% load step change | | 350 | | us |

**Model selection:**
**WCTVP_xxyyN##O**
**W=**Watt; **C=** Case; **T=**Type; **V=** Voltage Variation; **P=**Pinning; **xx=** Vin; **yy=** Vout; **N=** Numbers of Output; **##=** Isolation (kVDC); **O=** Output Regulation

**Example:**
**1S7WB_0505S3RP**
**1= 1Watt; S7= SIP7; W= 2:1 Input; A= Pinning; 5 Vin; ±5Vout; S= Single Output; 3= 3000 VDC Isolation; R= Regulated Output; P= Short circuit protection (SCP)**

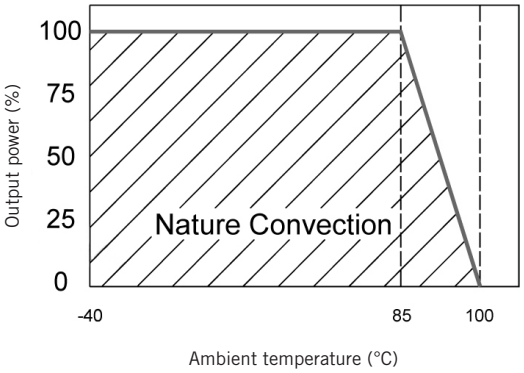
**Note:**
1. Operation under minimum load will not damage the converter; However, they may not meet all specification listed.
2. All specifications measured at Ta=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
3. In this datasheet, all the test methods of indications are based on corporate standards.

| Part Number | Input Voltage Range [V] | Output Voltage [VDC] | Output Current [mA] | Efficiency [%, max] |
|---|---|---|---|---|
| 1S7WB_0505S3RP | 4.5-9 | 5 | 200 | 65 |
| 1S7WB_0509S3RP | 4.5-9 | 9 | 112 | 70 |
| 1S7WB_0512S3RP | 4.5-9 | 12 | 84 | 70 |
| 1S7WB_0515S3RP | 4.5-9 | 15 | 67 | 70 |
| 1S7WB_0524S3RP | 4.5-9 | 24 | 42 | 75 |
| 1S7WB_1205S3RP | 9-18 | 5 | 200 | 70 |
| 1S7WB_1209S3RP | 9-18 | 9 | 112 | 75 |
| 1S7WB_1212S3RP | 9-18 | 12 | 84 | 75 |
| 1S7WB_1215S3RP | 9-18 | 15 | 67 | 75 |
| 1S7WB_1224S3RP | 9-18 | 24 | 42 | 80 |
| 1S7WB_2405S3RP | 18-36 | 5 | 200 | 75 |
| 1S7WB_2409S3RP | 18-36 | 9 | 112 | 80 |
| 1S7WB_2412S3RP | 18-36 | 12 | 84 | 80 |
| 1S7WB_2415S3RP | 18-36 | 15 | 67 | 80 |
| 1S7WB_2424S3RP | 18-36 | 24 | 42 | 80 |

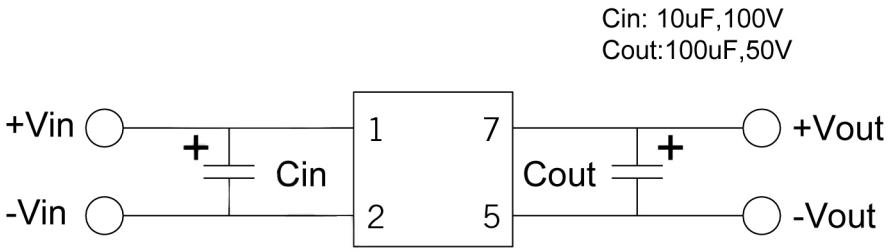

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Specifications subject to change without notice.

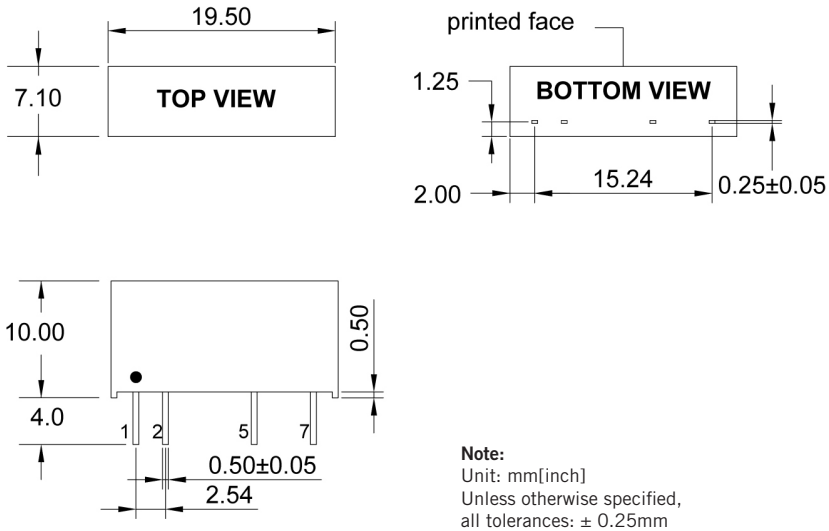
## Derating graph




## Recommended test circuit




## Mechanical dimensions




**Note:**
Unit: mm[inch]
Unless otherwise specified,
all tolerances: ± 0.25mm

**PIN connection:**

| PIN | 1 | 2 | 5 | 7 |
|---|---|---|---|---|
| Single | +Vin | -Vin | -Vout | +Vout |