## Features




RoHS compliant

- Wide 4 : 1 Input Voltage Range(9~36V,18~75V)
- Remote On/Off
- High Efficiency up to 86%
- Input / Output Isolation Voltage: 1.5K Vdc
- Extended Operating Temperature Range: -40°C to +85°C
- Output Short Circuit Protection:

  Hiccup, continuous & Auto Recovery
- Over Voltage Protection: Clamp Mode
- Shielded Metal Case with Insulated Baseplate
- Lead Free Design, RoHS Compliant
- 24pin DIP Package with Industry-Standard Footprint
- Customer Design Available

## Description

The BOB8W Series are isolated 8W DC/DC converters. Designed with highly efficiency, allow the operating temperature range of these units to be -40°C to +85°C in a 24 pin DIP package with industry-standard footprint. Further features include wide 4 : 1 input voltage range, remote on/off control, short-circuit protection and over voltage protection.

## Applications

These converters are well suitable for battery operated equipment, measurement equipment, telecom, wireless network, Industry control system, everywhere where isolated, tightly regulated voltages and compact size are required.

## Technical Specification

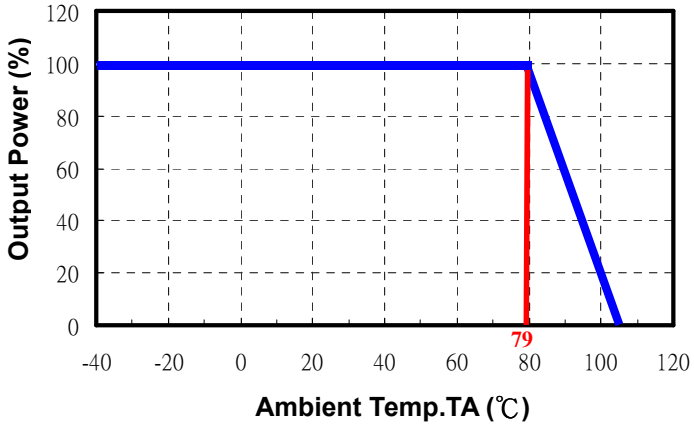
All specifications are typical at nominal input, full load and 25°C unless otherwise stated.

| Model Number | Input Voltage Range | Output Voltage (Vdc) | Output Current (mA) | | Input Current (mA) | | Eff .(1) (%) | Capacitive Load, max.(2) (uF) |
|---|---|---|---|---|---|---|---|---|
| | | | Min. Load | Full. Load | No Load | Full Load | | |
| BOB8-24S0W | 9~36V Nominal:24Vdc | 3.3 | 0 | 2000 | 30 | 343 | 84 | 20200 |
| BOB8-24S1W | | 5 | 0 | 1500 | 45 | 386 | 85 | 14400 |
| BOB8-24S2W | | 12 | 0 | 665 | 15 | 410 | 85 | 2300 |
| BOB8-24S3W | | 15 | 0 | 535 | 16 | 413 | 85 | 1530 |
| BOB8-24D1W | | ±5 | 0 | ±800 | 17 | 422 | 83 | 6700 |
| BOB8-24D2W | | ±12 | 0 | ±335 | 20 | 418 | 85 | 1000 |
| BOB8-24D3W | | ±15 | 0 | ±265 | 20 | 409 | 85 | 760 |
| BOB8-48S0W | 18~75V Nominal:48Vdc | 3.3 | 0 | 2000 | 13 | 172 | 84 | 22200 |
| BOB8-48S1W | | 5 | 0 | 1500 | 21 | 190 | 86 | 13000 |
| BOB8-48S2W | | 12 | 0 | 665 | 6 | 205 | 85 | 2000 |
| BOB8-48S3W | | 15 | 0 | 535 | 6 | 206 | 85 | 1330 |
| BOB8-48D1W | | ±5 | 0 | ±800 | 5 | 211 | 83 | 6900 |
| BOB8-48D2W | | ±12 | 0 | ±335 | 6 | 207 | 85 | 1100 |
| BOB8-48D3W | | ±15 | 0 | ±265 | 7 | 204 | 85 | 760 |

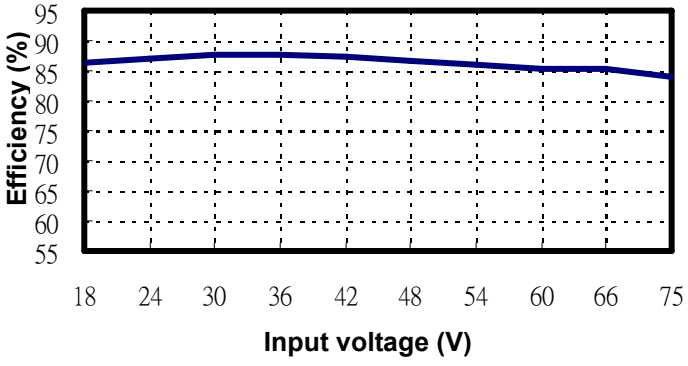
| | | |
|---|---|---|
| **Input Specifications** | | |
| Input Voltage | 24V nominal input | 9-36Vdc |
| | 48V nominal input | 18-75Vdc |
| Input filter | | Pi Type |
| Input surge voltage | 24V input | 50Vdc |
| (100ms max.) | 48V input | 100Vdc |
| Input reflected ripple current | Nominal Vin and full load | 200mAp-p typ. |
| Start up time | Nominal Vin and constant resistive load | 75ms typ. |
| Remote ON/OFF | Converter: ON | Open or 3.5V＜Vr＜12V |
| | Converter: OFF | Short (3) or 0V＜Vr＜0.7V |
| Sourcing current of remote control pin | Nominal Vin | ＜0.2 mA |
| Idle input current (at Remote OFF state) | Nominal Vin | ＜6 mA |
| **Environmental Specifications** | | |
| Operating ambient temperature | | -40°C to +85°C (with derating) |
| Maximum case temperature | | +100°C |
| Storage temperature range | | -55°C to +105°C |
| Relative humidity | | 5% to 95% RH |
| Temperature coefficient | | ±0.02% / °C max. |
| **Output Specifications** | | |
| Output power | | 8 Watts max. |
| Voltage accuracy | Full load and nominal Vin | ±1% |
| Minimum load | | See table |
| Line regulation | LL to HL at full load | ±0.5% |
| Load Regulation | 25% load to full load Single | ±1% |
| | Balanced load Dual | ±1% |
| | Unbalanced load 25% to 100% full load | ±5% |
| Ripple and Noise | 20MHz bandwidth | 50mVp-p max. |
| Over voltage protection (Zener Diode Clamp) | 3.3Vout models | 3.9V |
| | 5Vout models | 6.2V |
| | 12Vout models | 15V |
| | 15Vout models | 18V |
| Capacitive load | | See table |
| Over load protection | % of full load at nominal input | 150% typ. |
| Short circuit protection | | Hiccup, continuous (Auto Recovery) |
| Transient response settling time | 50% load step change | 450μs typ. |
| Transient response over shoot | di/dt=0.8A/μs | ≤ ±5% of Vo |

| General Specifications | | |
|---|---|---|
| Efficiency | Nominal input | See table |
| Isolation voltage | Input to output | 1500Vdc |
| Isolation resistance | 500Vdc | $10^9$ Ohms min. |
| Isolation capacitance | | 260pF typ. |
| Switching frequency | | 300kHz typ. |
| Reliability, calculated MTBF | | $2.11 \times 10^6$ Hrs |
| **Physical Specifications** | | |
| Case material | | Nickel-coated copper |
| Base material | | Non-conductive black plastic |
| Potting material | | Silicon rubber (UL94V-0) |
| Dimensions | | 1.25 × 0.80 × 0.40 Inch<br>(31.75 × 20.32 × 10.16 mm) |
| Weight | | 18g (0.62oz) typ. |

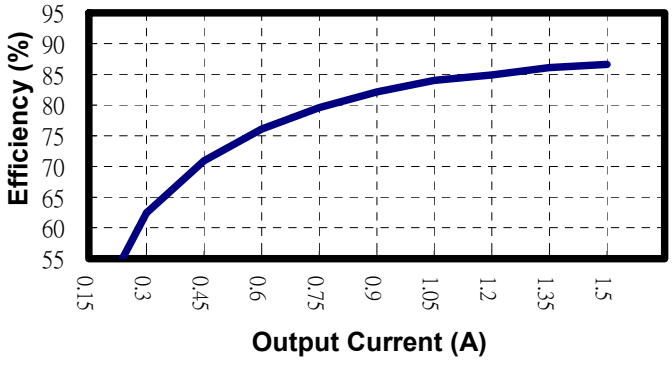
**BOB8W Series**
**Power Derating Curve(4)**




**BOB8-48S1W**
**Input voltage vs. Efficiency**

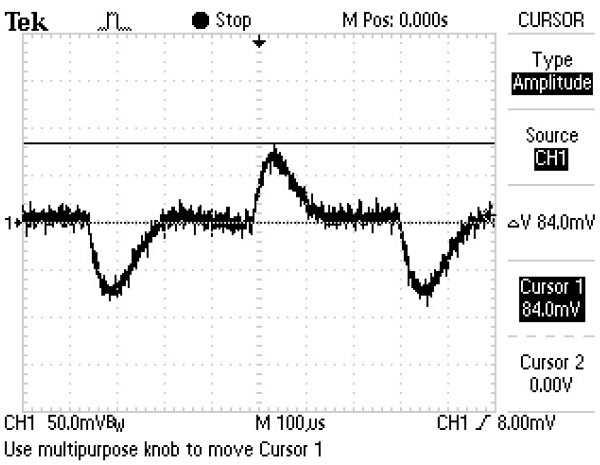



**BOB8-48S1W**
**Output Current vs. Efficiency**



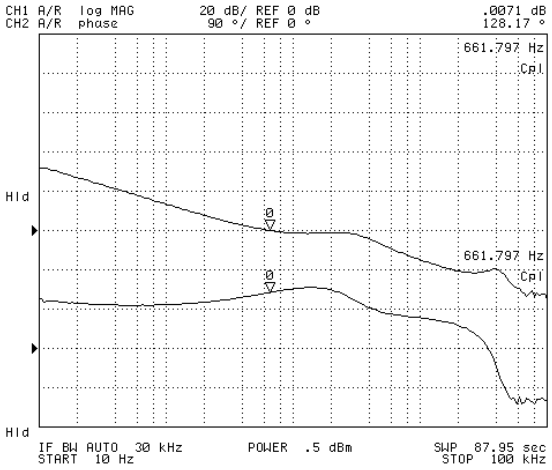
## BOB8-48S1W

**Transient Response at 50%~100% Max Load**




## BOB8-48S1W

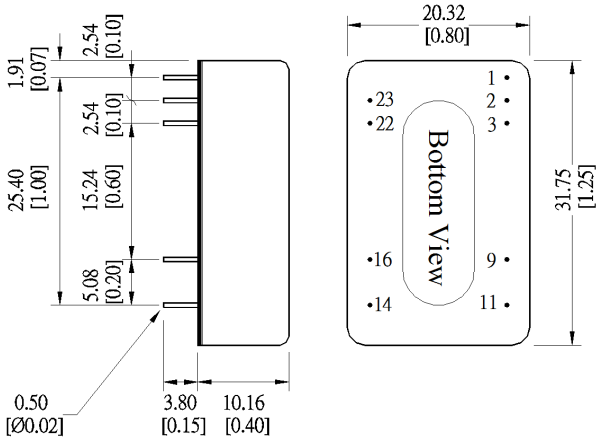
**Loop Gain & Phase at Vi=48V,Full Load**




## Note

1. Typical value, tested at nominal input and full load.
2. For each output.
3. Short to -Vin (Pin 2,3).
4. Based on BOB8-48S1W.

## Mechanical Dimensions




Unit: mm [inch]
Tolerance:±0.5[0.02]

| Pin Assignment | | |
|---|---|---|
| Pin | Single | Dual |
| 1 | Remote On/Off | |
| 2 | -Vin | -Vin |
| 3 | -Vin | -Vin |
| 9 | No function | Common |
| 11 | No function | -Vout |
| 14 | +Vout | +Vout |
| 16 | -Vout | Common |
| 22 | +Vin | +Vin |
| 23 | +Vin | +Vin |

Specifications subject to change without notice.