



Features

- 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

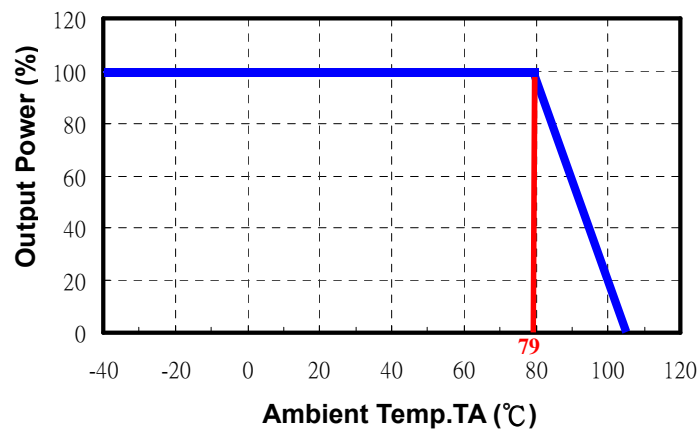


Input Specifications			
Input Voltage	24V nominal input		9-36Vdc
	48V nominal input		18-75Vdc
Input filter			Pi Type
Input surge voltage	24V input		50Vdc
(100ms max.)	48V input		100Vdc
Input reflected ripple current	Nominal Vin and full load		200mA _{p-p} typ.
Start up time	Nominal Vin and constant resistive 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		50mV _{p-p} max.
Over voltage protection (Zener Diode Clamp)	3.3V _{out} models		3.9V
	5V _{out} models		6.2V
	12V _{out} models		15V
	15V _{out} 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

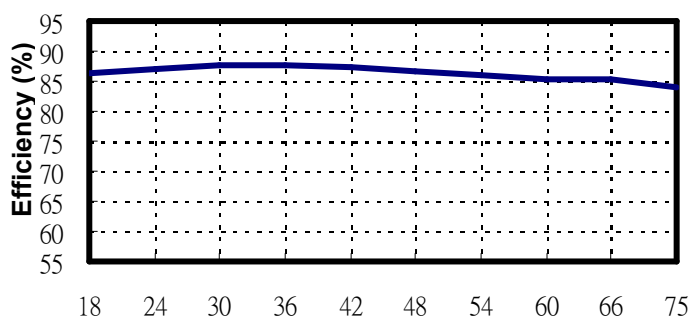


General Specifications		
Efficiency	Nominal input	See table
Isolation voltage	Input to output	1500Vdc
Isolation resistance	500Vdc	10^9 Ohms min.
Isolation capacitance		260pF typ.
Switching frequency		300kHz typ.
Reliability, calculated MTBF		2.11×10^6 Hrs
Physical Specifications		
Case material		Nickel-coated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

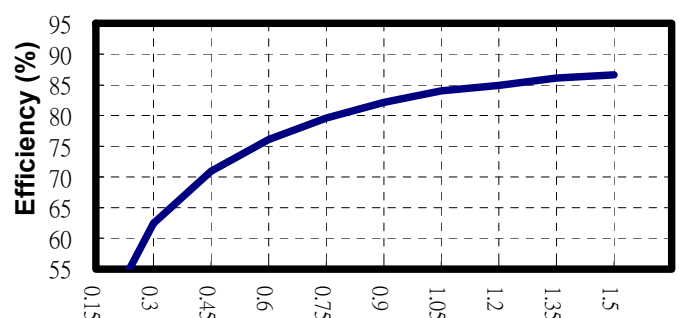
BOB8W Series
Power Derating Curve⁽⁴⁾



BOB8-48S1W
Input voltage vs. Efficiency

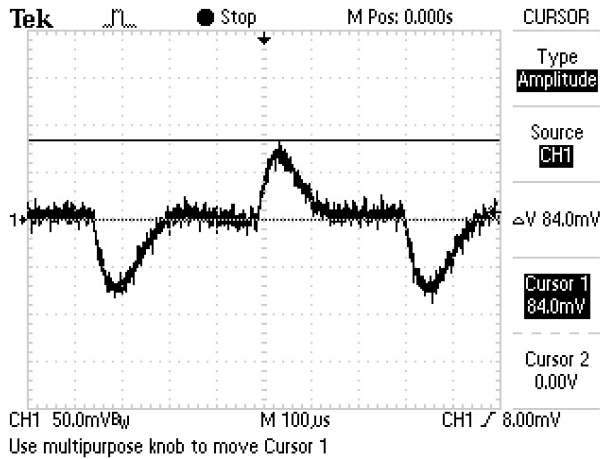


BOB8-48S1W
Output Current vs. Efficiency

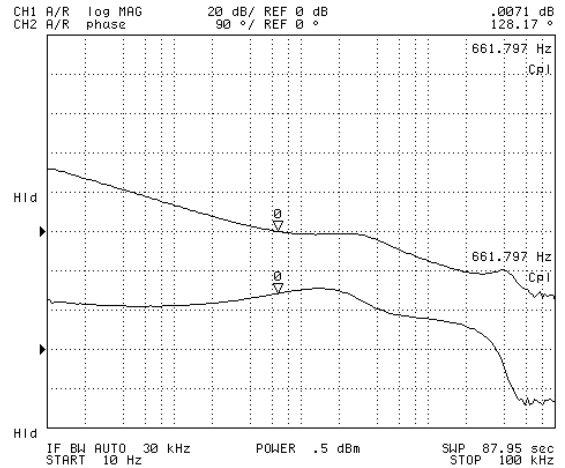


BOB8-48S1W

Transient Response at 50%~100% Max Load



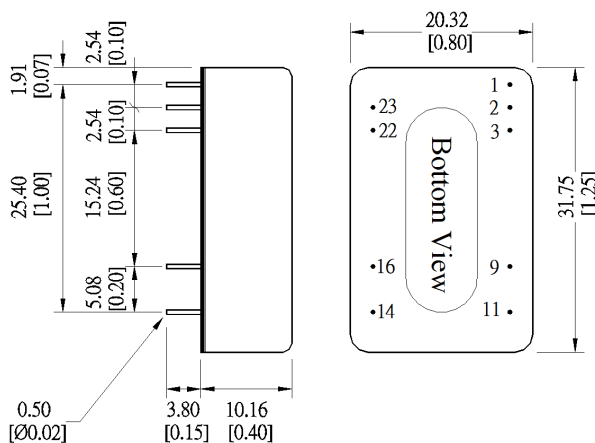
Loop Gain & Phase at $V_i=48V$, Full Load



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