



Features

- Wide 4 : 1 Input Voltage Range (9~36V,18~75V)
- High Power Density
- High Efficiency
- Operating Temperature Range: -40°C to +85°C
- Output Short Circuit Protection
- Output Over Voltage Protection
- Remote On /Off Control
- Input/ Output Isolation 3000 VDC
- Shielded Metal Case with Insulated Baseplate
- Lead Free Design, RoHS Compliant
- 24pin DIP Package with Industry-Standard Footprint



Applications

- Distributed power system
- Telecommunication application
- Battery powered equipment
- Industrial application
- Process control equipment
- Transportation equipment

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. ⁽²⁾ (%)	Capacitive Load, max. ⁽³⁾ (uF)
			Min. Load ⁽¹⁾	Full. Load	No Load	Full Load		
BOB5-24S0WH3	9~36V Nominal:24Vdc	3.3	38	1200	7	226	77	820
BOB5-24S1WH3		5	0	1000	12	274	80	680
BOB5-24S2WH3		12	0	500	8	316	83	220
BOB5-24S3WH3		15	0	400	9	320	82	147
BOB5-24D1WH3		±5	0	±500	12	274	80	330
BOB5-24D2WH3		±12	0	±250	12	320	82	100
BOB5-24D3WH3		±15	0	±200	14	320	82	68
BOB5-48S0WH3	18~75V Nominal:48Vdc	3.3	49	1200	4	113	77	820
BOB5-48S1WH3		5	0	1000	7	137	80	680
BOB5-48S2WH3		12	0	500	5	160	82	220
BOB5-48S3WH3		15	0	400	5	158	83	147
BOB5-48D1WH3		±5	0	±500	6	137	80	330
BOB5-48D2WH3		±12	0	±250	7	160	82	100
BOB5-48D3WH3		±15	0	±200	8	158	83	68

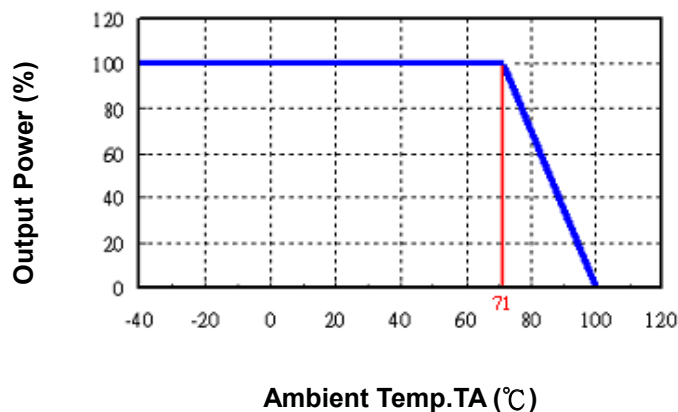


Input Specifications		
Input Voltage	24V nominal input	9-36Vdc
	48V nominal input	18-75Vdc
Input filter		Pi Type
Input surge voltage (100ms max.)	24V input	50Vdc
	48V input	100Vdc
Input reflected ripple current	Nominal Vin and full load	76mA _{p-p} typ.
Remote On/Off control	Converter: ON	Open or 3.5V < Vr < 12V
	Converter: OFF	Short ⁽⁴⁾ or 0V < Vr < 1.2V
Sourcing current of remote control pin	Nominal Vin	< 0.2 mA
Idle input current (at Remote OFF state)	Nominal Vin	< 2.5 mA
Start up time	Nominal Vin and constant resistive load	500ms max.
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		6 Watts max.
Voltage accuracy	Full load and nominal Vin	±2%
Minimum load		See table
Line regulation	LL to HL at full load	±0.5%
	25% load to full load	Single ±1%
Load Regulation	Balanced load	Dual ±1%
	Unbalanced load 25% to 100% full load	±5%
Ripple and Noise	20MHz bandwidth	80mV _{p-p} max.
	3.3V _{out} models	3.9V
Over voltage protection (Zener Diode Clamp)	5V _{out} models	6.2V
	12V _{out} models	15V
	15V _{out} models	18V
Capacitive load		See table
Over load protection	% of full load	120% min.
Short circuit protection		Continuous, automatic recovery
Transient response settling time	50% load step change	860µs max.
Transient response over shoot	di/dt=0.8A/µs	≤ ±5% of Vo



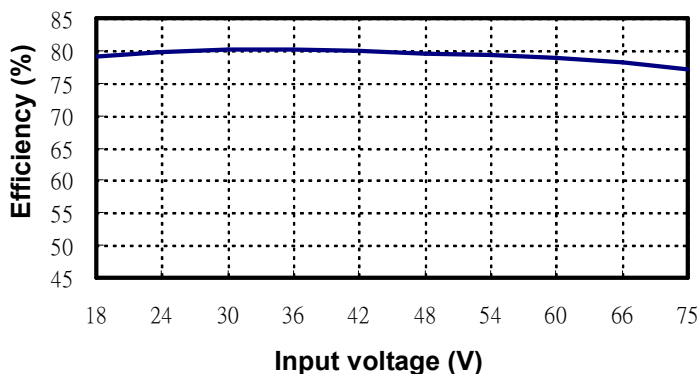
General Specifications		
Efficiency	Nominal input	See table
Isolation voltage	Input to output	3000VDC
Isolation resistance	500Vdc	10 ⁹ Ohms min.
Isolation capacitance		270pF typ.
Switching frequency		300kHz typ.
Reliability, calculated MTBF		2.40 × 10 ⁶ Hrs
Physical Specifications		
Case material		Nickel-coated 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		17.2g (0.59oz) typ.

**BOB5WH3Series
Power Derating Curve(5)**



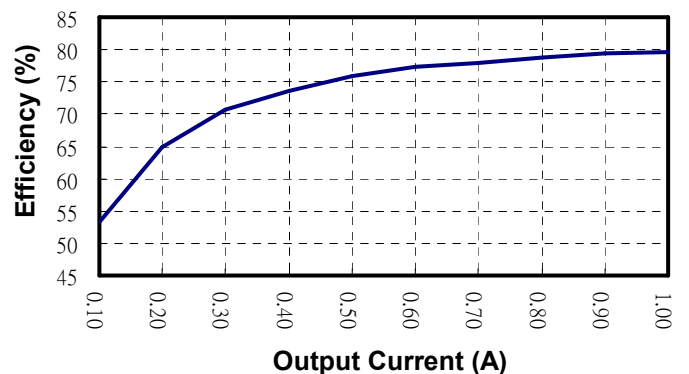
BOB5-48S1WH3

Input voltage vs. Efficiency



BOB5-48S1WH3

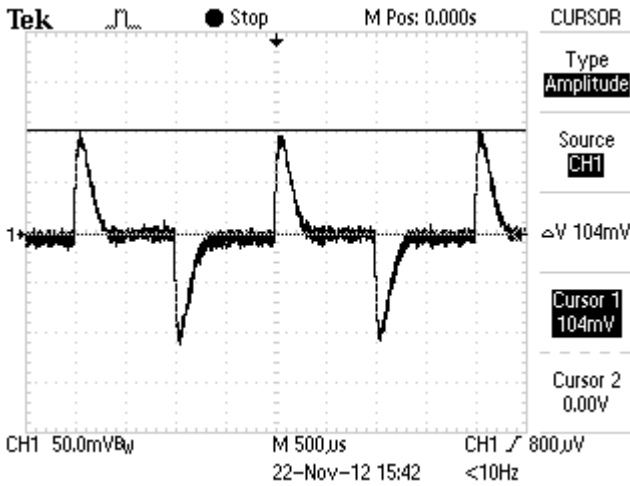
Output Current vs. Efficiency





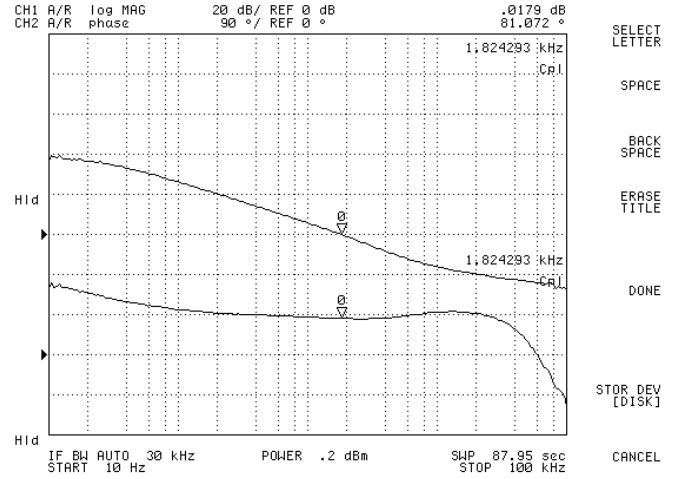
BOB5-48S1WH3

Transient Response at 50%~100% Max Load



BOB5-48S1WH3

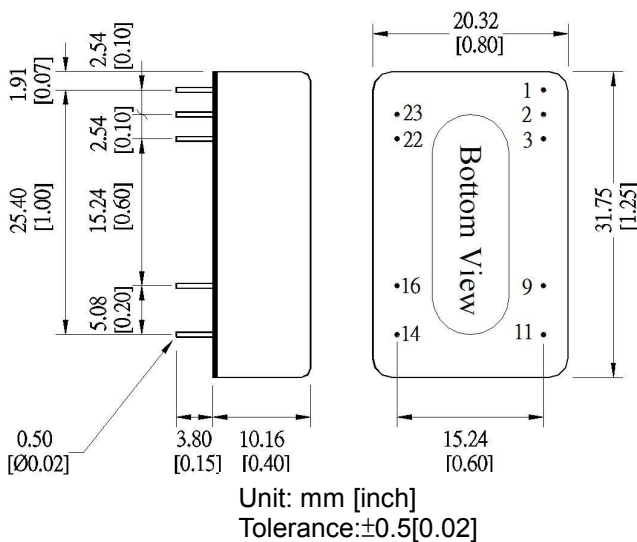
Loop Gain & Phase at Vi=48V, Full Load



Note

1. Io below this value will not damage these converters, however, they may not meet all listed specifications.
2. Typical value, tested at nominal input and full load.
3. For each output.
4. Short to -Vin (Pin 2,3).
5. Based on BOB5-48S1WH3.

Mechanical Dimensions



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

Specifications subject to change without notice.