Features

RoHS compliant

- Wide 4 : 1 Input Voltage Range(9~36V,18~75V)
- Remote On/Off
- Input / Output Isolation Voltage: 1.5K Vdc
- Extended Operating Temperature Range: -40°C to +85°C
- Output Short Circuit Protection:
  Continuous & Auto Recovery
- Over Voltage Protection: Clamp Mode
- Shielded Metal Case with Insulated Baseplate
- Lead Free Design, RoHS Compliant
- 6 pin DIP Package with Industry-Standard Footprint
- Customer Design Available

Description

The BUB12W Series are isolated 12W DC/DC converters. Designed with highly efficiency, allow the operating temperature range of these units to be -40°C to +85°C in a 6 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. (2) (%)	Capacitive Load, max. (3) (uF)
			Min. Load (1)	Full. Load	No Load	Full Load		
BUB12-24S0W	9~36V Nominal:24Vdc	3.3	203	2400	5.4	438	80	8260
BUB12-24S1W		5	73	2000	6.3	543	81	8800
BUB12-24S2W		12	0	1000	14.2	615	85	530
BUB12-24S3W		15	18	800	9.1	613	86	347
BUB12-24D1W		±5	33	±1000	7.5	531	83	1800
BUB12-24D2W		±12	13	±500	13.4	606	87	200
BUB12-24D3W		±15	9	±400	9.9	612	86	147
BUB12-48S0W	18~75V Nominal:48Vdc	3.3	243	2400	3.6	221	80	10550
BUB12-48S1W		5	89	2000	5.6	269	81	13720
BUB12-48S2W		12	33	1000	6.6	303	87	730
BUB12-48S3W		15	18	800	5.6	303	87	330
BUB12-48D1W		±5	33	±1000	5.3	261	84	2600
BUB12-48D2W		±12	18	±500	7	302	87	270
BUB12-48D3W		±15	9	±400	6.2	304	86	147

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	186mAp-p typ.
Start up time	Nominal Vin and constant resistive load	350ms typ.
Remote ON/OFF	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	＜3 mA

Environmental Specifications

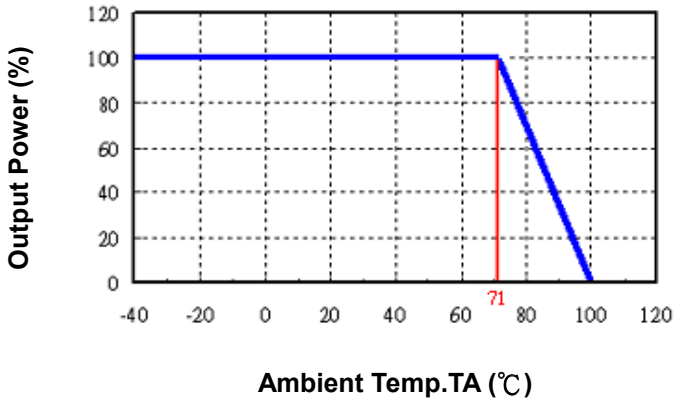
Operating ambient temperature	-40°C to +85°C (with derating)
Maximum case temperature	+100°C
Storage temperature range	-55°C to +105°C
Relative humidity	5% to 95% RH
Temperature coefficient	±0.02% / °C max.

Output Specifications

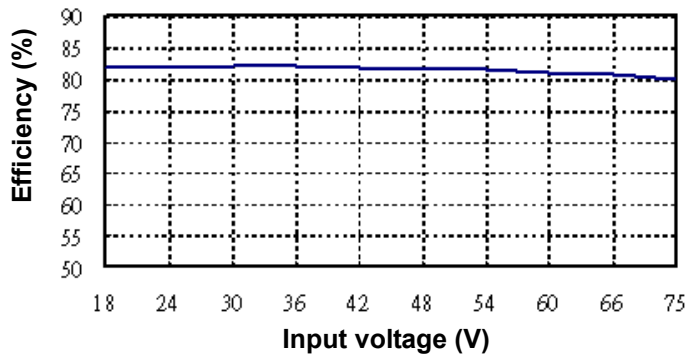
Output power			12 Watts max.
Voltage accuracy	Full load and nominal Vin		±1%
Minimum load			See table
Line regulation	LL to HL at full load		±0.5%
Load Regulation	25% load to full load	Single	±0.5%
	Balanced load	Dual	±0.5%
	Unbalanced load 25% to 100% full load		±5%
Ripple and Noise	20MHz bandwidth		70mVp-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			Continuous, automatic recovery
Transient response settling time	50% load step change		500Us 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		220pF typ.
Switching frequency		300kHz typ.
Reliability, calculated MTBF		1.96× 10^6 Hrs
Physical Specifications		
Case material		Nickel-coated copper
Base material		Non-conductive black plastic
Potting material		Silicon rubber (UL94V-0)
Dimensions		2.0 × 1.0 × 0.4 Inch (50.8 × 25.4 × 10.2 mm)
Weight		32.0g (1.13oz) typ.

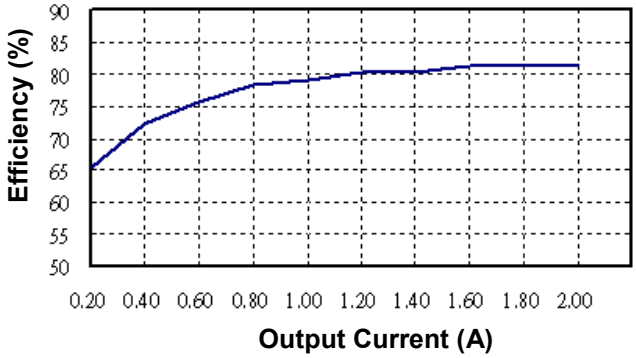
BUB12WSeries
Power Derating Curve(5)



BUB12-48S1W
Input voltage vs. Efficiency

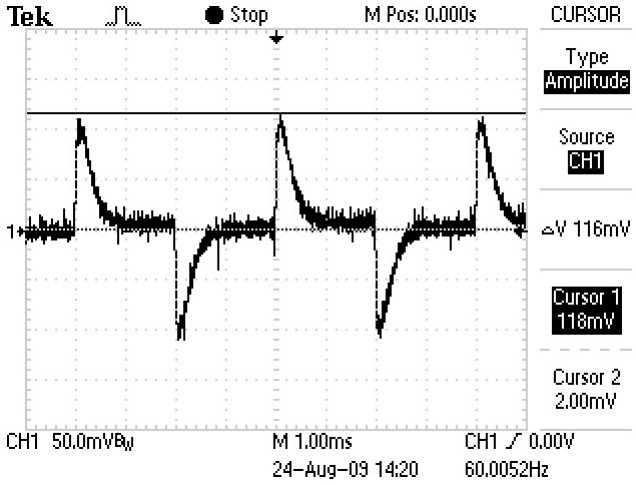


BUB12-48S1W
Output Current vs. Efficiency



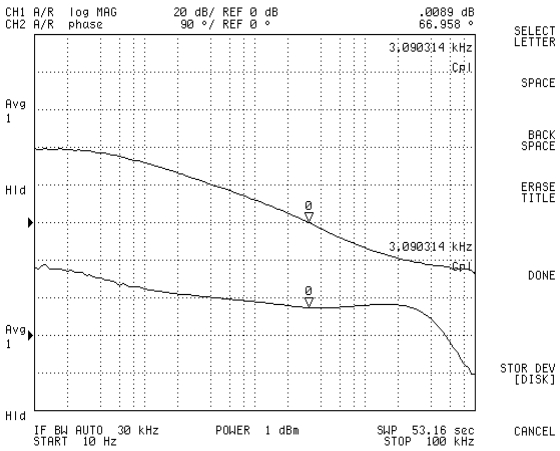
BUB12-48S1 W

Transient Response at 50%~100% Max Load



BUB12-48S1W

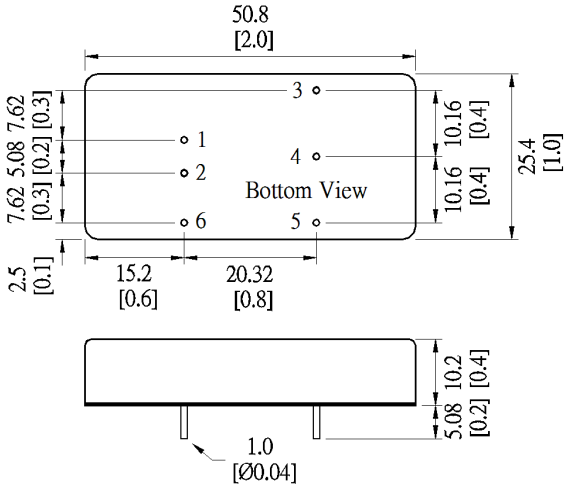
Loop Gain & Phase at Vi=48V,Full Load



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).
5. Based on BUB12-48S1W.

Mechanical Dimensions



Unit: mm [inch]
Tolerance:±0.5[0.02]

Pin Assignment		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	No pin	Common
5	-Vout	-Vout
6	Remote On/Off (optional)	Remote On/Off (optional)

Specifications subject to change without notice.