Isolated DC-DC Converters
BUA15L Series -- 15 Watt

Features

- Wide 2 : 1 Input Voltage Range(9~18V,18~36V,36~75V)
- Output Current up to 4A
- Fixed Switching Frequency
- Input / Output Isolation Voltage: 1.5K Vdc
- Extended Operating Temperature Range: -40°C to +71°C
- Output Short Circuit Protection:

  Continuous & Auto Recovery
- Over Voltage Protection: Clamp Mode
- Shielded Metal Case with Insulated Baseplate
- Lead Free Design, RoHS Compliant
- Industry Standard Pinout
- Customer Design Available

RoHS compliant

Description

The BUA15L Series are isolated 15W DC/DC converters. Designed with highly efficiency, allow the operating temperature range of these units to be -40°C to +71°C in a 50.8x25.4x10.2mm package with industry-standard pinout. Further features include wide 2 : 1 input voltage range, output 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		
BUA15-12S0L	9~18V Nominal:12Vdc	3.3	200	4000	7	1467	79	10000
BUA15-12S1L		5.1	120	3000	7	1623	81	600
BUA15-12S2L		12	0	1250	18	1543	85	1800
BUA15-12S3L		15	0	1000	21	1524	86	990
BUA15-12D2L		±12	0	±625	28	1543	85	470
BUA15-12D3L		±15	0	±500	29	1524	86	100
BUA15-24S0L	18~36V Nominal:24Vdc	3.3	200	4000	5	724	80	10000
BUA15-24S1L		5.1	95	3000	6	791	83	10000
BUA15-24S2L		12	0	1250	10	762	86	1700
BUA15-24S3L		15	0	1000	11	753	87	660
BUA15-24D2L		±12	0	±625	14	762	86	430
BUA15-24D3L		±15	0	±500	36	762	86	220
BUA15-48S0L	36~75V Nominal:48Vdc	3.3	200	4000	2	362	80	10000
BUA15-48S1L		5.1	120	3000	3	401	82	8440
BUA15-48S2L		12	0	1250	6.5	377	87	1000
BUA15-48S3L		15	0	1000	8	372	88	470
BUA15-48D2L		±12	0	±625	8	377	87	330
BUA15-48D3L		±15	0	±500	8	377	87	160

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Input Specifications			
Input Voltage	12V nominal input		9-18Vdc
	24V nominal input		18-36Vdc
	48V nominal input		36-75Vdc
Input filter			Pi Type
Input surge voltage (100ms max.)	12V input		25Vdc
	24V input		50Vdc
	48V input		100Vdc
Input reflected ripple current	Nominal Vin and full load		80mAp-p typ.
Start up time	Nominal Vin and constant resistive load		680ms typ.
Environmental Specifications			
Operating ambient temperature			-40°C to +71°C(without 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			15 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	±0.5%
	Unbalanced load 25% to 100% full load		±3%
Ripple and Noise	20MHz Bandwidth		75mVp-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		2200μs typ.
Transient response over shoot	di/dt=0.8A/μs		≤ ±5% of Vo

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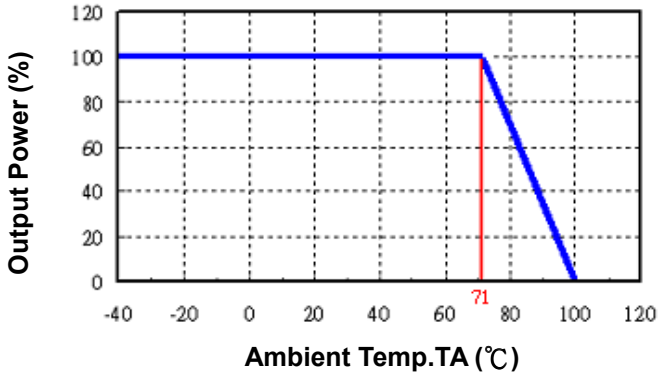
General Specifications		
Efficiency	Nominal input	See table
Isolation voltage	Input to output	1500Vdc
Isolation resistance		10^9 Ohms min.
Isolation capacitance		580pF typ.
Switching frequency		300kHz typ.
Reliability, calculated MTBF		2.24 × 10^6 Hrs
Physical Specifications		
Case material		Nickel-coated 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.

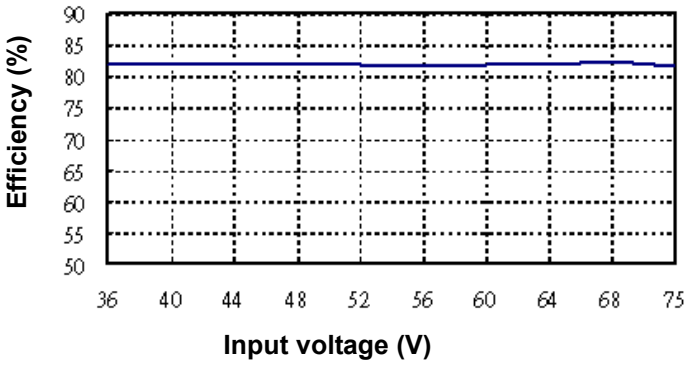
BUA15L Series

Power Derating Curve (4)



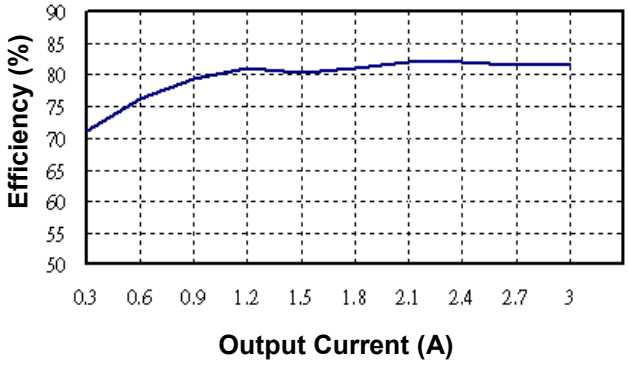
BUA15-48S1 L

Input voltage vs. Efficiency



BUA15-48S1L

Output Current vs. Efficiency



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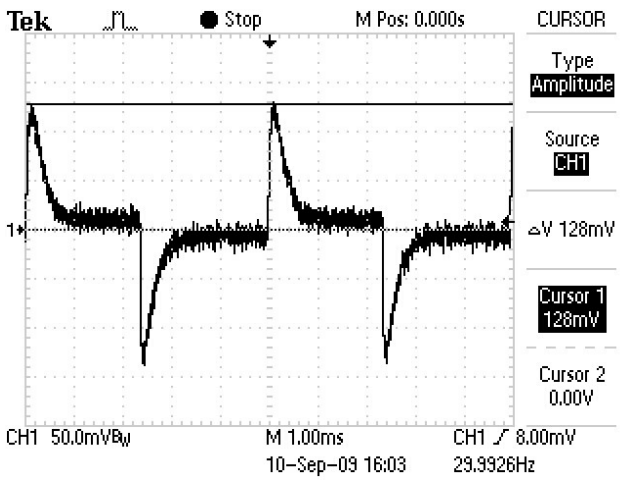
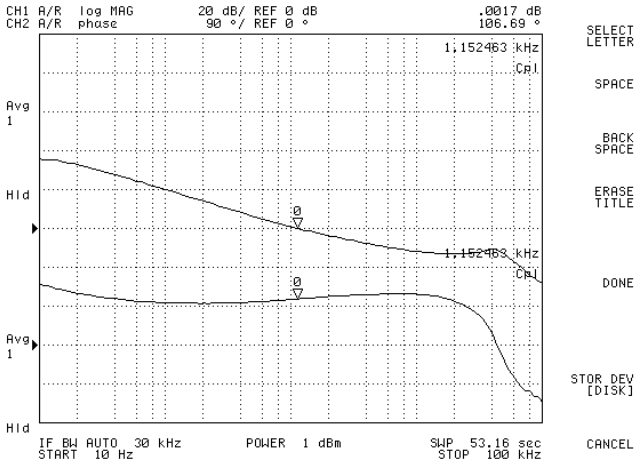
BUA15-48S1L

Transient Response at 50%~100% Max Load



BUA15-48S1L

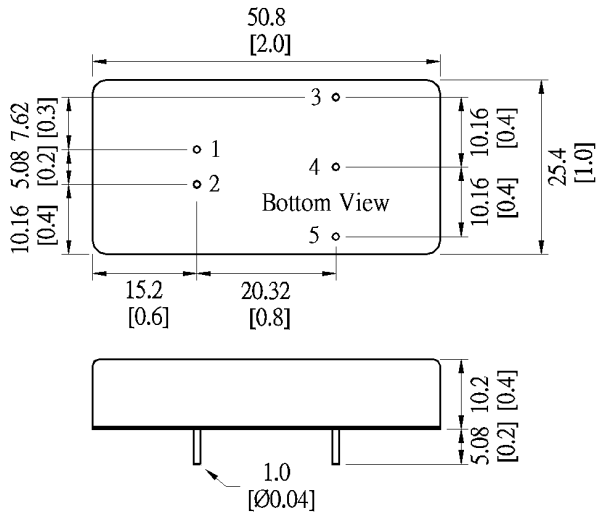
Loop Gain & Phase at Vi=48V,Full Load



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. Based on BUA15-48S1L.

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

Specifications subject to change without notice.