



Features

- Wide 4 : 1 Input Voltage Range(9~36V,18~75V)
- High Efficiency up to 90%
- Remote On/Off
- 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
- 6 pin DIP Package with Industry-Standard Footprint
- Standard 2"X1" Package
- Customer Design Available



Description

The BUC20W Series are isolated 20W DC/DC converters. Designed with highly efficiency, allow the operating temperature range of these units to be -40°C to +85°C (with derating) in a 6 pin DIP package with industry-standard footprint. Further features include wide 4 : 1 input voltage range, remote on/off control, trimmable output, short-circuit protection, over voltage protection and over temperature 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		
BUC20-24S0W	9~36V Nominal:24VDC	3.3	0	5500	70	945	84	33000
BUC20-24S1W		5.1	0	4000	86	1012	88	18000
BUC20-24S2W		12	150	1670	38	1006	87	3300
BUC20-24S3W		15	80	1330	49	990	88	2200
BUC20-24D1W		±5	0	±2000	91	992	88	8200
BUC20-24D2W		±12	25	±835	45	1006	87	1000
BUC20-24D3W		±15	0	±665	95	1002	87	900
BUC20-48S0W	18~75V Nominal:48VDC	3.3	0	5500	25	461	86	33000
BUC20-48S1W		5.1	0	4000	38	500	89	18000
BUC20-48S2W		12	90	1670	40	491	89	3300
BUC20-48S3W		15	55	1330	37	489	89	2200
BUC20-48D1W		±5	0	±2000	39	484	90	8200
BUC20-48D2W		±12	10	±835	42	491	89	1000
BUC20-48D3W		±15	0	±665	43	495	88	900


Input Specifications

Input Voltage	24V nominal input	9-36Vdc
	48V nominal input	18-75Vdc
Input filter		Pi Type
Input surge voltage (100ms max.)	24V nominal input	50Vdc
	48V nominal input	100Vdc
Input reflected ripple current	Nominal Vin and full load	100mA _{p-p} typ.
Start up time	Nominal Vin and constant resistive load	80ms typ.
Remote ON/OFF	Converter: ON	Open or $3.5V < V_r < 12V$
	Converter: OFF	Short ⁽⁴⁾ or $0V < V_r < 0.7V$
Sourcing current of remote control pin	Nominal Vin	< 0.2 mA
Idle input current (at Remote OFF state)	Nominal Vin	< 15 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	95% RH max.	
Temperature coefficient	±0.02% / °C max.	

Output Specifications

Output power	20.4 Watts max.	
Voltage accuracy	Full load and nominal Vin	±1%
Minimum load	See table	
Line regulation	LL to HL at full load	
	±0.5%	
	25% load to full load	Single ±0.5%
	Balanced load	Dual ±0.5%
Load Regulation	Unbalanced load 25% to 100% full load	
	±3%	
Ripple and Noise	20MHz bandwidth	
	85mV _{p-p} max.	
	3.3V _{out} models	3.9V
	5.1V _{out} models	6.2V
	12V _{out} models	15V
Over voltage protection (Zener Diode Clamp)	15V _{out} models	18V
	See table	
Capacitive load	See table	
Over load protection	% of full load at nominal input	110% min.
Short circuit protection	Hiccup, continuous (Auto Recovery)	
Transient response settling time	50% load step change	300μs typ.
		(1.8ms for 3.3V _{out})
Transient response over shoot	di/dt=0.8A/μs	≤ ±5% of V _o
		(≤ ±8% for 3.3V _{out})



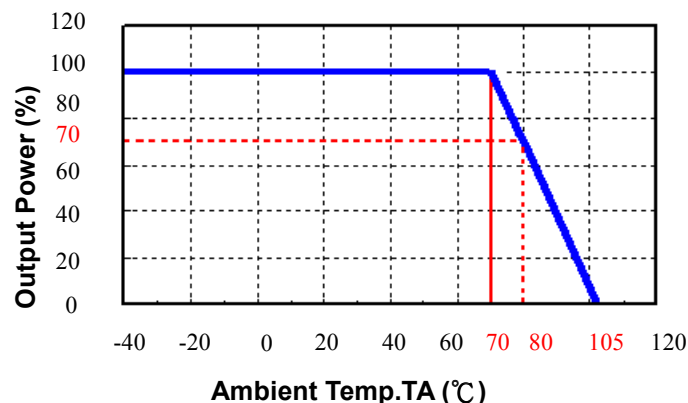
General Specifications

Efficiency	Nominal input	See table
Isolation voltage	Input to output	1500Vdc
Isolation resistance	500Vdc	10^9 Ohms min.
Isolation capacitance		1200pF typ.
Switching frequency		300kHz typ.
Reliability, calculated MTBF		1.06×10^6 Hrs

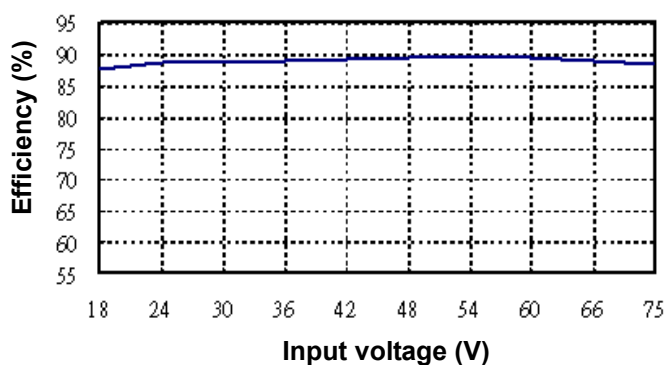
Physical Specifications

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.

BUC20W Series
Power Derating Curve(5)



BUC20W-48S1
Input voltage vs. Efficiency



BUC20W-48S1
Output Current vs. Efficiency

