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BUC30 Series

30W, Isolated DC-DC Converters



Features

- Wide 2:1 Input Voltage Range
- Input / Output Isolation: 1500VDC
- Remote On/Off
- Output Short Circuit Protection
- Over Temperature Protection
- Lead Free Design, RoHS Compliant
- Operating Temperature Range: -40°C to +85°C
- Optional Heat-sink
- Designed according to IEC/EN/UL 62368-1

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.

Part Number Structure

BUC30 - 24 S 1 HS

(1) (2) (3) (4) (5)

(1) Series

(2) Input Voltage Range

- **12** - 9 - 18V
- **24** - 18 - 36V
- **48** - 36 - 75V

(3) Output Type

- **S** - Single Output
- **D** - Dual Output

(4) Output Voltage

- **0** - 3.3V
- **1** - 5V
- **2** - 12V
- **3** - 15V
- **7** - 1.5V
- **9** - 2.5V

(5) Heat-sink (Optional)

- **Blank** - Without Heat-sink
- **HS** - With Heat-sink

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BUC30 Series

30W, Isolated DC-DC Converters

Pulse a YAGEO company

Models and Ratings

Model Number	Input Voltage Range (VDC)	Output Voltage (VDC)	Output Current (mA)		Input Current (mA) typ.		Efficiency (%) typ.	Capacitive Load (µF) max.
			Min. Load	Full Load	No Load	Full Load		
BUC30-12S7	9 - 18 12V nominal	1.5	0	8500	85	1476	78	56000
BUC30-12S9		2.5	0	8000	75	2137	82	47000
BUC30-12S0		3.3	0	7500	100	2611	83	47000
BUC30-12S1		5.1	0	6000	150	3148	85	33000
BUC30-12S2		12	50	2500	70	3012	87	4700
BUC30-12S3		15	150	2000	30	3012	87	3300
BUC30-12D1		±5	0	±3000	130	3012	87	10000 / 10000
BUC30-12D2		±12	±20	±1250	120	3012	87	2200 / 2200
BUC30-12D3		±15	±100	±1000	100	2976	88	1800 / 1800
BUC30-24S7	18 - 36 24V nominal	1.5	0	8500	35	699	80	56000
BUC30-24S9		2.5	0	8000	35	1029	85	47000
BUC30-24S0		3.3	0	7500	40	1242	87	47000
BUC30-24S1		5.1	0	6000	50	1500	89	33000
BUC30-24S2		12	50	2500	85	1453	90	4700
BUC30-24S3		15	20	2000	80	1453	90	3300
BUC30-24D1		±5	0	±3000	50	1453	90	10000 / 10000
BUC30-24D2		±12	±50	±1250	50	1453	90	2200 / 2200
BUC30-24D3		±15	0	±1000	50	1453	90	1800 / 1800
BUC30-48S7	36 - 75 24V nominal	1.5	0	8500	20	345	81	56000
BUC30-48S9		2.5	0	8000	15	508	86	47000
BUC30-48S0		3.3	0	7500	20	614	88	47000
BUC30-48S1		5.1	0	6000	25	741	90	33000
BUC30-48S2		12	150	2500	25	727	90	4700
BUC30-48S3		15	20	2000	25	718	91	3300
BUC30-48D1		±5	0	±3000	25	727	90	10000 / 10000
BUC30-48D2		±12	0	±1250	25	718	91	2200 / 2200
BUC30-48D3		±15	0	±1000	25	718	91	1800 / 1800

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Input Specifications		
Input voltage		See ‘Models and Ratings’ table
Input surge voltage	100ms max.	
	12Vin models	25 VDC
	24Vin models	50 VDC
	48Vin models	100 VDC
Input filter		Pi type
Input reflected ripple current	Nominal Vin and full load	120 mAp-p typ.
Remote ON/OFF	Converter On	Open circuit or 3.5 to 12 VDC
	Converter Off	Short circuit or 0 to 0.7 VDC
		Refer to ‘Remote’ and ‘-Vin’ pin
Off idle input current	Nominal Vin	15 mA max.
Remote pin input current	Nominal Vin	0.2 mA max.
Output Specifications		
Output power		30 Watts max.
Voltage accuracy	Nominal Vin and full load	±1% max.
Output voltage adjustability (Trim)	Single output models only	±10% max.
Minimum load		See ‘Models and Ratings’ table
Line regulation		±0.5% max.
Load regulation	25% to 100% load	
	Single output models	±0.8% max.
	Dual output models	±1% max.
Cross regulation	25% / 100% asym. load	±3% max.
Ripple and noise	20MHz bandwidth (Measured with a 2.2µF/50V MLCC)	
	12Vout and 15Vout modules	120 mVp-p max.
	Other modules	85 mVp-p max.
Capacitive load		See ‘Models and Ratings’ table
Short circuit protection		Continuous, Automatic recovery
Overload protection	Nominal Vin	110% min. of full load
Over voltage protection (Zener Diode Clamp)	1.5Vout modules	3V
	2.5Vout modules	3.6V
	3.3Vout modules	3.9V
	5.1Vout modules	6.2V
	12Vout modules	15V
	15Vout modules	18V

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Transient recovery time	50% load step change	400µs max.
Transient response deviation	di/dt = 0.8 A/µs	±5% max.
Temperature coefficient	Full load	±0.02%/°C typ.
General Specifications		
Efficiency	Nominal Vin and full load	See ‘Models and Ratings’ table
Start-up time	Nominal Vin and constant resistive load	80ms typ.
Switching frequency		300 kHz typ.
Isolation voltage	Input to output, 60 s	1500 VDC min.
	Input/output to case, 60 s	1500 VDC min.
Isolation resistance	500 VDC	1000 MΩ min.
Isolation capacitance		1200 pF typ.
Reliability, calculated MTBF	MIL-HDBK-217F@25°C, Ground Benign	1.06×10^6 h
Operating ambient temperature	With derating	-40°C to +85°C
Maximum case temperature		+105°C max.
Over Temperature Protection	Case temperature	+115°C max.
Storage temperature range		-55°C to +125°C
Relative humidity		95% RH max.
Cooling		Natural convection
Physical Specifications		
Case material		Nickel-coated copper
Base material		Nonconductive black plastic (UL 94 V-0)
Pin material		Copper alloy
Pin Foundation Plating		Nickel
Pin Surface Plating		Tin
Potting material		Silicone (UL 94 V-0)
Dimensions		2.0 × 1.0 × 0.4 inch
		50.8 × 25.4 × 10.2 mm
Weight		32 g typ.

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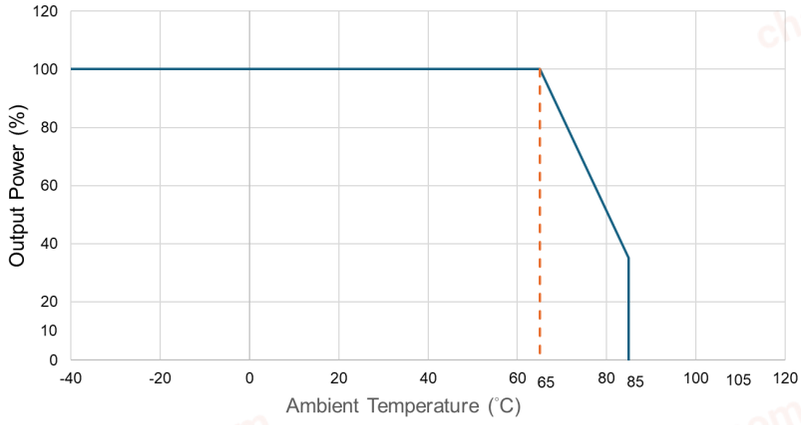
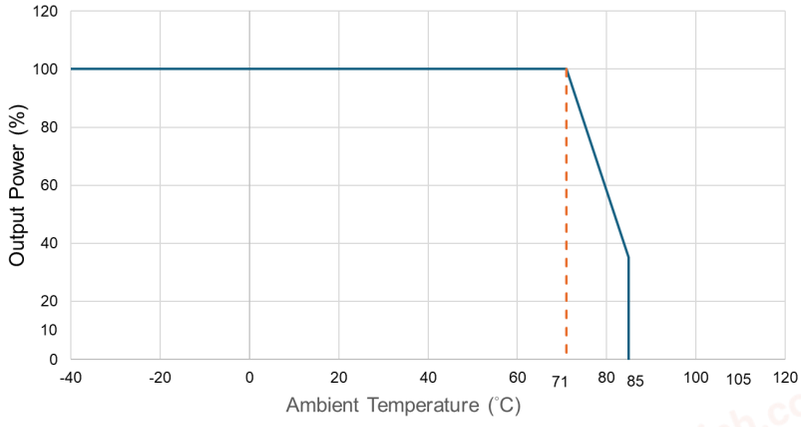
Characteristic Curves

Power Derating Curve

Without Heat-sink



With Heatsink



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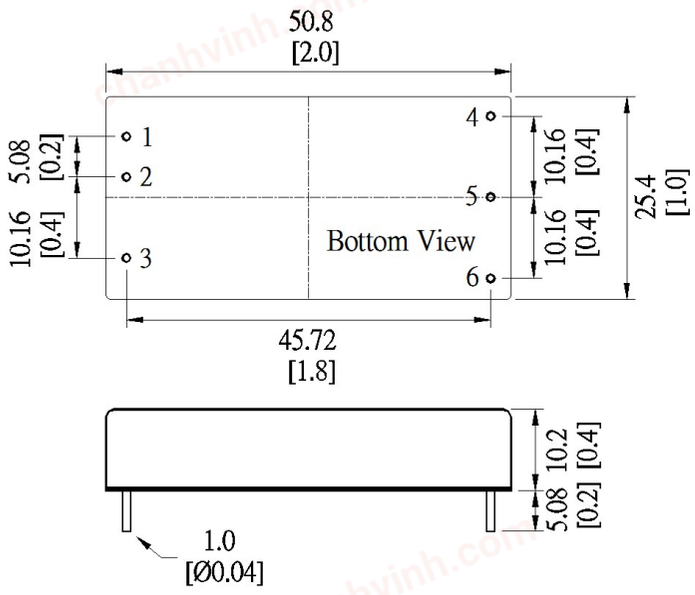
Mechanical

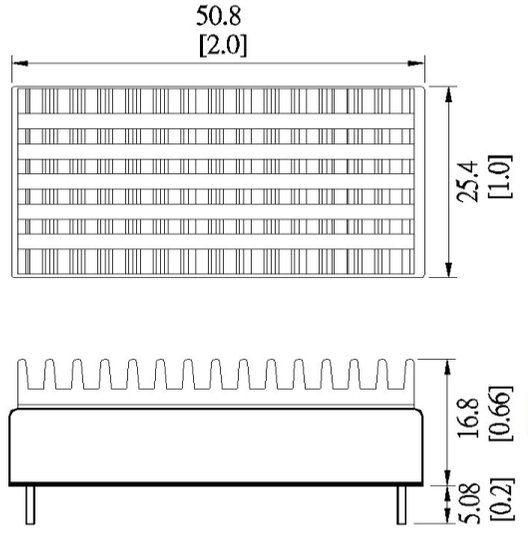
Standard model



Pinout		
PIN	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	Remote on/off	Remote on/off
4	+Vout	+Vout
5	-Vout	Common
6	Trim	-Vout

Dimensions in mm [inch]
Tolerances: ±0.5 [±0.02]
Pin dimension tolerances: ±0.10 (±0.004)

Optional model with heatsink



Heatsink
Material: Anodized aluminum (black)
Weight: 10g (0.35oz)

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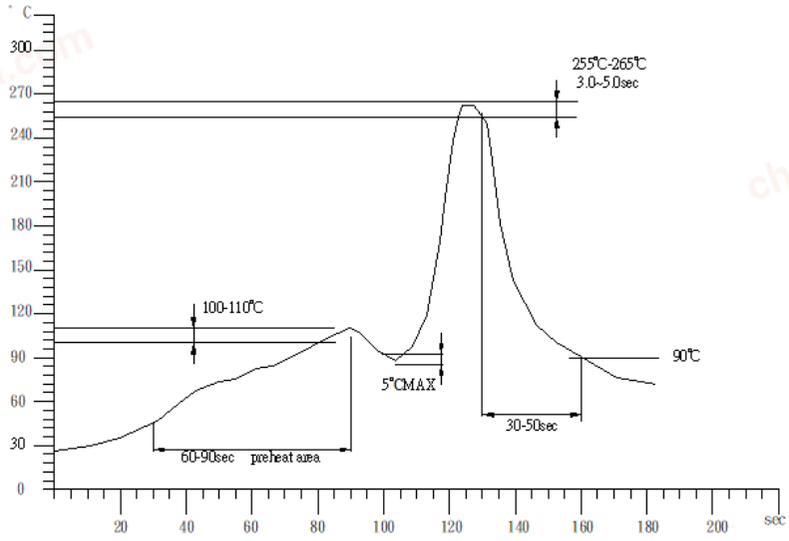
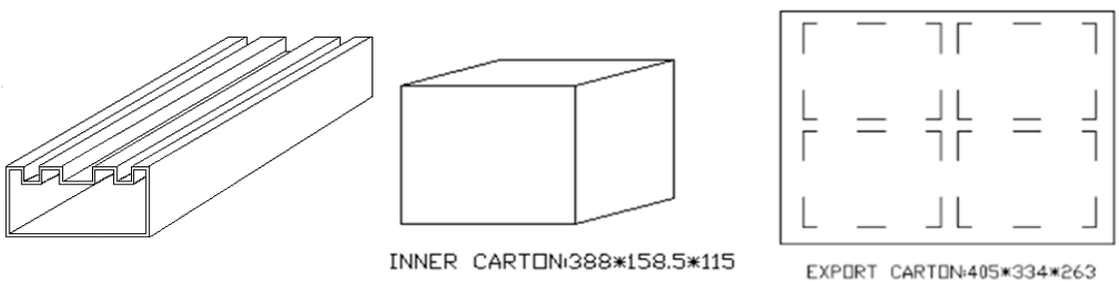
Wave Soldering Temperature Curve



Carton Package

Standard model



TUBE = 12PCS
INNER CARTON = 10 TUBE = 10*12 = 120PCS
EXPORT CARTON = 4 INNER CARTON = 4*120 = 480PCS

For More Information:

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