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BUB20W Series

20W, Isolated DC-DC Converters

Pulse a YAGEO company



Features

- Wide 4:1 Input Voltage Range
- Input / Output Isolation: 1500VDC
- Remote On/Off
- Output Short Circuit Protection
- Over Voltage Protection: Clamp Mode
- Operating Temperature: -40°C to +105°C
- Optional Heat-sink
- Lead Free Design, RoHS Compliant
- 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.

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		
BUB20-24S0W	9 - 36 24V nominal	3.3	0	5500	42	937	85	19760
BUB20-24S1W		5	0	4000	67	997	88	16000
BUB20-24S2W		12	53	1670	23	1005	87	3360
BUB20-24S3W		15	18	1330	23	996	87	2080
BUB20-24D1W		±5	0	±2000	66	998	88	9760 / 9760
BUB20-24D2W		±12	±33	±835	25	990	88	1760 / 1760
BUB20-24D3W		±15	±33	±665	29	996	88	880 / 880
BUB20-48S0W	18 - 75 48V nominal	3.3	0	5500	17	469	85	19760
BUB20-48S1W		5	0	4000	31	498	88	16000
BUB20-48S2W		12	53	1670	8	491	89	3360
BUB20-48S3W		15	18	1330	8	486	89	2080
BUB20-48D1W		±5	0	±2000	28	489	89	9760 / 9760
BUB20-48D2W		±12	±28	±835	9	487	90	1760 / 1760
BUB20-48D3W		±15	±33	±665	11	486	89	880 / 880

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Input Specifications		
Input voltage		See ‘Models and Ratings’ table
Input surge voltage	100ms max.	
	24Vin models	50 VDC
	48Vin models	100 VDC
Input filter		Pi type
Input reflected ripple current	Nominal Vin and full load	60 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	12 mA max.
Remote pin input current	Nominal Vin	0.2 mA max.
Output Specifications		
Output power		20 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		±1% max.
Load regulation	25% to 100% load	
	Single output models	±1% max.
	Dual output models	±0.5% max.
Cross regulation	25% / 100% asym. load	±5% max.
Ripple and noise	20MHz bandwidth	80 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)	3.3V output	3.9V
	5V output	6.2V
	12V output	15V
	15V output	18V
Transient recovery time	50% load step change	
	3.3Vout models	1400µs max.
	Other models	700µs max.
Transient response deviation	di/dt = 0.8 A/µs	
	3.3Vout models	±6% max.
	Other models	±5% max.

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Temperature coefficient	Full load	±0.02%/°C max.
General Specifications		
Efficiency	Nominal Vin and full load	See ‘Models and Ratings’ table
Start-up time	Nominal Vin and constant resistive load	76ms typ.
Switching frequency		330 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		1050 pF typ.
Reliability, calculated MTBF	MIL-HDBK-217F@25°C, Ground Benign	1.35×10^6 h
Operating ambient temperature	With derating	-40°C to +105°C
Maximum case temperature		+105°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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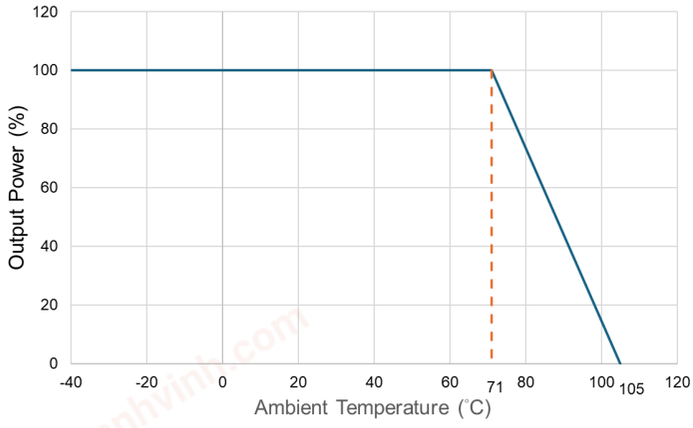
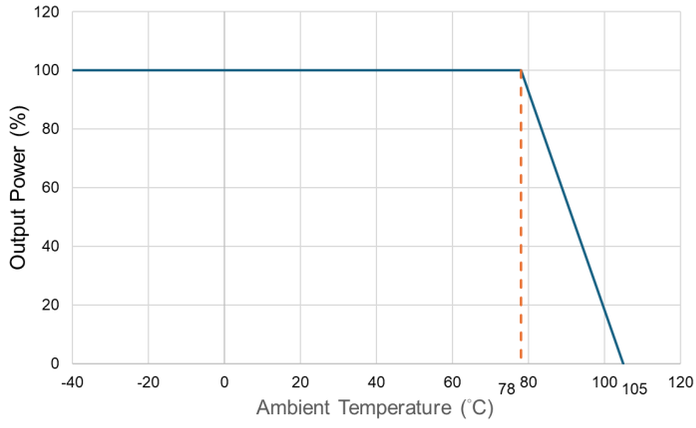
Characteristic Curves

Power Derating Curve

Without Heat-sink

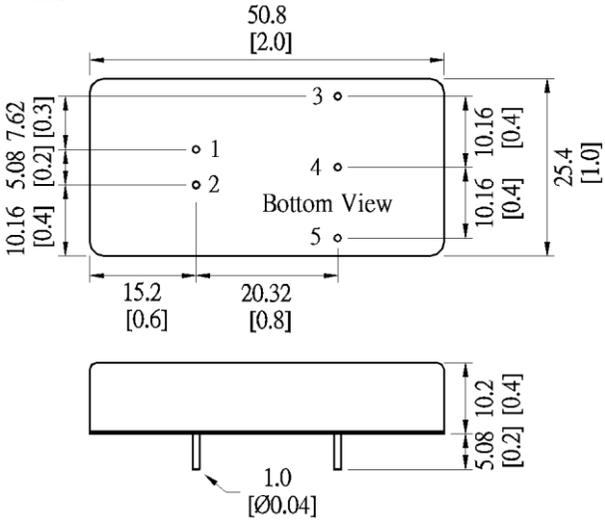


With Heatsink



Mechanical

Standard model



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

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

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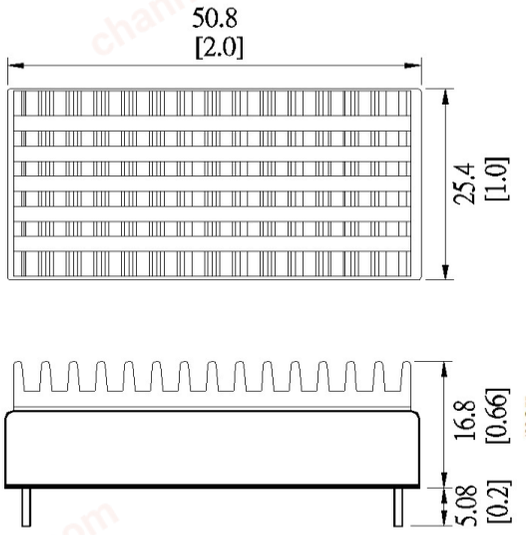
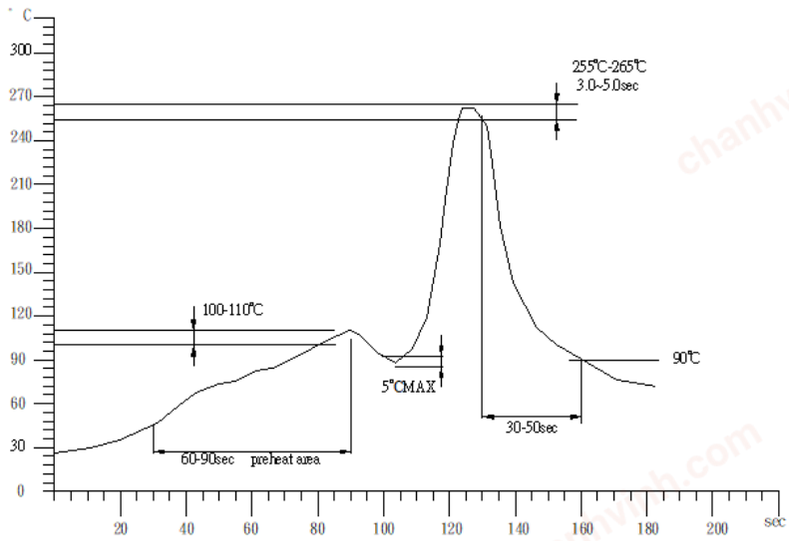
Optional model with heatsink



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

Wave Soldering Temperature Curve



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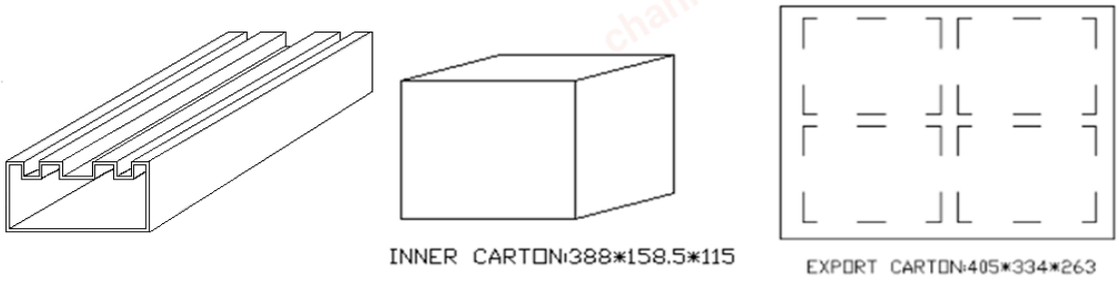
Carton Package

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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