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BRA30-24S1W

30W, Isolated DC-DC Converters

Pulse
a YAGEO company



Features

- Wide 4:1 Input Voltage Range
- Standard 1”X1” Package
- High Efficiency
- Remote On/Off
- Input / Output Isolation: 1500VDC
- Operating Temperature Range: -40°C to +85°C
- Output Short Circuit Protection
- Over Voltage Protection: Clamp Mode
- 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)		Efficiency typ. (%)	Capacitive Load max. (μF)
			Min. Load	Full Load	No Load	Full Load		
BRA30-24S1W	9 - 36 24V nominal	5	0	6000	10	1453	88	10200

Input Specifications

Input voltage range		See Models and Ratings table
Input filter		Pi Type
Input surge voltage (100ms max.)		50 VDC max.
Remote ON/OFF	Converter On Converter Off	Open circuit or 3.5 to 12 VDC 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		30 Watts max.
Voltage accuracy	Full load and nominal Vin	±1.5% max.
Output voltage adjustability (Trim)		±10% max.

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Minimum load		See Models and Ratings table
Line regulation		±0.5% max.
Load regulation	25% load to full load	±0.5% max.
Ripple and noise	20MHz bandwidth	100 mVp-p max.
Over voltage protection	Zener diode clamping	6.2V
Capacitive load		See Models and Ratings table
Overload protection	Nominal Vin	160% typ. of full load
Short circuit protection		Continuous, automatic recovery
Transient recovery time	50% load step change	400 µs max.
Transient response deviation	di/dt = 0.8 A/µs	±5% max.
Temperature coefficient		±0.03% / °C max.
General Specifications		
Efficiency	Nominal Vin and full load	See Models and Ratings table
Switching frequency	PWM	300 kHz typ.
Start-up time	Nominal Vin and constant resistive load	80 ms typ.
Isolation voltage	Input to output	1500 VDC min.
	Input/output to case	1500 VDC min.
Isolation resistance	500 VDC	1000 MΩ min.
Isolation capacitance		1000 pF typ.
Reliability, calculated MTBF	MIL-HDBK-217F, Ground Benign	640 × 10^3 h
Operating ambient temperature	With derating	-40°C to +85°C
Maximum case temperature		+110°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		FR4 PCB
Pin material		Copper alloy
Pin Foundation Plating		Nickel
Pin Surface Plating		Tin
Potting material		Silicone (UL 94 V-0 rated)
Dimensions		1.0 × 1.0 × 0.42 Inch
		25.8 × 25.8 × 10.6 mm
Weight		19.2 g typ.

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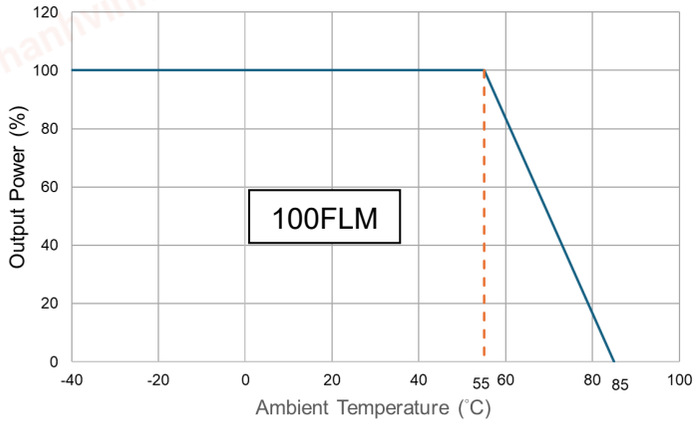
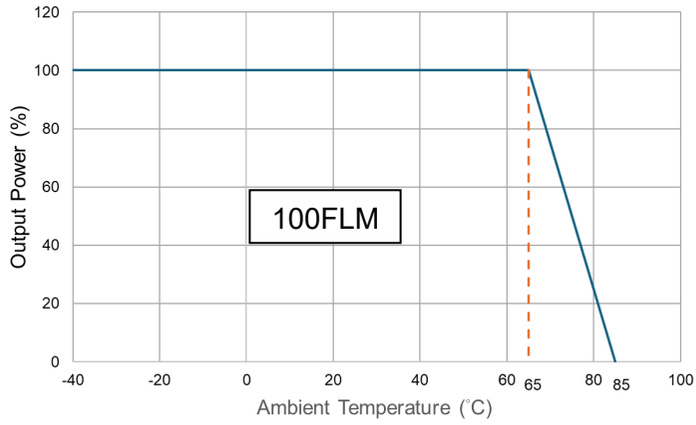
Characteristic Curves

Power Derating Curve

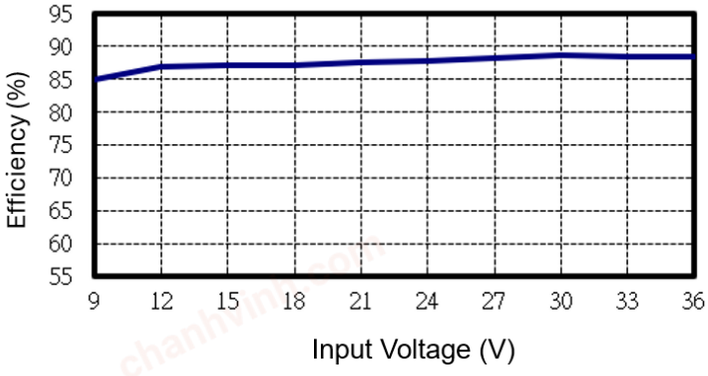
Without Heat-sink



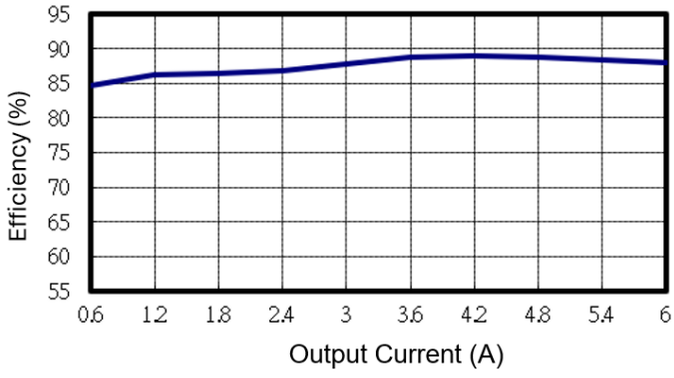
With Heatsink



Input voltage vs Efficiency



Output Current vs Efficiency



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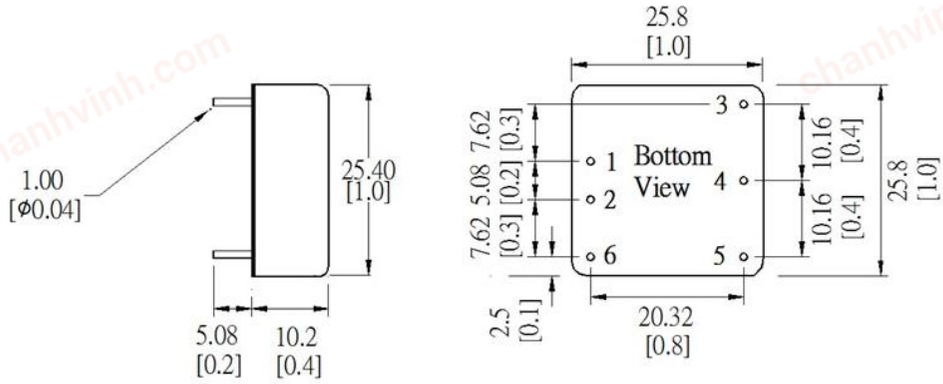
Mechanical

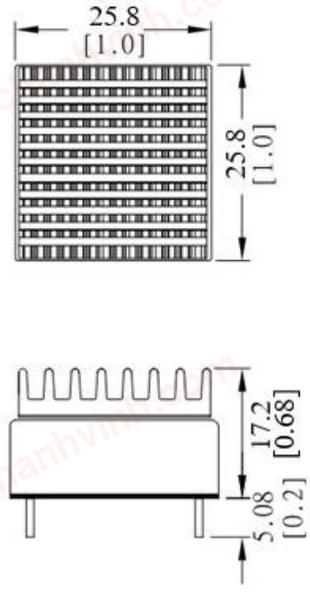
Standard model



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

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: 4.2g (0.15oz)

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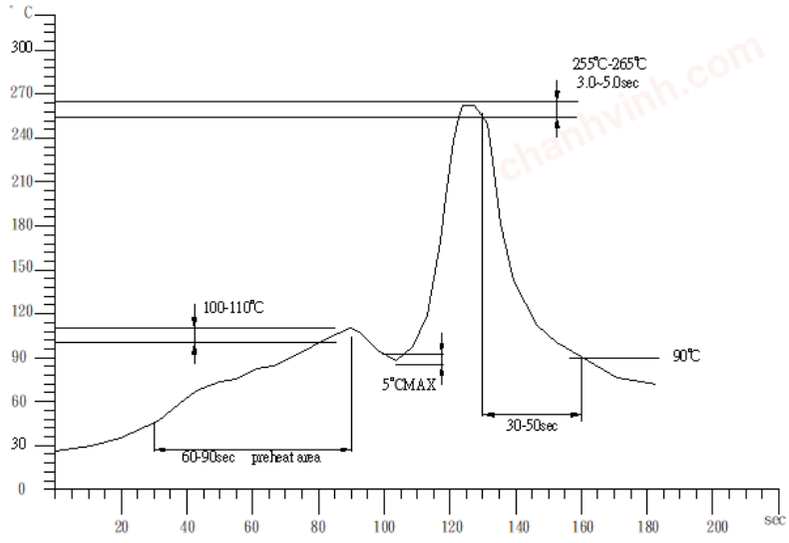
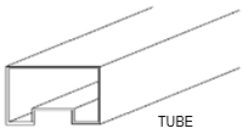
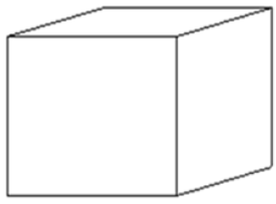
Wave Soldering Temperature Curve



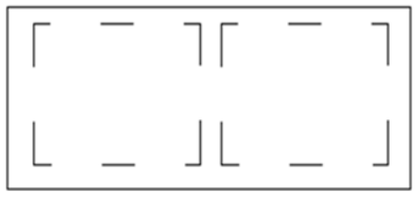
Carton Package

Standard model





INNER CARTON:567*135*125



EXPORT CARTON:598*287*150

TUBE=19PCS
INNER CARTON=20 TUBE=20*19=380PCS
EXPORT CARTON=2 INNER CARTON=2*380=760PCS

For More Information:

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