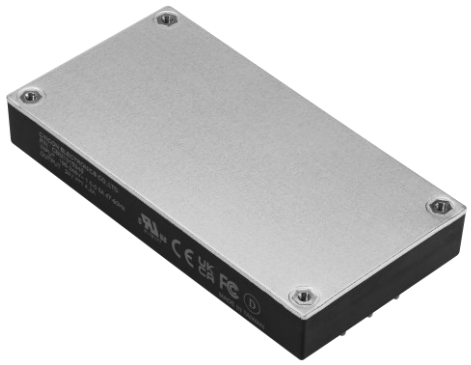
CBM101S SERIES
100 WATT AC-DC BRICK POWER SUPPLY WITH PFC

Features

- Universal Input Range 90~264V_{ac}
- High Efficiency up to 94.5%
- Class I
- No Load Input Power Consumption<0.5W
- Peak Power Operation up to 120Watt for 5s
- Approval IEC/EN/UL 62368-1
- Approval EN 55032 and CISPR/FCC Class B
- Operating Altitude 5000m
- Continuous Short Circuit Protection
- Over Voltage Protection
- Over Temperature Protection
- Low Inrush Current < 8.5A
- 17mm Ultra Low Profile Package
- Full Load without Heat Sink
- No Fan Required
- Built-in EMI Filters Bulk Capacitor and Output Capacitors
- Wide Operating Temperature Range



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MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT CURRENT	RIPPLE & NOISE NOTE1	VOLTAGE ACCURACY NOTE2	LINE REGULATION NOTE3	LOAD REGULATION NOTE4	%EFF. (Typ.) NOTE5
CBM101S120	12 V	8.4 A	120 mV	±1%	±0.5%	±0.5%	93.5%
CBM101S240	24 V	4.2 A	150 mV	±1%	±0.5%	±0.5%	94.5%
CBM101S280	28 V	3.6 A	240 mV	±1%	±0.5%	±0.5%	94.5%
CBM101S360	36 V	2.8 A	280 mV	±1%	±0.5%	±0.5%	94.5%
CBM101S480	48 V	2.1 A	300 mV	±1%	±0.5%	±0.5%	94.5%

Note:

1. Add a 0.1uF ceramic capacitor and a 10uF E.L. capacitor to output for ripple & noise measuring @20MHz BW.
2. Voltage accuracy is set at full load.
3. Line regulation is measured from 100Vac to 240Vac with full load.
4. Load regulation is measured from 10% to 100% full load.
5. Typical efficiency at 230 VAC and full load at 25℃.
6. Power Dissipation (Pd): Pd =Pi-Po=Po(1-η)/η.

PART NUMBER

Series	Number of Outputs	Nominal Output Voltage
CBM101	O	XXX
CBM101	S : Single	120 : 12VDC 240 : 24VDC 280 : 28VDC 360 : 36VDC 480 : 48VDC

Part Number Example:

CBM101S120: Brick Power, 100W, Single 12Vdc Output

TECHNICAL SPECIFICATIONS

(All specifications are typical at nominal input, full load at 25℃ unless otherwise noted.)

ABSOLUTE MAXIMUM RATINGS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Input Voltage	Safety approvals only to the AC input	All	90 120		264 370	V_{ac} V_{dc}
Operating Temperature	See Derating Curve	All	-40		85	℃
Operating Case Temperature	At the center of base plate (T_c = Case temperature)	All	-40		90	℃
Storage Temperature		All	-40		100	℃
Input/Output Isolation Voltage	1 minute	All			4000	V_{ac}
Operating Altitude		All			5000	m

INPUT CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Operating Voltage Range		All	100		240	V_{ac}
Input Frequency Range		All	47		63	Hz
Maximum Input Current	100% Load, V_{in}=100V_{ac}	All			1.5	A
Inrush Current	V_{in}=240V_{ac}, Cold start at 25℃	All		8.5		A
Leakage Current (Earth)		All			250	uA
Leakage Current (Touch)		All			100	uA
Under Voltage Protection		All	55	65	75	V_{ac}
Power Factor	230V_{ac}/50Hz at full load	All	0.91			

OUTPUT CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Output Voltage Set Point	V_{in}=90V_{ac}~264V_{ac}, full load Ambient temperature=25℃	CBM101S120 CBM101S240 CBM101S280 CBM101S360 CBM101S480	11.88 23.76 27.72 35.64 47.52	12 24 28 36 48	12.12 24.24 28.28 36.36 48.48	V_{dc}
Operating Output Current Range	V_{in}=90V_{ac}~264V_{ac}, See Derating Curve	CBM101S120 CBM101S240 CBM101S280 CBM101S360 CBM101S480			8.4 4.2 3.6 2.8 2.1	A
Holdup Time	V_{in}=115V_{ac} at 25℃, full load	CBM101S120 CBM101S240 CBM101S280 CBM101S360 CBM101S480	30 30 20 30 30	40 40 30 40 40		ms
Startup Delay Time	V_{in} =90V_{ac}~264V_{ac}	All		1		S
Temperature Coefficient	T_c=-40℃ to 50℃	All			±0.02	%/℃
Load Regulation	10% Load to full load	All			±0.5	%
Line Regulation	Vin=High line to low line	All			±0.5	%
Over Voltage Protection	Latch off (AC recycle to restart)	CBM101S120 CBM101S240 CBM101S280 CBM101S360 CBM101S480			16 35 35 50 63	V_{dc}

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Over Current Protection	Hiccup mode, auto recovery	All	120	135	150	%
Short Circuit Protection	Auto recovery	All				
Peak Power	1. Vin=115Vac and 230V_{ac} 2. Ambient temperature=25℃ 3. Peak power should be less than 5seconds, with a maximum 10% duty cycle, peak power function by 120% load 5S and 75% load 45S	All		120		%
Over Temperature Protection	Auto recovery	All				
Output Ripple and Noise	1. Add a 0.1uF ceramic capacitor and a 10uF aluminum electrolytic capacitor to output 2. Oscilloscope is 20MHz band width 3. Ambient temperature=25℃	CBM101S120 CBM101S240 CBM101S280 CBM101S360 CBM101S480			120 150 240 280 300	mV
Load Capacitance	1. Input voltage is 115V_{ac} and 230V_{ac} 2. Output is full load 3. Ambient Temperature=25℃	CBM101S120 CBM101S240 CBM101S280 CBM101S360 CBM101S480			8400 4200 3600 2800 2100	uF

EFFICIENCY

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Efficiency	1. Input Voltage is 230V_{ac} 2. Output is full load 3. Ambient Temperature=25℃	CBM101S120 CBM101S240 CBM101S280 CBM101S360 CBM101S480		93.5 94.5 94.5 94.5 94.5		%

ISOLATION CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Input to Output	1 Minute (without dielectric breakdown)	All			4000	V_{ac}
Input to Earth (Ground)	1 Minute (without dielectric breakdown)	All			1800	V_{ac}
Output to Earth (Ground)	1 Minute (without dielectric breakdown)	All			1800	V_{ac}
Isolation Resistance	Input to output	All	100			MΩ

FEATURE CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Switching Frequency	Output is full load	All		110		kHz

GENERAL SPECIFICATIONS

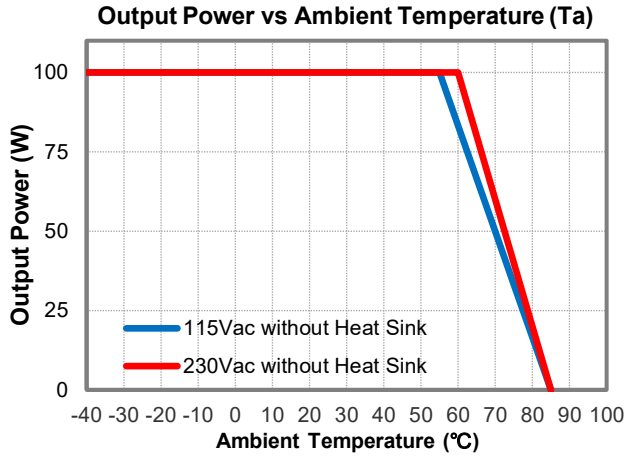
PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
MTBF	I_o=100%; T_a=25℃ per MIL-HDBK-217F I_o=100%, T_a=25℃, Telcordia SR332	All		600 2000		k hours
Life Time	Without heat sink@75% load, Ta=50℃	All		85		k hours
Humidity	Non-condensing	All			93	% RH
Shock	Meets MIL-STD-810F Table 516.5,Table 516.5-I 10ms, each axis 3 times(±X、±Y、±Z axis)	All		75		g
Vibration	Meets MIL-STD-810F Table 514.5C-VIII,15~2000Hz, X、Y、Z axis, 1 hr (each axis), total 3 hrs.	All		4		g
Weight		All		240		grams
Dimensions		All	4.60x2.40x0.67 Inches (116.8x61.0x17.0 mm)			

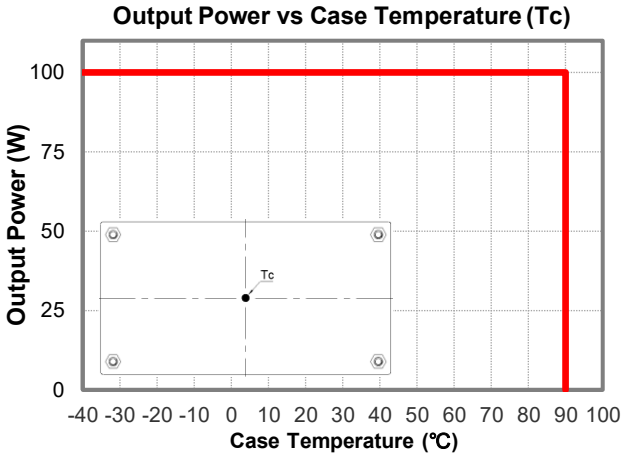
GENERAL SPECIFICATIONS

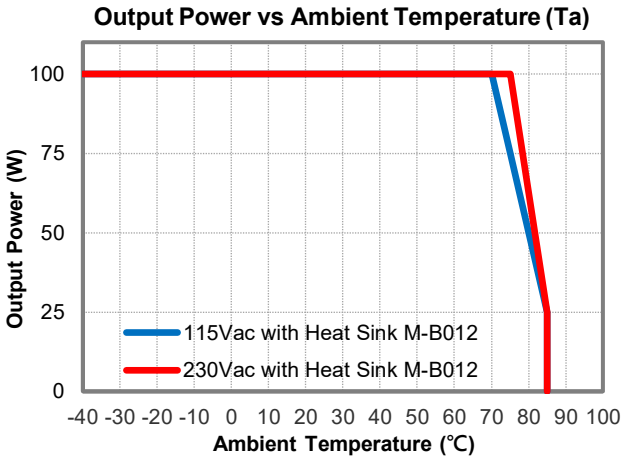
Safety	Class I, IEC/EN/UL 62368-1	Ed. 3.0
EMC Emission	EN 55032: 2015+A11: 2020, EN 61000-6-3 2007+A1: 2011+AC: 2012, Class B EN 61000-6-4:2019, 47 CFR FCC Part 15 Subpart B, EN 61204-3:2018, EN 61000-3-2: 2019, EN 61000-3-3: 2013+A1: 2019	Class B
Conducted Disturbance	EN 55032: 2015+A11: 2020, EN 61000-6-3 2007+A1: 2011+AC: 2012, Class B EN 61000-6-4:2019, 47 CFR FCC Part 15 Subpart B, EN 61204-3:2018	Class B
Radiated Disturbance	EN 55032: 2015+A11: 2020, EN 61000-6-3 2007+A1: 2011+AC: 2012, Class B EN 61000-6-4:2019, 47 CFR FCC Part 15 Subpart B, EN 61204-3:2018	Class B
Harmonic Current Emissions	EN 61000-3-2:2019	Class A
Voltage Fluctuations & Flicker	EN 61000-3-3:2013+A1:2019	Criterion A
EMC Immunity	EN 55035: 2017+A11: 2020, EN 61204-3: 2018, EN 61000-6-1: 2019, EN 61000-6-2: 2019 EN 61000-6-4-2, 3, 4, 5, 6, 8, 11	
Electrostatic Discharge (ESD)	IEC 61000-4-2:2008, Air Discharge: ±8kV, Contact Discharge: ±4kV	Criterion A
Radio-Frequency, Continuous Radiated Disturbance	IEC 61000-4-3:2020	Criterion A
Electrical Fast Transient (EFT)	IEC 61000-4-4:2012, ±1kV, ±2kV	Criterion A
Surge	IEC 61000-4-5:2014+A1:2017, L-N: ±0.5kV, ±1kV, L-E(ground): ±0.5kV, ±1kv, ±2kV	Criterion A
Conducted Disturbances, Induced by RF Fields	IEC 61000-4-6:2013+COR1:2015	Criterion A
Power Frequency Magnetic Field	IEC 61000-4-8:2009	Criterion A
Voltage Dips	IEC 61000-4-11:2020, Dip: 30% Reduction, Dip >95% Reduction	Criterion A
Voltage Interruptions	IEC 61000-4-11:2020, >95% Reduction	Criterion B
Application Note Link	CBM101S Series App Notes	

CHARACTERISTIC CURVE

Power Derating Curve

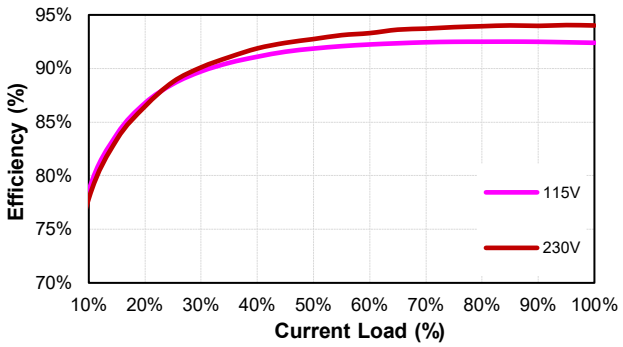




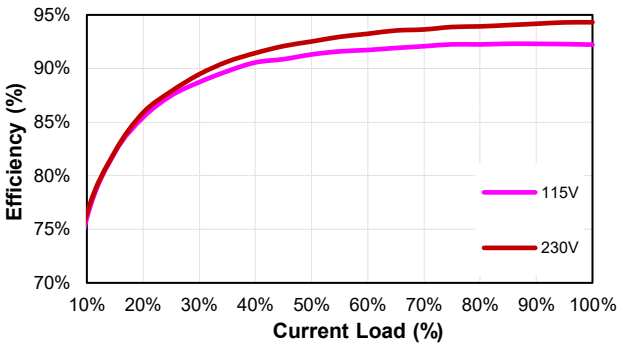


Performance Data

CBM101S120 (Eff Vs Io)



CBM101S240 (Eff Vs Io)



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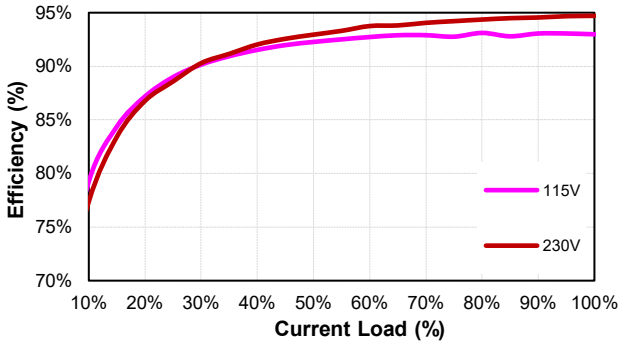
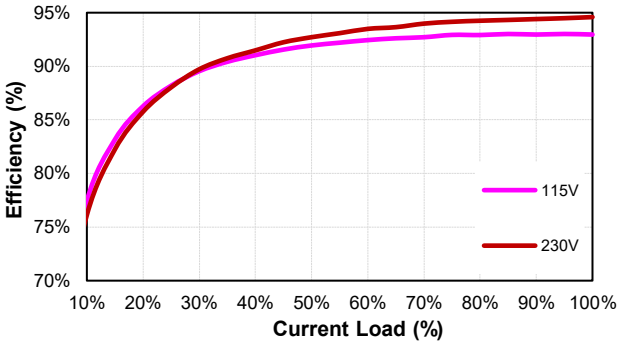
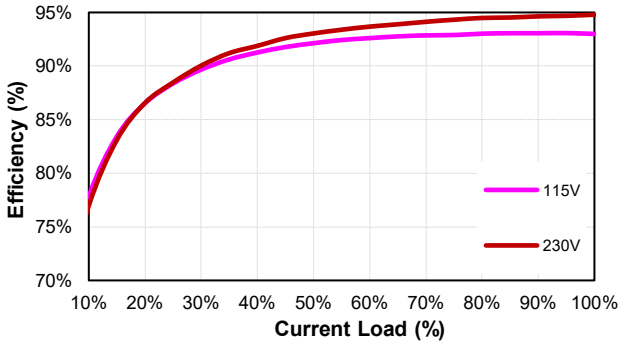


CBM101S360 (Eff Vs Io)

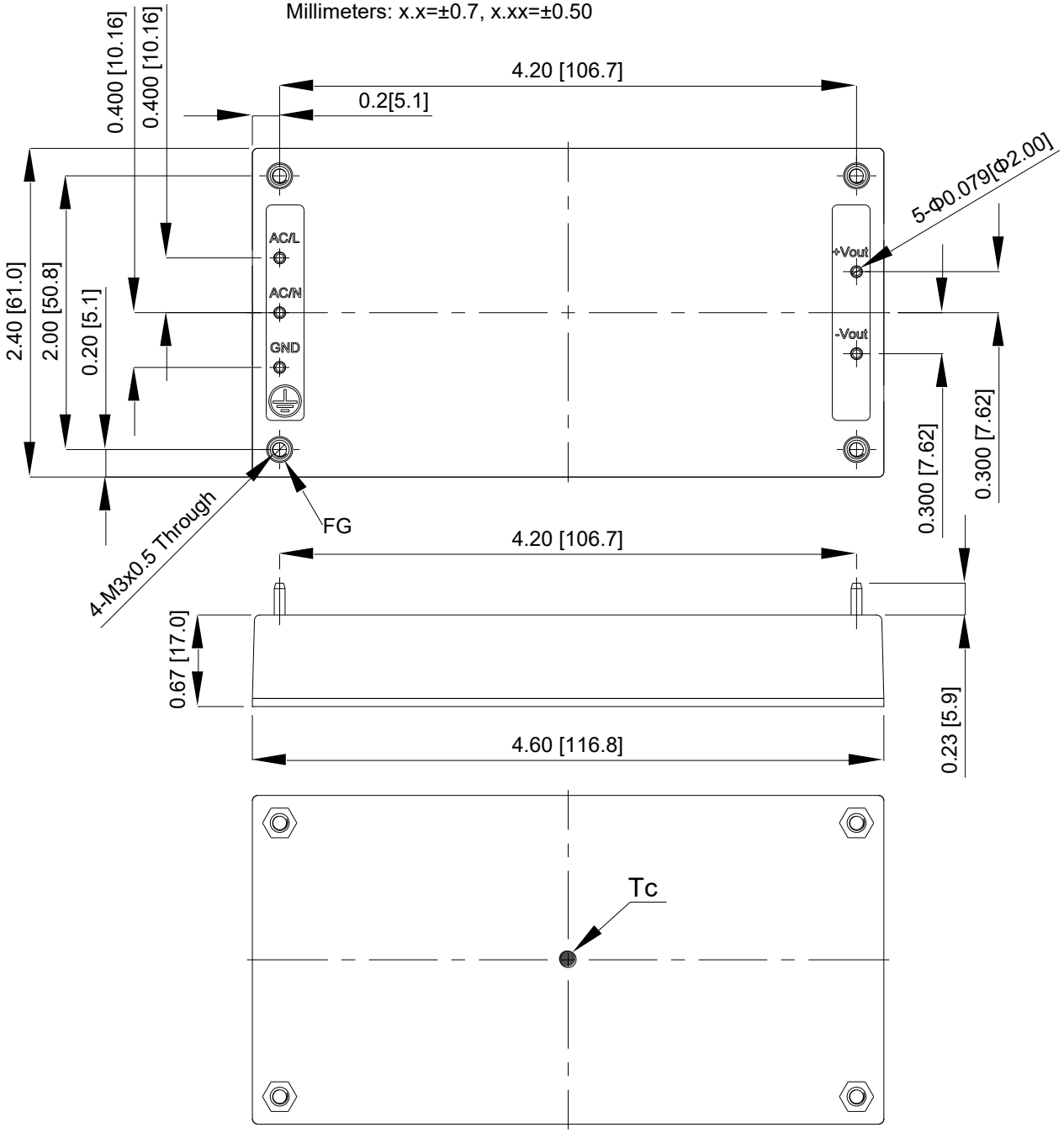


CBM101S480 (Eff Vs Io)



MECHANICAL SPECIFICATION

All Dimensions in Inches[mm]
Tolerance Inches: x.xx=±0.03, x .xxx=±0.020
Millimeters: x.x=±0.7, x.xx=±0.50



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