CBM300S SERIES
300 WATT AC-DC BRICK POWER SUPPLY WITH PFC

Features

- Universal Input Range 90~264V_{ac}
- High Efficiency up to 94%
- Class I
- No Load Input Power Consumption<0.5W
- Peak Power Operation up to 360Watt 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
- 19.7mm Ultra Low-Profile Package
- Full Load with Baseplate Cooled and No Fan Required
- Build in EMI Filters Bulk Capacitor and Output Capacitors
- High Power Density 24.95W/Inches^3
- Wide Operating Temperature Range

E176177

MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT CURRENT	RIPPLE & NOISE NOTE1	VOLTAGE ACCURACY NOTE2	LINE REGULATION NOTE3	LOAD REGULATION NOTE4	TRIM	%EFF. (Typ.) NOTE5
CBM300S120	12 V	25.0 A	1%	±1%	±0.5%	±1%	±5%	92%
CBM300S150	15 V	20.0 A	1%	±1%	±0.5%	±1%	±5%	92%
CBM300S240	24 V	12.5 A	1%	±1%	±0.5%	±1%	±5%	93%
CBM300S280	28 V	10.71 A	1%	±1%	±0.5%	±1%	±5%	93%
CBM300S360	36 V	8.33 A	1%	±1%	±0.5%	±1%	±5%	94%
CBM300S480	48 V	6.25 A	1%	±1%	±0.5%	±1%	±5%	94%
CBM300S540	54 V	5.55 A	1%	±1%	±0.5%	±1%	±5%	94%

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 100V_{ac} to 240V_{ac} 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
CBM300	O	XXX
CBM300	S: Single	120: 12VDC 150: 15VDC 240: 24VDC 280: 28VDC 360: 36VDC 480: 48VDC 540: 54VDC

Part Number Example:
CBM300S120: Brick Power, 300W, Single 12V_{dc} 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	At the center of base plate (T_c = Case temperature)	All	-40		90	℃
Storage Temperature		All	-40		100	℃
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			4	A
Inrush Current	V_{in}=240V_{ac}, Cold start @25℃	All			40	A
Leakage Current (Earth)		All			0.75	mA
Power Factor	230V_{ac}/50Hz @ Full Load	All	0.95	0.98		

OUTPUT CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Output Voltage Set Point	V_{in}=90V_{ac}~264V_{ac}, I_o=Full load Ambient temperature=25℃	CBM300S120 CBM300S150 CBM300S240 CBM300S280 CBM300S360 CBM300S480 CBM300S540	11.88 14.85 23.76 27.72 35.64 47.52 53.46	12 15 24 28 36 48 54	12.12 15.15 24.24 28.28 36.36 48.48 54.54	V_{dc}
Output Voltage Trim Range	P_o≦max. rated power, I_o ≦ I_o_max.	All		±5		%
Operating Output Current Range	V_{in}=90V_{ac}~264V_{ac}, **see derating curve**	CBM300S120 CBM300S150 CBM300S240 CBM300S280 CBM300S360 CBM300S480 CBM300S540			25 20 12.5 10.71 8.33 6.25 5.55	A
Holdup Time	V_{in}=115V_{ac} (Full load)	All	20	25		ms
Load Regulation	10% Load to Full Load	All			±1.0	%
Line Regulation	V_{in}=High line to low line	All			±0.5	%
Over Voltage Protection	Latch off (AC recycle to reset)	CBM300S120 CBM300S150 CBM300S240 CBM300S280 CBM300S360 CBM300S480 CBM300S540			16 20 32 35 43 56 60	V_{dc}
Over Current Protection	Auto recovery	All	125		175	%
Short Circuit Protection	Auto recovery	All				
Over Temperature Protection	Auto recovery	All				

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
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℃	CBM300S120			120	mV
		CBM300S150			150	
		CBM300S240			240	
		CBM300S280			280	
		CBM300S360			360	
		CBM300S480			480	
		CBM300S540			540	
Load Capacitance	1. Input Voltage is $115V_{ac}$ and $230V_{ac}$ 2. Output is max. Full Load 3. Ambient Temperature=25℃	CBM300S120			25000	uF
		CBM300S150			20000	
		CBM300S240			12500	
		CBM300S280			10700	
		CBM300S360			8300	
		CBM300S480			6250	
		CBM300S540			5550	

EFFICIENCY

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Efficiency	1. Input Voltage is $230V_{ac}$ 2. Output is 75% Full Load 3. Ambient Temperature=25℃	CBM300S120		92		%
		CBM300S150		92		
		CBM300S240		93		
		CBM300S280		93		
		CBM300S360		94		
		CBM300S480		94		
		CBM300S540		94		

ISOLATION CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Input to Output	1 Minute (without dielectric breakdown)	All			3000	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		All		75		kHz

GENERAL SPECIFICATIONS

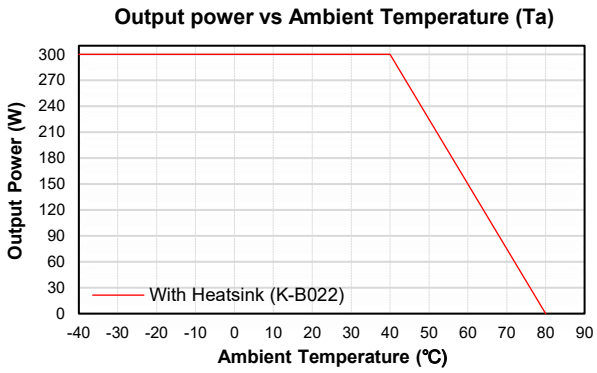
PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
MTBF	I_o=100%; T_a=25℃ per MIL-HDBK-217F I_o=100%; T_a=25℃ per Telcordia SR332	All	240 1700			k hours
Life Time	@75% Load, 40℃	All	44			k hours
Humidity	Non-condensing	All			93	% RH
Shock	Meets MIL-STD-810F Table 516.5,TABLE 516.5-I 10ms, each 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		423		grams
Dimensions		All	4.60x3.35x0.78 Inches (116.8x85.0x19.7 mm)			

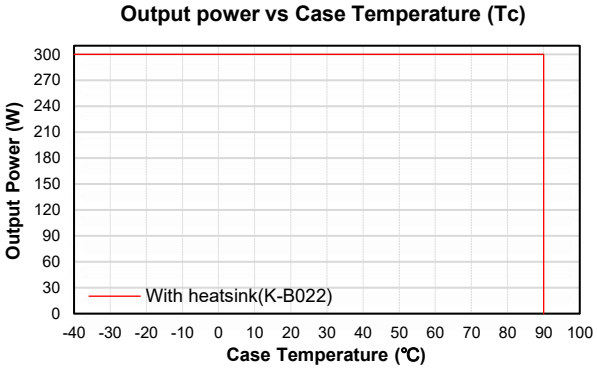
GENERAL SPECIFICATIONS

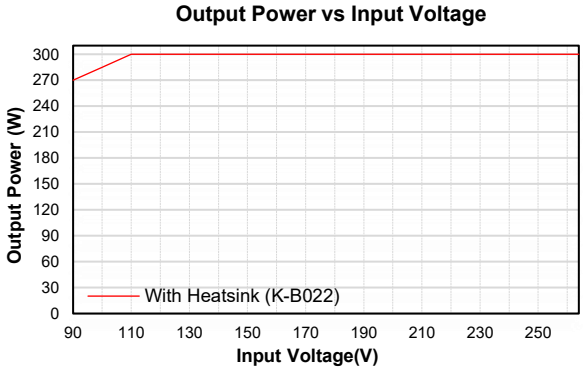
Safety	Class I, IEC/EN/UL 62368-1	Ed. 3.0
EMC Emission	EN 55032, IEC/EN 61000-6-4, EN 61204-3, IEC/EN 61000-3-2, EN 61000-3-3, 47 CFR FCC Part 15	
Conducted Disturbance	EN 55032, 47 CFR FCC Part 15 Subpart B	Class B
Radiated Disturbance	EN 55032, 47 CFR FCC Part 15 Subpart B	Class B
Harmonic Current Emissions	EN 61000-3-2	Class A, C, D
Voltage Fluctuations & Flicker	EN 61000-3-3	Criterion A
EMC Immunity	EN 55035, IEC/EN 61000-6-2, EN 61204-3, IEC/EN 61000-4-2, 3, 4, 5, 6, 8, 11	
Electrostatic Discharge (ESD)	IEC 61000-4-2, Level 3: Air Discharge: ±8kV, Level 2: Contact Discharge: ±4kV	Criterion A
Radio-Frequency, Continuous Radiated Disturbance	IEC 61000-4-3, Level 3: 80~1000MHz, 10V/m	Criterion A
Electrical Fast Transient (EFT)	IEC 61000-4-4, Level 3: ±2kV	Criterion A
Surge	IEC 61000-4-5, Level 3: L-N: ±1kV, L-E(Ground): ±2kV	Criterion A
Conducted Disturbances, Induced by RF Fields	IEC 61000-4-6, Level 3: 0.15~80MHz, 10V	Criterion A
Power Frequency Magnetic Field	IEC 61000-4-8, Level 4: 30A/m	Criterion A
Voltage Dips	IEC/EN 61000-4-11, Dip: 30% Reduction IEC/EN 61000-4-11, Dip >95% Reduction	Criterion A
Voltage Interruptions	IEC 61000-4-11, >95% Reduction	Criterion B
Application Note Link	CBM300S Series App Notes	

CHARACTERISTIC CURVE

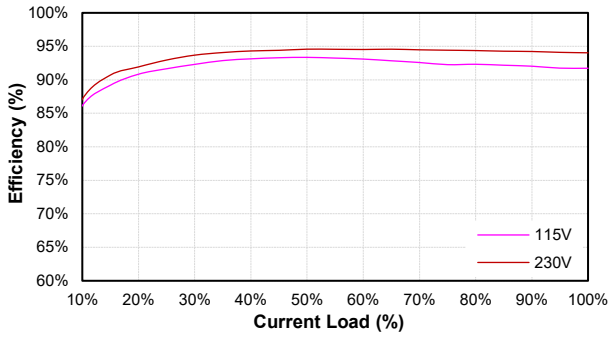
Power Derating Curve







CBM300S120 (Eff Vs Io)



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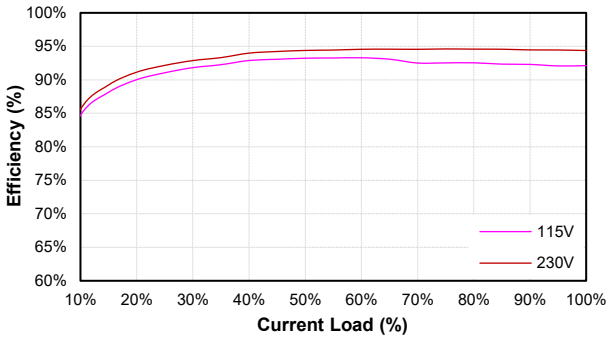

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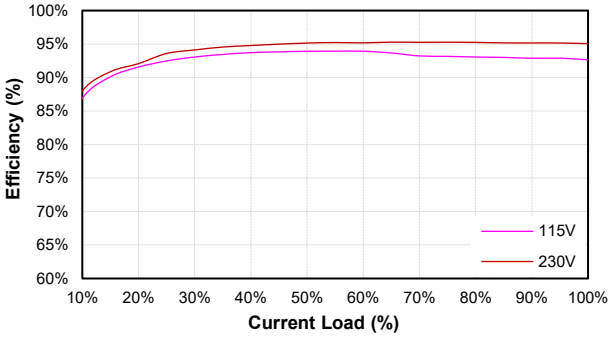

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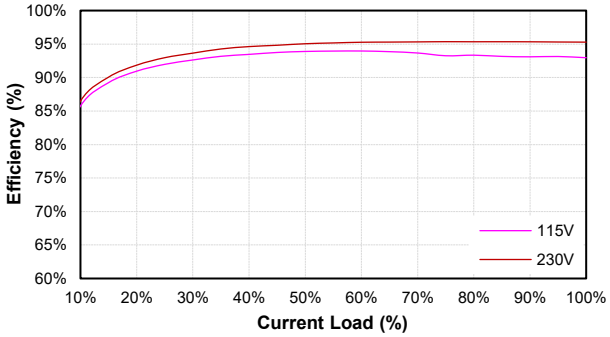

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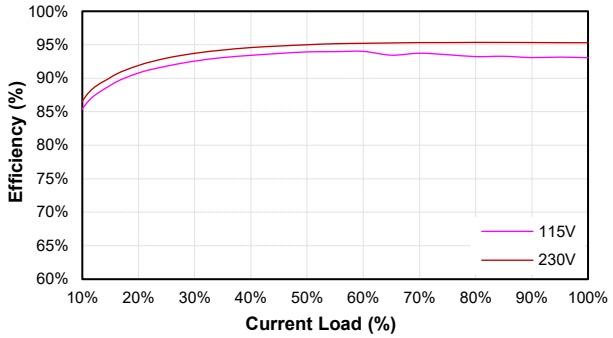

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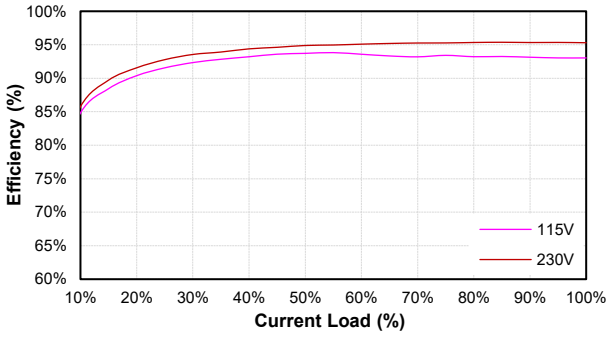

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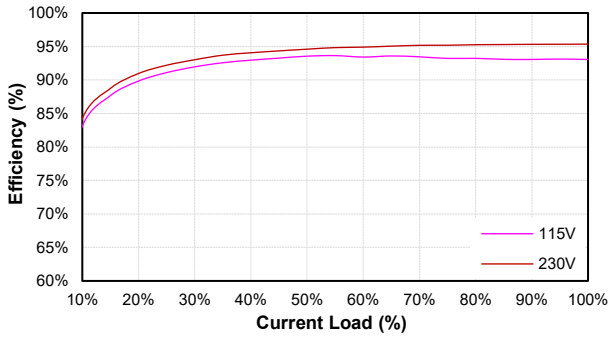
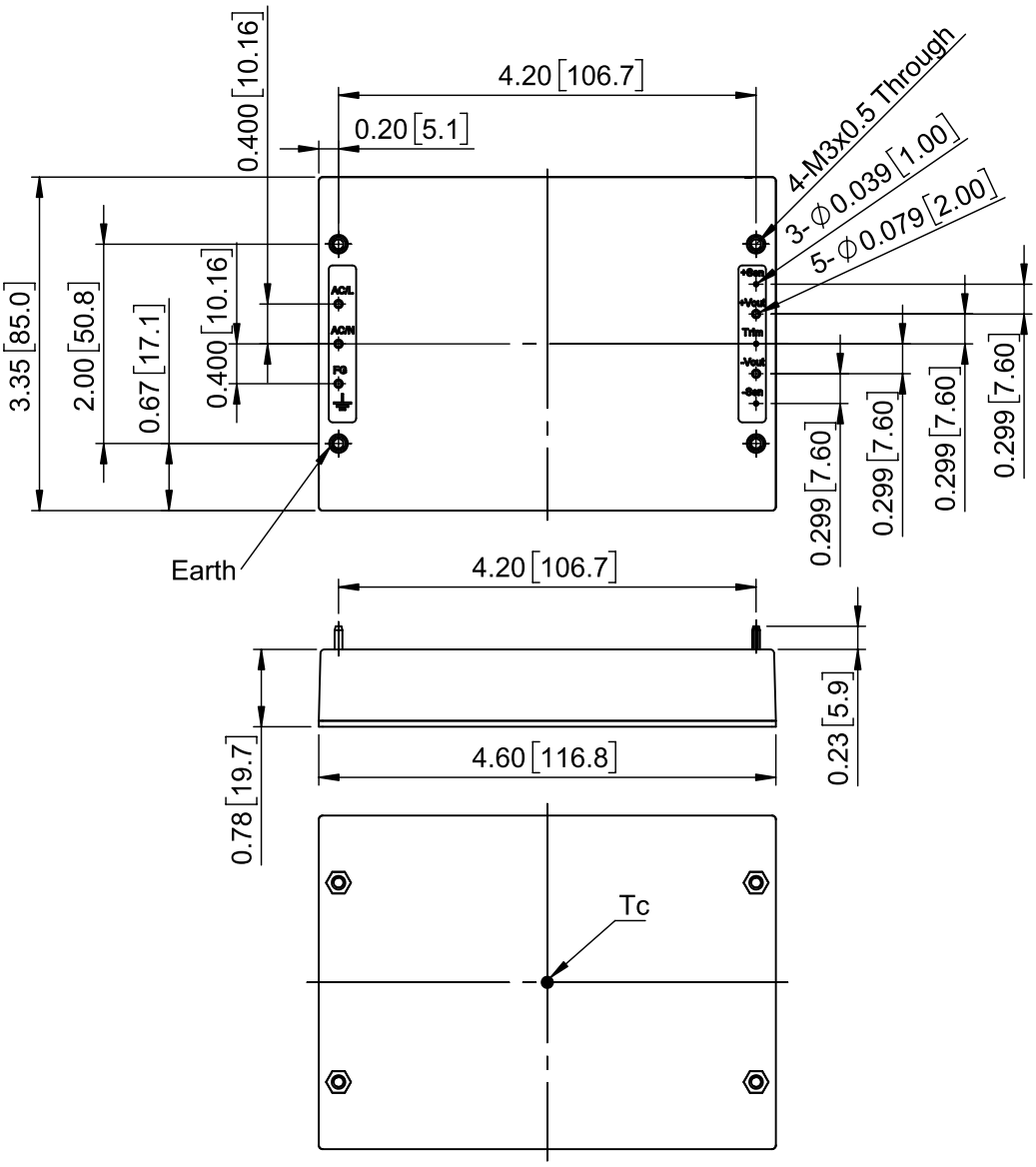


MECHANICAL SPECIFICATION

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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