CBM70S SERIES
70 WATT AC-DC BRICK POWER SUPPLY

Features

- Universal Input Range 90~264V_{ac}
- Efficiency up to 89.5%
- Meets Class I
- No Load Input Power Consumption<150mW
- Safety IEC/EN/UL 62368-1 Approval Ed 3.0
- Operating Altitude 5000m
- Continuous Short Circuit Protection
- Over Temperature Protection
- Over Voltage Protection
- 17mm Ultra Low Profile Half Brick Package
- Full Load with Baseplate Cooled and No Fan Required
- Built-in EN 55032 Class B Filter
- All in One Without External Components
- Wide Operating Temperature Range



E176177

MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT CURRENT	RIPPLE& NOISE NOTE1	VOLTAGE ACCURACY NOTE2	LINE REGULATION NOTE3	LOAD REGULATION NOTE4	%EFF. (Typ.) NOTE5
CBM70S120	12 V	5.83 A	120 mV	±1.0%	±0.5%	±1%	88.0%
CBM70S240	24 V	2.92 A	240 mV	±1.0%	±0.5%	±1%	88.5%
CBM70S360	36 V	1.94 A	360 mV	±1.0%	±0.5%	±1%	89.0%
CBM70S480	48 V	1.46 A	480 mV	±1.0%	±0.5%	±1%	89.5%

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 60% load.
3. Line regulation is measured from 90V_{ac} to 264V_{ac} with full load.
4. Load regulation is measured from 60%±40% rated load.
5. Typical efficiency at 230V_{ac} 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
CBM70	X	XXX
CBM70	S：Single	120：12V 240：24V 360：36V 480：48V

Part Number Example:
CBM70S120:70W, Single 12V_{dc} Output

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TECHNICAL SPECIFICATIONS

(All specifications are typical at nominal input, full load at 25°C 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	90 127		264 370	V_{ac} V_{dc}
Operating Case Temperature	At the center of base plate	All	-40		85	℃
Storage Temperature		All	-40		85	℃
Input/Output Isolation Voltage	1 minute	All	3000			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
Leakage Current		All			3.5	mA
Inrush Current	V_{in}=240V_{ac}, Cold start at 25℃	All			100	A
Under Voltage Protection		All	63	70	77	V_{ac}

OUTPUT CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Output Voltage Set Point	V_{in}=Nominal V_{in}, I_o=60% I_o max., T_c=25℃	CBM70S120 CBM70S240 CBM70S360 CBM70S480	11.88 23.76 35.64 47.52	12 24 36 48	12.12 24.24 36.36 48.48	V_{dc}
Operating Output Current Range	V_{in}=90V_{ac}~264V_{ac}, See Derating Curve	CBM70S120 CBM70S240 CBM70S360 CBM70S480			5.83 2.92 1.94 1.46	A
Holdup Time	V_{in}=115V_{ac}	All		6		ms
Output Voltage Regulation						
Load Regulation	60% Load to100% load & 60% load to 20% load	All			±1.0	%
Line Regulation	V_{in}=High line to low line	All			±0.5	%
Output Voltage Trim Range	P_o≦max. rated power, I_o≦I_o_max.	All	-10		+10	%
Over Current Protection	Hiccup mode, auto recovery	All	110		150	%
Short Circuit Protection	Auto recovery	All				
Over Temperature Protection (Auto Recovery)	shutdown case temperature (without heatsink test)	All		100		℃
	Recovery case temperature (without heatsink test)			95		
Over Voltage Protection	Auto recovery	CBM70S120 CBM70S240 CBM70S360 CBM70S480		14 28 42 56	16 35 50 63	V_{dc}
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℃	CBM70S120 CBM70S240 CBM70S360 CBM70S480			120 240 360 480	mV

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PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Load Capacitance	1. Input voltage is 115V_{ac} and 230V_{ac} 2. Output is max. Load 3. Ambient temperature=25℃	CBM70S120 CBM70S240 CBM70S360 CBM70S480			5830 2920 1940 1460	uF

EFFICIENCY

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Efficiency	1. Input voltage is 230V_{ac} 2. Output is rated load 3. Ambient temperature=25℃	CBM70S120 CBM70S240 CBM70S360 CBM70S480		88.0 88.5 89.0 89.5		%

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			500	V_{ac}
Isolation Resistance	Input to output	All	100			MΩ

FEATURE CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Switching Frequency		All		65		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	550 3000			k hours
Humidity	Nom-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		135		grams
Dimensions		All	2.40x2.28x0.67 Inches (61.0x57.9x17.0mm)			
Case Material	Plastic DAP UL 94V-0					
Base Plate Material	Aluminum					
Potting Material	UL 94V-0					
Safety	Class I, IEC/EN/UL 62368-1					Ed 3.0
EMC Emission	EN 55032, EN 61204-3, EN 61000-6-3, EN 61000-6-4, 47 CFR FCC Part 15 Subpart B, EN 61000-3-2, EN 61000-3-3					Class B
Conducted Disturbance	EN 55032, EN 61204-3, EN 61000-6-3, EN 61000-6-4, 47 CFR FCC Part 15 Subpart B					Class B
Radiated Disturbance	EN 55032, EN 61204-3, EN 61000-6-3, EN 61000-6-4, 47 CFR FCC Part 15 Subpart B					Class B
Harmonic Current Emissions	EN 61000-3-2					
Voltage Fluctuations & Flicker	EN 61000-3-3					
EMC Immunity	EN 55035, EN 61204-3, EN 61000-6-1, EN 61000-6-2					
Electrostatic Discharge (ESD)	IEC 61000-4-2, Level 3: Air Discharge: ±8kV, Contact Discharge: ±4kV					Criterion A
Radio-Frequency Electromagnetic Field	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

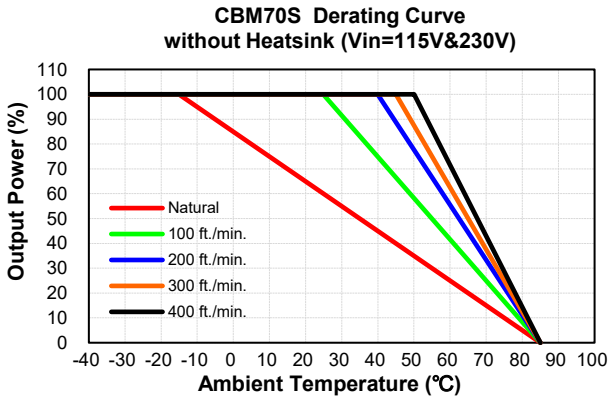
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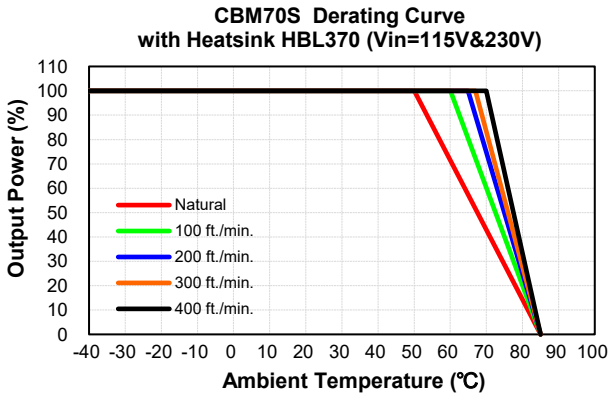
GENERAL SPECIFICATIONS

Radio-Frequency Continuous Conducted	IEC 61000-4-6, Level 3: 0.15-80MHz, 10V	Criterion A
Power Frequency Magnetic Field	IEC 61000-4-8, Level 4: 50-60Hz, 30A/m	Criterion A
Voltage Dips	IEC 61000-4-11, Dip: 30% Reduction IEC 61000-4-11, Dip >95% Reduction	Criterion A
Voltage Interruptions	IEC 61000-4-11, >95% Reduction	Criterion B
Application Note Link	CBM70S Series App Notes	

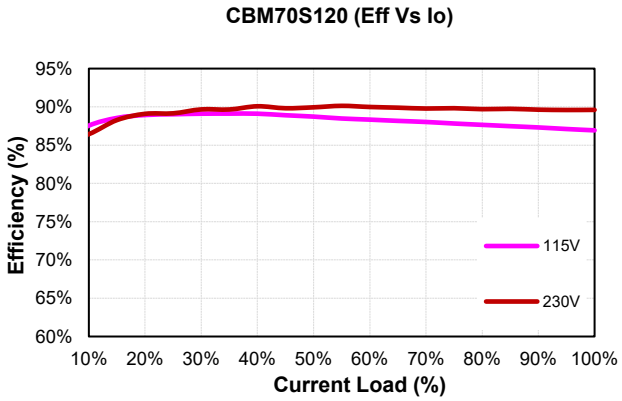
CHARACTERISTIC CURVE

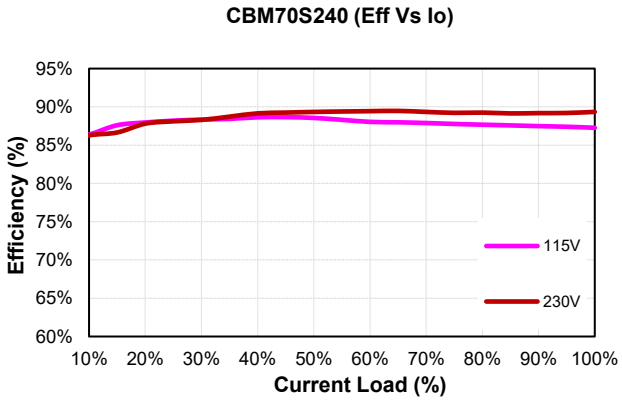
Power Derating Curve

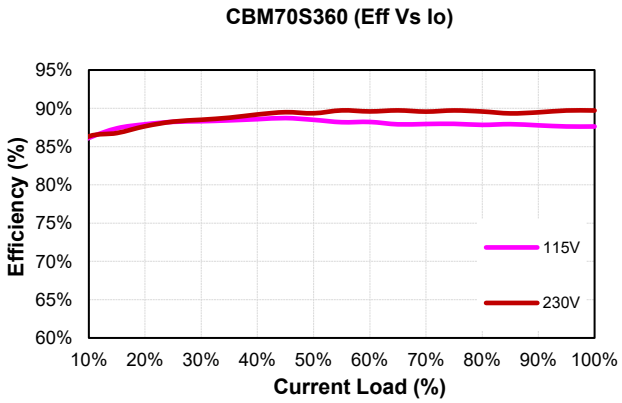


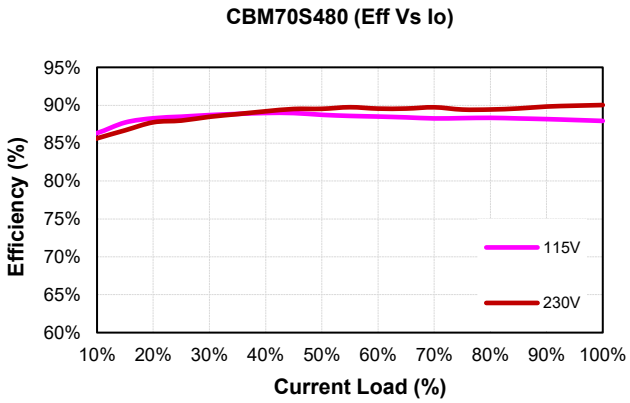


Performance Data



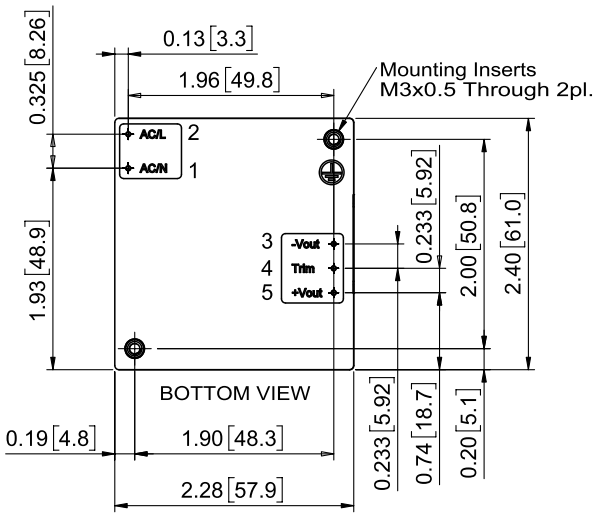


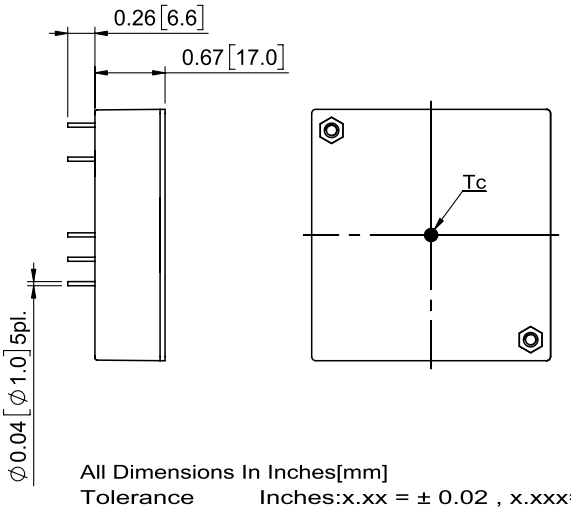




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MECHANICAL SPECIFICATION





All Dimensions In Inches[mm]
Tolerance Inches:x.xx = ± 0.02 , x.xxx=± 0.010
Millimeters:x.x = ± 0.5, x.xx±0.25

Pin Connection

Pin	Function
1	ACN
2	ACL
3	-V Output
4	Trim
5	+V Output

Note:Pin Size is 0.04±0.004 Inch [1.0±0.1 mm]

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