power a Safe and Gleen world

BRICK PACKAGE

DC-DC Converters

AC-DC Converters

Power Factor Correction Module

About ECU

ECU Electronics Industrial Co. Ltd (ECU) has been committed to providing integrated professional power solutions since its establishment in 1992, focusing on research, manufacturing and marketing of power supply products. ECU has an outstanding partnership with many world's top 500 companies by virtue of its core power technology and creative professional team and enjoys a high profile and reputation in the industry. The products manufactured are exported worldwide, eg. USA, Europe, etc.

As a leading supplier in power supply industry, ECU can promptly provide you with full-range power solutions on the basis of standard product platform and its 20 years experience in power supply research and manufacturing.

R&D Capability
Rapid response to customer requirement

Quality Control
National third party monitoring laboratory

Production Guarantee
Ten component insertion lines / Five SMT lines / Two AI lines

Qualification & Certification

1992-2006

- **National High-tech Enterprise**
- Integration Management System Certification

2007-2010

- China's Electronic Components Top 100
- Excellent Enterprise Technology Center
- Production-teaching-research Integration Model Enterprise

2011-2013

- **Academician Workstation**
- Integration of Informatization and Industrialization Model Enterprise
- Power Electronic Engineering Research Center

2014-2017

- **National Technology Center**
- National Technological Innovation Demonstration Unit
- **Post-doctoral Workstation**
- Giant Foster Enterprise

2018

- National Major New Product
- Provincial Industrial Design Centre

Contents

ISO 14001
OHSAS 18001
ISO 9001
GJB 9001

DC-DC Converter Model List

Product	Series	Model	Max Watt	Input Voltage	Output Voltage	Input Current (full-load)	Output Current (max)	Eff.% (Typ)
1x1 Brick DC-DC Converter	EOBS	EOBS030-028S3V3	30W	16-50Vdc	3.3Vdc	2.2A	9A	89%
		EOBS030-028S05			5Vdc	2.2A	6A	90%
		EOBS030-028S08			8Vdc	2.2A	4A	89%
		EOBS030-028S12			12Vdc	2.2A	2.5A	89%
1/16 Brick DC-DC Converter	EVBS	EVBS050-048S3V3	50W	18-75Vdc	3.3Vdc	3.5A	15A	91%
		EVBS050-048S05			5Vdc	3.5A	10A	91%
		EVBS050-048S06			6Vdc	3.5A	8.3A	91%
		EVBS050-048S08			8Vdc	3.5A	6A	92%
		EVBS050-048S12			12Vdc	3.5A	4.2A	92%
		EVBS050-048S15			15Vdc	3.5A	3.3A	90%
		EVBS050-048S24			24Vdc	3.5A	2.1A	88%
		EVBS050-048S28			28Vdc	3.5A	1.8A	88%
1/8 Brick DC-DC Converter	EEBS	EEBS100-024S24	100W	9-36Vdc	24Vdc	3.5A	4.2A	88%
		EEBS100-024S28			28Vdc	3.5A	3.6A	88%
		EEBS120-048S3V3	120W	18-75Vdc	3.3Vdc	8.2A	35A	92%
		EEBS120-048S05			5Vdc	8.9A	24A	93%
		EEBS120-048S08			8Vdc	8.9A	14A	93%
		EEBS120-048S12			12Vdc	8.9A	10A	93%
1/4 Brick DC-DC Converter	EQBS	EQBS150-028S05	150W	18-36Vdc	5Vdc	9.3A	36A	94%
		EQBS150-028S08			8Vdc	6A	18.8A	91%
		EQBS150-028S12			12Vdc	6A	12.5A	91%
		EQBS150-028S50			50Vdc	9.3A	3A	90%
		EQBS150-048S05		18-75Vdc	5Vdc	9.5A	30A	90%
		EQBS150-048S08			8Vdc	9.5A	18.75A	90%
		EQBS150-048S12			12Vdc	9.8A	12.5A	91%
		EQBS360-028S05	360W	16-40Vdc	5Vdc	20A	60A	93%
		EQBS360-028S08			8Vdc	20A	45A	94%
		EQBS360-028S12			12Vdc	20A	30A	94%
		EQBS360-028S28			28Vdc	20A	13A	94%
		EQBS360-056S05		36-75Vdc	5Vdc	9.5A	60A	94%
		EQBS360-160S05		110-220Vdc	5Vdc	3.2A	60A	94%
		EQBS160-500S28	160W	400-650Vdc	28Vdc	0.5A	5.7A	87%
		EQBS160-500S32			32Vdc	0.5A	5A	89%
1/2 Brick DC-DC Converter	EHBS	EHBS200-048S24	200W	20-60Vdc	24Vdc	11A	8.3A	89%
		EHBS400-300S28	400W	200-350Vdc	28Vdc	2.2A	14.5A	93%
		EHBS500-028S12	500W	16-40Vdc	12Vdc	34A	42A	93%
		EHBS500-028S24			24Vdc	34A	20.8A	93%
		EHBS500-028S28			28Vdc	34A	18A	94%
		EHBS500-048S28		36-75Vdc	28Vdc	16A	18A	95%

Full Brick DC-DC Converter	EFBS	EFBS800-300S36	800W	200-400Vdc	36Vdc	4.44A	22A	93%
		EFBS1000-080S24	1000W	60-90Vdc	24Vdc	20A	42A	94%
		EFBS1000-270S14		200-400Vdc	14Vdc	71.5A	5.32A	94%
		EFBS1000-300S28			28Vdc	5.9A	36A	94%
		EFBS1000-300S36			36Vdc	5.9A	28A	95%
		EFBS1000-300S48			48Vdc	5.9A	21A	95%
		EFBS1000-500S28		400-650Vdc	28Vdc	2.9A	36A	93%
		EFBS1000-500S36			36Vdc	2.9A	28A	94%
		EFBS1000-500S48			48Vdc	2.9A	21A	94%
		EFBS1200-300S28	1200W	200-400Vdc	28Vdc	6.9A	43A	94%
		EFBS1200-300S36			36Vdc	6.9A	33.3A	93%
		EFBS1200-300S48			48Vdc	6.9A	25A	94%
		EFBS1200-500S28		400-650Vdc	28Vdc	3.5A	43A	94%
		EFBS1200-500S36			36Vdc	3.5A	33.3A	94%
		EFBS1200-500S48			48Vdc	3.5A	25A	95%
		EFBS1500-300S28	1500W	200-400Vdc	28Vdc	8.3A	53.6A	93%
		EFBS1500-300S36			36Vdc	8.3A	41.7A	93%
		EFBS1500-300S48			48Vdc	8.3A	31A	94%
		EFBS1500-500S28		400-650Vdc	48Vdc	4.1A	31A	95%
		EFBS1500-500S36			36Vdc	4.1A	41.7A	94%
		EFBS1500-500S48			28Vdc	4.1A	53.6A	94%
		EFBS1500-160S100		110-200Vdc	100Vdc	15A	15A	94%

AC-DC Converter Model List

Model	Input Voltage	Output Voltage	Output Current	Output Power (max.)	Eff.%	Temperature Range	Size (L*W*H)
EFBS102-S220-012ST	85-290Vac	12Vdc	83.3A	1000W	92.5%	-40~100℃	122*70*12.7mm
EFBS102-S220-025ST	85-290Vac	25.5Vdc	40A	1000W	93.0%	-40~100℃	122*70*12.7mm
EFBS102-S220-028ST	85-290Vac	28Vdc	35.7A	1000W	93.5%	-40~100℃	122*70*12.7mm
EFBS102-S220-048ST	85-290Vac	48Vdc	20.83A	1000W	93.5%	-40~100℃	122*70*12.7mm

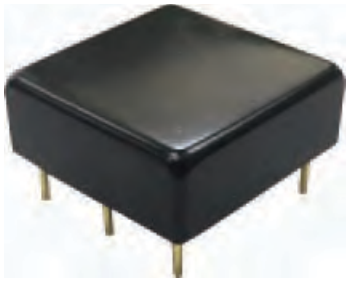
Power Factor Correction Module

Model	Input Voltage	Output Voltage	Output Current	Output Power (max.)	Eff.%	Temperature Range	Size (L*W*H)
EPFC102-220-390-T	176-264Vac	390Vdc	2.6A	1000W	97.0%	-40~100℃	61*57.9*12.7mm
EPFC302-115-270-M	80-140Vac (L-N)	270Vdc	11.1A	3000W	94.0%	-55~105℃	121*155*12.7mm
EPFC302-115-28-M	80-140Vac (L-N)	28Vdc	107A	3000W	93.5%	-55~105℃	121*155*12.7mm

DC-DC Converters

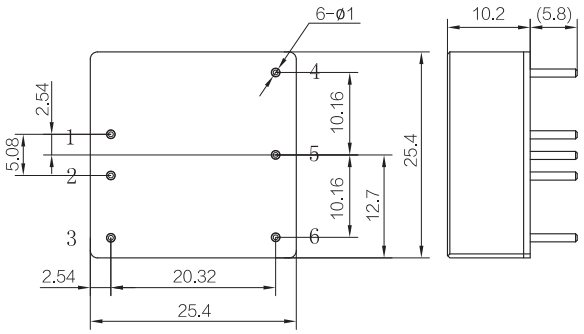
1×1 Brick DC-DC Converter

- High power density up to 110W/inch^3
- High efficiency up to 90%
- 3:1 input ratio
- Trim range: 80%~110%
- Monotonic start-up into pre-bias load
- Input under voltage protection
- Output over-current protection
- Output over voltage protection
- Over temperature protection
- Logic control
- Open frame or encapsulated



Mechanical Specifications

Metal case



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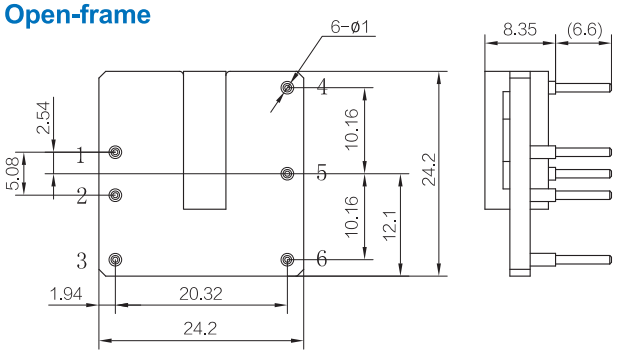


Pin	Function
1	+VIN
2	-VIN
3	ON/OFF
4	-VO
5	TRIM
6	+VO

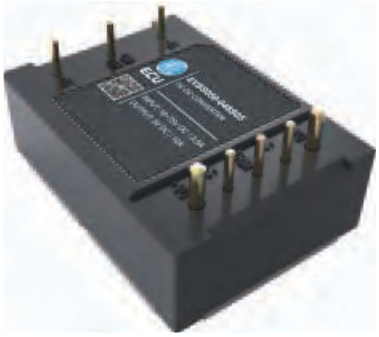
Unit: mm Deviation: .X=±0.25 .XX=±0.10 Pin: ±0.25

Specif ication Parameter

Parameter		Unit	EOBS030-028S3V3	EOBS030-028S05	EOBS030-028S08	EOBS030-028S12
Input	Input voltage	Vdc	−0.3~52			
	Input voltage (100ms)	Vdc	−0.3~55			
	Operating voltage	Vdc	16~50			
	Remote off input current	mA	6			
	Inrush current transient	A^2s	0.05			
	Input opening voltage	Vdc	15			
	Input On and Off voltage	Vdc	14			
	Lockout hysteresis voltage	Vdc	1			
	Input turn off voltage	Vdc	–			
	Input current (max.)	A	2.2			
	Input current (no load)	mA	55			
	Switching frequency	kHz	350			
Output	Output voltage	Vdc	3.3	5	8	12
	Output current	A	9.1	6	4	2.5
	Output power (max.)	W	30			
	Typical efficiency	%	89	90	89	89
	Output voltage trim range	%Vo, set	−10%~10%			
	Output voltage regulation	%Vo, set	± 0.25% max			
	Load regulation	%Vo, set	± 0.25% max			
	Regulation over temperature	%Vo, set	± 0.25% max			
	Output ripple and noise					
	Full load: PK−PK	%Vo, set	3			
	RMS	mVrms	50			
	Output capacitance	uF	5000	5000	2200	2200
	Output current limit	%Io, set	120			
	Over voltage protection	%Vo, set	120			
	Transient response					
	Io=50% to 75% full load: PK−PK	%Vo, set	3%, 350 μs			
	Over−temperature shutdown	℃	105 (TC)			
	OCP hiccup time	sec	0.5			
	OVP hiccup time	sec	2			
Others	Operating temperature	℃	−55~100			
	Storage temperature	℃	−55~125			
	Input/output isolation voltage	Vdc	1500			
	Size (L*W*H)	mm	25.4*25.4*10.2			

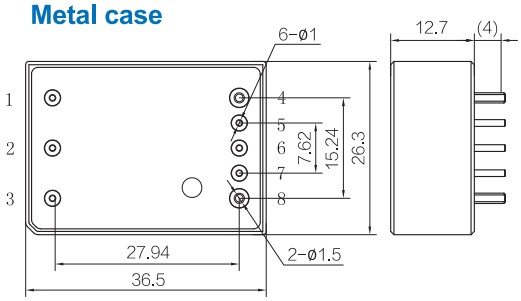
1/16 Brick DC-DC Converter

- High power density up to 110W/inch^3
- High efficiency up to 92%
- 4:1 input ratio
- Trim range: 80%~110%
- Monotonic start-up into pre-bias load
- Input under / over voltage protection
- Output over-current protection
- Output over voltage protection
- Over temperature protection
- Logic control
- Open frame or encapsulated

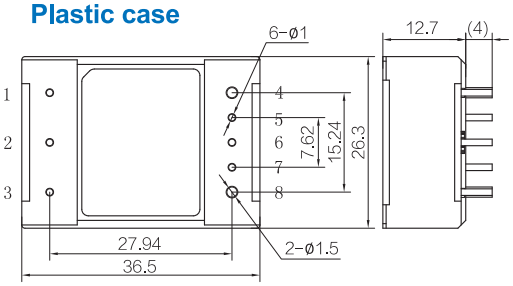


Mechanical Specifications

Metal case



Plastic case



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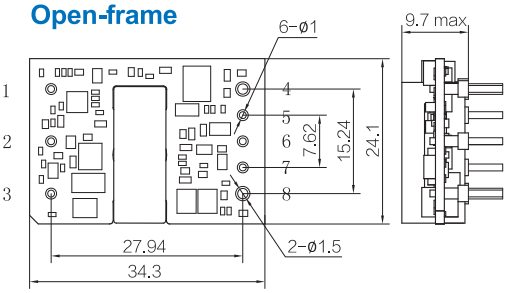


Pin	Function
1	-VIN
2	ON/OFF
3	+VIN
4	-VO
5	-S
6	TRIM
7	+S
8	+VO

Unit: mm Deviation: .X=±0.25 .XX=±0.10 Pin: ±0.25

Specif ication Parameter

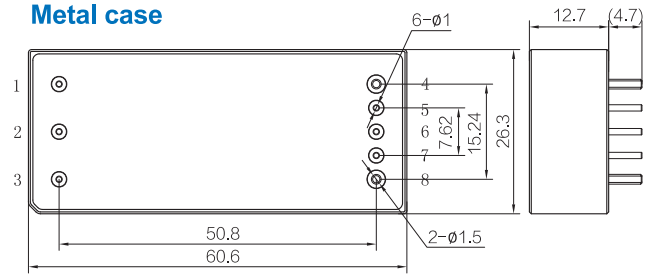
Parameter		Unit	EVBS050-048S3V3	EVBS050-048S05	EVBS050-048S08	EVBS050-048S12
Input	Input voltage	Vdc	−0.3~80			
	Input voltage (100ms)	Vdc	−0.3~100			
	Operating voltage	Vdc	18~75			
	Remote off input current	mA	6			
	Inrush current transient	A^2s	–			
	Input opening voltage	Vdc	17			
	Input On and Off voltage	Vdc	15			
	Lockout hysteresis voltage	Vdc	2			
	Input turn off voltage	Vdc	83			
	Input current (max.)	A	3.5			
	Input current (no load)	mA	50			
	Switching frequency	kHz	350			
Output	Output voltage	Vdc	3.3	5	8	12
	Output current	A	15.2	10	6.3	4.2
	Output power (max.)	W	50			
	Typical efficiency	%	90.5	91	92	91
	Output voltage trim range	%Vo, set	−20~10			
	Output voltage regulation	%Vo, set	0.2			
	Load regulation	%Vo, set	0.2			
	Regulation over temperature	%Vo, set	3			
	Output ripple and noise					
	Full load: PK−PK	%Vo, set	3%，400μs			
	RMS	mVrms	–			
	Output capacitance	uF	5000	5000	2200	2200
	Output current limit	%Io, set	120			
	Over voltage protection	%Vo, set	120			
	Transient response					
	Io=50% to 75% full load: PK−PK	%Vo, set	3%，400μs			
	Over−temperature shutdown	℃	105 (TC)			
	OCP hiccup time	sec	5			
	OVP hiccup time	sec	2.5			
Others	Operating temperature	℃	−50~85			
	Storage temperature	℃	−55~125			
	Input/output isolation voltage	Vdc	2250			
	Size (L*W*H)	mm	36.5*26.3*12.7			

1/8 Brick DC-DC Converter

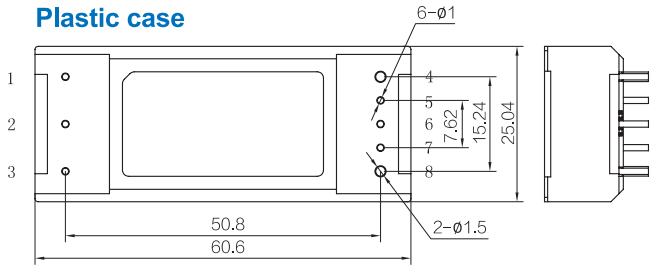
- High power density up to 140W/inch³
- High efficiency up to 93%
- 4:1 input ratio
- Trim range: 90%~110%
- Monotonic start-up into pre-bias load
- Input under / over voltage protection
- Output over-current protection
- Output over voltage protection
- Over temperature protection
- Logic control
- Open frame or encapsulated

Mechanical Specifications

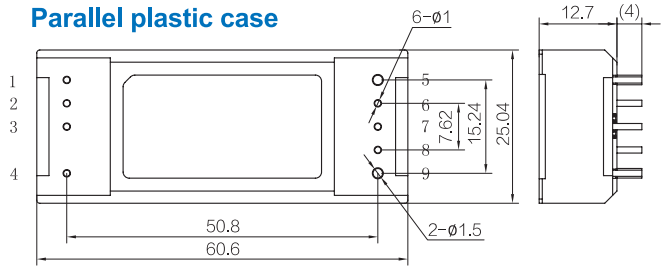
Metal case



Plastic case



Parallel plastic case



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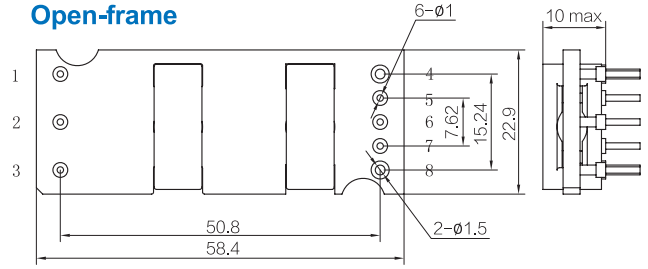


Pin	Function
1	-VIN
2	ON/OFF
3	+VIN
4	-VO
5	-S
6	TRIM
7	+S
8	+VO

Unit: mm Deviation: .X=±0.25 .XX=±0.10 Pin: ±0.25

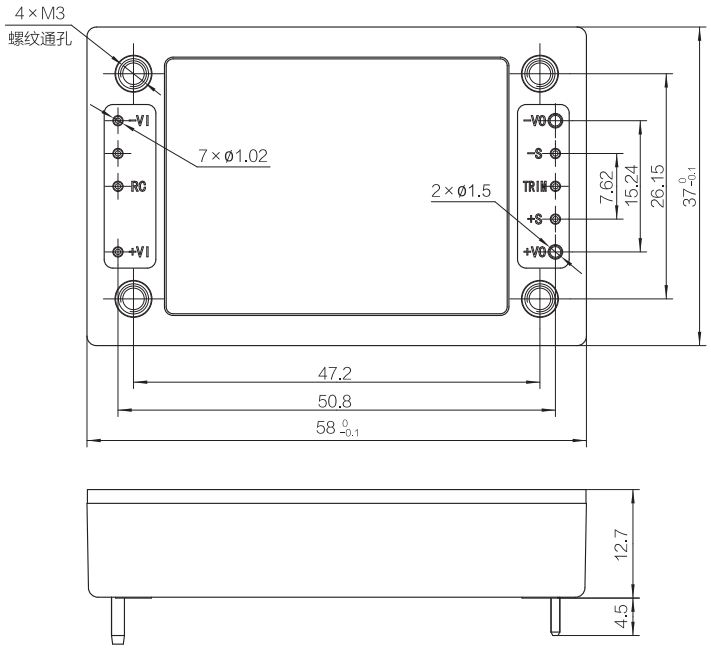
Specif ication Parameter

Parameter		Unit	EEBS120-048S3V3	EEBS120-048S05	EEBS120-048S08	EEBS120-048S12
Input	Input voltage	Vdc	−0.3~80			
	Input voltage (100ms)	Vdc	−0.3~100			
	Operating voltage	Vdc	18~75			
	Remote off input current	mA	9			
	Inrush current transient	A^2s	–			
	Input opening voltage	Vdc	17			
	Input On and Off voltage	Vdc	15			
	Lockout hysteresis voltage	Vdc	2			
	Input turn off voltage	Vdc	81			
	Input current (max.)	A	8.9			
	Input current (no load)	mA	100			
	Switching frequency	kHz	350			
Output	Output voltage	Vdc	3.3	5	8	12
	Output current	A	–	–	–	–
	Output power (max.)	W	120			
	Typical efficiency	%	92	93	93	93
	Output voltage trim range	%Vo, set	−20~10			
	Output voltage regulation	%Vo, set	±0.25			
	Load regulation	%Vo, set	±0.25			
	Regulation over temperature	%Vo, set	3			
	Output ripple and noise					
	Full load: PK−PK	%Vo, set	1			
	RMS	mVrms	50			
	Output capacitance	uF	2000			
	Output current limit	%Io, set	120			
	Over voltage protection	%Vo, set	120			
	Transient response					
	Io=50% to 75% full load: PK−PK	%Vo, set	3%, 400μs			
	Over−temperature shutdown	℃	105 (TC)			
	OCP hiccup time	sec	5			
	OVP hiccup time	sec	2.5			
Others	Operating temperature	℃	−55~100			
	Storage temperature	℃	−55~125			
	Input/output isolation voltage	Vdc	2250			
	Size (L*W*H)	mm	60.5*25.04*12.7			

1/4 Brick DC-DC Converter-150W

- High power density up to 195W/inch^3
- High efficiency up to 90%
- Trim range: 90%–110%
- Monotonic start–up into pre–bias load
- Input under / over voltage protection
- Output over–current protection
- Output over voltage protection
- Over temperature protection
- Parallel function
- Logic control
- All series encapsulation potted: aluminum plate process with excellent heat dissipation

Mechanical Specifications



Pin	Function
1	-VIN
2	ON/OFF
3	+VIN
4	+VO
5	+S
6	TRIM
7	-S
8	-VO

Unit: mm Deviation: .X= ± 0.25 Pin: ± 0.25

Specif ication Parameter

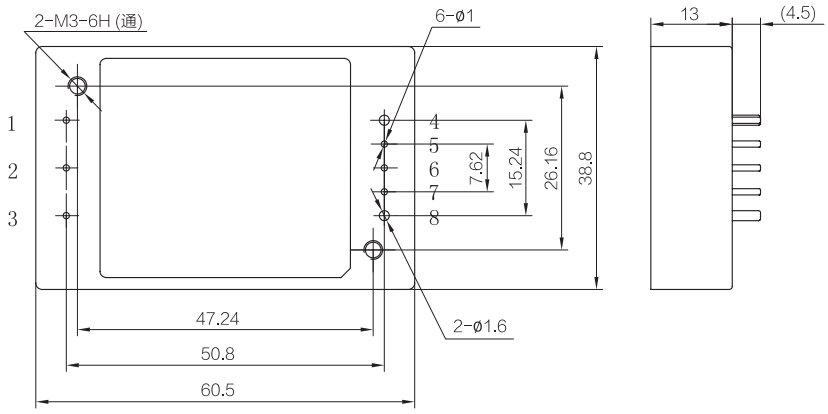
Parameter		Unit	EQBS150-028S05	EQBS150-028S08	EQBS150-028S12	EQBS150-048S05	EQBS150-048S08	EQBS150-048S12
Input	Input voltage	Vdc	−0.3~40			−0.3~80		
	Input voltage (100ms)	Vdc	−0.3~50			−0.3~100		
	Operating voltage	Vdc	18~36			18~75		
	Remote off input current	mA	18			15		
	Inrush current transient	A^2s	–			–		
	Input opening voltage	Vdc	17			17		
	Input On and Off voltage	Vdc	–			–		
	Lockout hysteresis voltage	Vdc	1			1		
	Input turn off voltage	Vdc	–			–		
	Input current (max.)	A	9.3			9.5		
	Input current (no load)	mA	35			110		
	Switching frequency	kHz	280					
Output	Output voltage	Vdc	5	8	12	5	8	12
	Output current	A	–	–	–	–	–	–
	Output power (max.)	W	150					
	Typical efficiency	%	90.5	90.5	90.5	90	90	91
	Output voltage trim range	%Vo, set	−20~10					
	Output voltage regulation	%Vo, set	0.2					
	Load regulation	%Vo, set	0.2					
	Regulation over temperature	%Vo, set	1					
	Output ripple and noise							
	Full load: PK−PK	%Vo, set	1					
	RMS	mVrms	50					
	Output capacitance	uF	2000					
	Output current limit	%Io, set	120					
	Over voltage protection	%Vo, set	120					
	Transient response							
	Io=50% to 75% full load: PK−PK	%Vo, set	3%，400μs					
	Over−temperature shutdown	℃	105 (TC)					
	OCP hiccup time	sec	5					
	OVP hiccup time	sec	2.5					
Others	Operating temperature	℃	−55~100					
	Storage temperature	℃	−55~125					
	Input/output isolation voltage	Vdc	2250					
	Size (L*W*H)	mm	58*37*12.7					

1/4 Brick DC-DC Converter-360W

- High power density up to 195W/inch³
- High efficiency up to 94%
- Trim range: 90%–110%
- Monotonic start–up into pre–bias load
- Input under / over voltage protection
- Output over–current protection
- Output over voltage protection
- Over temperature protection
- Parallel function
- Logic control
- All series encapsulation potted: aluminum plate process with excellent heat dissipation

Mechanical Specifications

Plastic case



Pin	Function
1	-VIN
2	ON/OFF
3	+VIN
4	-VO
5	-S
6	TRIM
7	+S
8	+VO

Unit: mm Deviation: .X=±0.25 .XX=±0.10 Pin: ±0.25

Specif ication Parameter

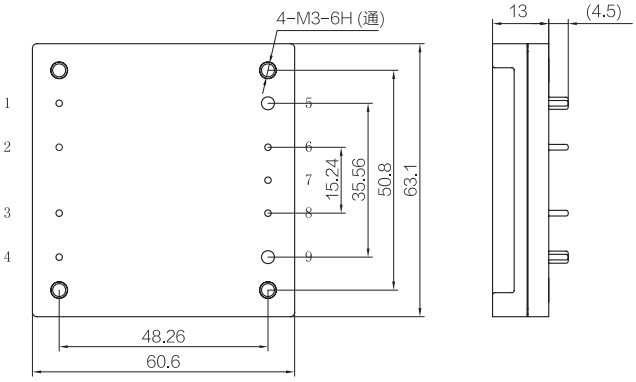
Parameter		Unit	EQBS360-028S05	EQBS360-028S08	EQBS360-028S12	EQBS160-500S28	EQBS160-500S32
Input	Input voltage	Vdc	−0.3~40			−0.3~700	
	Input voltage (100ms)	Vdc	−0.3~50			750	
	Operating voltage	Vdc	16~40			400~650	
	Remote off input current	mA	7			20	
	Inrush current transient	A^2s	–			–	
	Input opening voltage	Vdc	17.5			360	
	Input On and Off voltage	Vdc	–			–	
	Lockout hysteresis voltage	Vdc	1			10	
	Input turn off voltage	Vdc	–			–	
	Input current (max.)	A	26.5			0.5	
	Input current (no load)	mA	120			10	
	Switching frequency	kHz	150	200	150	150	
Output	Output voltage	Vdc	5	8	12	28	32
	Output current	A	–	–	–	–	–
	Output power (max.)	W	300	360	360	160	160
	Typical efficiency	%	94.5	94	94	89	89
	Output voltage trim range	%Vo, set	−20~10				
	Output voltage regulation	%Vo, set	0.2				
	Load regulation	%Vo, set	0.2				
	Regulation over temperature	%Vo, set	1				
	Output ripple and noise						
	Full load: PK−PK	%Vo, set	1				
	RMS	mVrms	50				
	Output capacitance	uF	2000	8000	6000	6000	6000
	Output current limit	%Io, set	120				
	Over voltage protection	%Vo, set	120				
	Transient response						
	Io=50% to 75% full load: PK−PK	%Vo, set	3%，400μs				
	Over−temperature shutdown	℃	105 (TC)				
	OCP hiccup time	sec	5				
	OVP hiccup time	sec	2.5				
Others	Operating temperature	℃	−55~100				
	Storage temperature	℃	−55~125				
	Input/output isolation voltage	Vdc	2250				
	Size (L*W*H)	mm	60.5*38.8*13				

1/2 Brick DC-DC Converter

- High power density up to 169W/inch³
- High efficiency up to 93%
- Trim range:90%–110%
- High voltage type for optional
- Monotonic start–up into pre–bias load
- Input under / over voltage protection
- Output over–current protection
- Output over voltage protection
- Over temperature protection
- Parallel function
- Logic control
- All series encapsulation potted: aluminum plate process with excellent heat dissipation

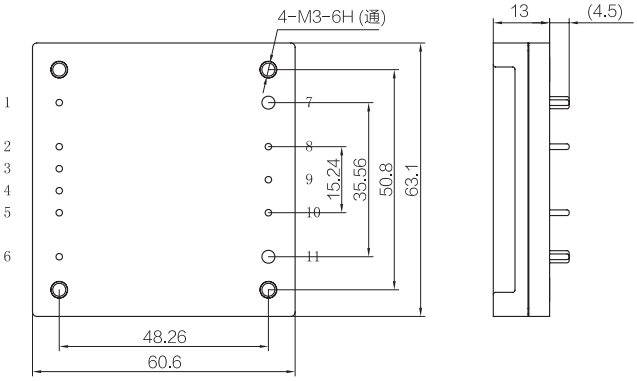
Mechanical Specifications

Metal case 200W / 500W



Pin	Function
1	-VIN
2	PA
3	ON/OFF
4	+VIN
5	-VO
6	-S
7	TRIM
8	+S
9	+VO

Metal case 400W



Pin	Function
1	-VIN
2	Ishare
3	Start sync
4	Clock sync
5	ON/OFF
6	+VIN
7	-VO
8	-S
9	TRIM
10	+S
11	+VO

Unit: mm Deviation: .X= ± 0.25 .XX= ± 0.10 Pin: ± 0.25

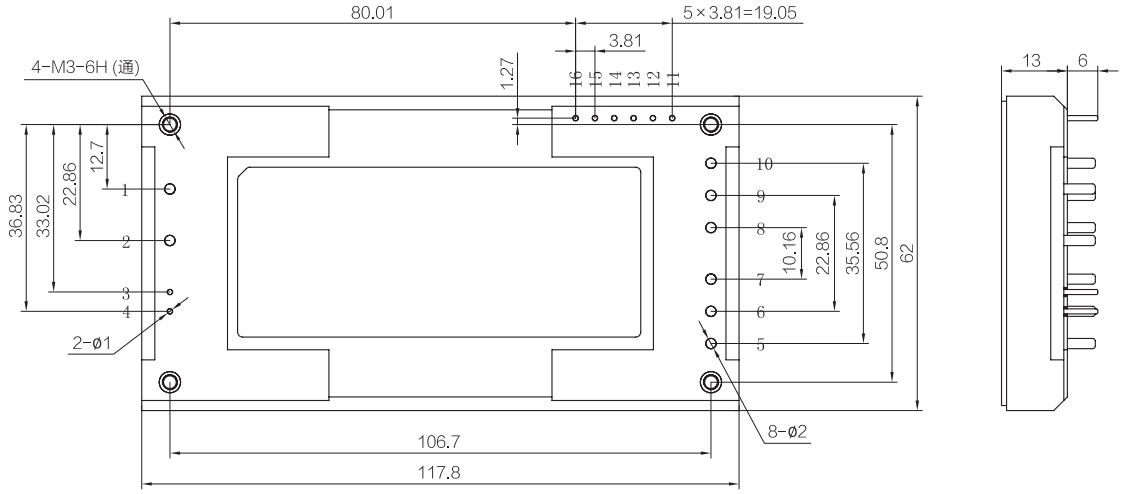
Specif ication Parameter

Parameter		Unit	EHBS500-028S12	EHBS500-028S24	EHBS500-028S28
Input	Input voltage	Vdc		−0.3~45	
	Input voltage (100ms)	Vdc		−0.3~50	
	Operating voltage	Vdc		16~40	
	Remote off input current	mA		12	
	Inrush current transient	A^2s		–	
	Input opening voltage	Vdc		15	
	Input On and Off voltage	Vdc		14	
	Lockout hysteresis voltage	Vdc		1	
	Input turn off voltage	Vdc		43	
	Input current (max.)	A		35	
	Input current (no load)	mA		350	
	Switching frequency	kHz		150	
Output	Output voltage	Vdc	12	24	28
	Output current	A	–	–	–
	Output power (max.)	W		500	
	Typical efficiency	%		93	
	Output voltage trim range	%Vo, set		−20~10	
	Output voltage regulation	%Vo, set		0.25	
	Load regulation	%Vo, set		0.25	
	Regulation over temperature	%Vo, set		1.5	
	Output ripple and noise				
	Full load: PK−PK	%Vo, set		1	
	RMS	mVrms		100	
	Output capacitance	uF		5000	
	Output current limit	%Io, set		120	
	Over voltage protection	%Vo, set		120	
	Transient response				
	Io=50% to 75% full load: PK−PK	%Vo, set		3%，400μs	
	Over−temperature shutdown	℃		105 (TC)	
	OCP hiccup time	sec		5	
	OVP hiccup time	sec		2.5	
Others	Operating temperature	℃		−50~100	
	Storage temperature	℃		−55~125	
	Input/output isolation voltage	Vdc		2250	
	Size (L*W*H)	mm		63.1*60.6*13	

Full Brick DC-DC Converter-800W

- High output power up to 800W
- High efficiency up to 93%
- 2:1 input ratio
- High voltage type
- Monotonic start-up into pre-bias load
- Input under / over voltage protection
- Output over-current protection
- Output over voltage protection
- Over temperature protection
- Parallel function
- Logic control
- All series encapsulation potted: aluminum plate process with excellent heat dissipation

Mechanical Specifications



Unit: mm Deviation: .X=±0.25 .XX=±0.10 Pin: ±0.25

Pin	Function
1	-VIN
2	+VIN
3	-ON/OFF
4	+ON/OFF
5~7	+VO
8~10	-VO
11	-S
12	+S
13	TRIM
14	PC/NC
15	IOC
16	AUX

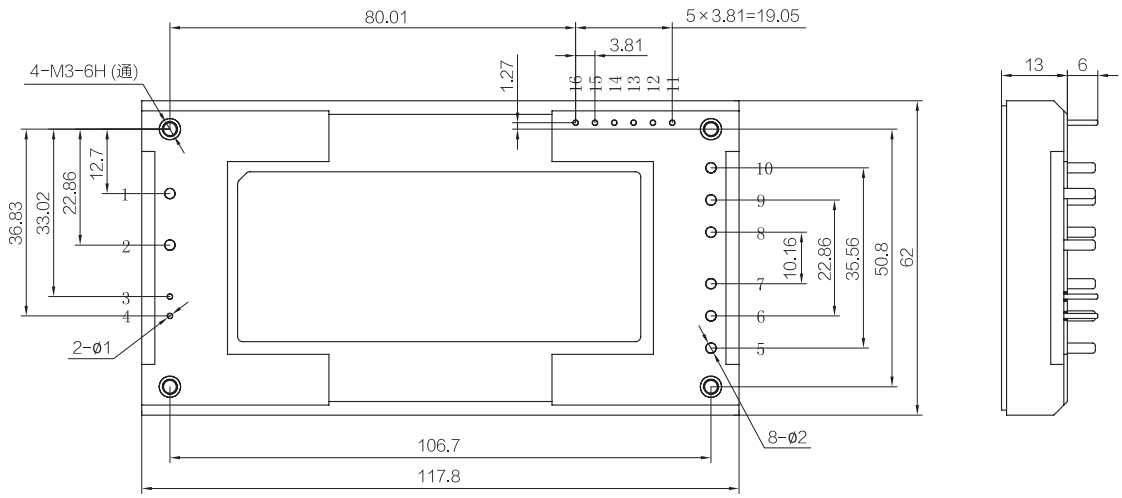
Specif ication Parameter

Parameter		Unit	EFBS800-300S12	EFBS800-300S28	EFBS800-300S36	EFBS800-300S48
Input	Input voltage	Vdc	−0.3~440			
	Input voltage (100ms)	Vdc	−0.3~500			
	Operating voltage	Vdc	200~400			
	Remote off input current	mA	10			
	Inrush current transient	A^2s	–			
	Input opening voltage	Vdc	190			
	Input On and Off voltage	Vdc	180			
	Lockout hysteresis voltage	Vdc	10			
	Input turn off voltage	Vdc	440			
	Input current (max.)	A	4.44			
	Input current (no load)	mA	50			
	Switching frequency	kHz	200			
Output	Output voltage	Vdc	12	28	36	48
	Output current	A	–	–	–	–
	Output power (max.)	W	800			
	Typical efficiency	%	93.5			
	Output voltage trim range	%Vo, set	−20~10			
	Output voltage regulation	%Vo, set	0.25			
	Load regulation	%Vo, set	0.25			
	Regulation over temperature	%Vo, set	1			
	Output ripple and noise					
	Full load: PK−PK	%Vo, set	1			
	RMS	mVrms	–			
	Output capacitance	uF	10000			
	Output current limit	%Io, set	120			
	Over voltage protection	%Vo, set	120			
	Transient response					
	Io=50% to 75% full load: PK−PK	%Vo, set	3%，400μs			
	Over−temperature shutdown	℃	105 (TC)			
	OCP hiccup time	sec	5			
	OVP hiccup time	sec	2.5			
Others	Operating temperature	℃	−55~100			
	Storage temperature	℃	−55~125			
	Input/output isolation voltage	Vdc	3000			
	Size (L*W*H)	mm	117.8*62*13			

Full Brick DC-DC Converter-1000W

- High output power up to 1000W
- High efficiency up to 93%
- 2:1 input ratio
- High voltage type
- Monotonic start-up into pre-bias load
- Input under / over voltage protection
- Output over-current protection
- Output over voltage protection
- Over temperature protection
- Parallel function
- Logic control
- All series encapsulation potted: aluminum plate process with excellent heat dissipation

Mechanical Specifications



Unit: mm Deviation: .X= ± 0.25 .XX= ± 0.10 Pin: ± 0.25

Pin	Function
1	-VIN
2	+VIN
3	-ON/OFF
4	+ON/OFF
5~7	+VO
8~10	-VO
11	-S
12	+S
13	TRIM
14	PC/NC
15	IOC
16	AUX

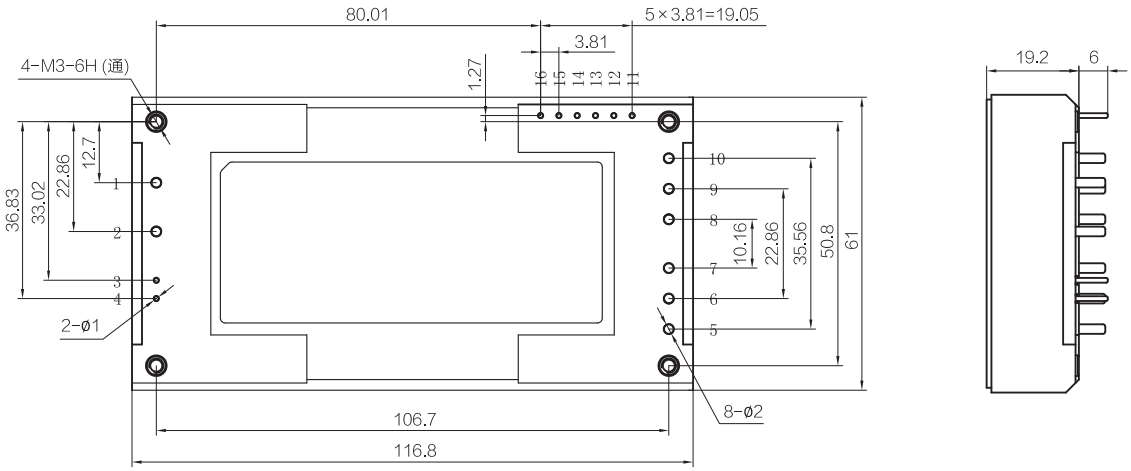
Specif ication Parameter

Parameter		Unit	EFBS1000-500S28	EFBS1000-500S36	EFBS1000-500S48	EFBS1000-300S28	EFBS1000-300S36	EFBS1000-300S48
Input	Input voltage	Vdc	−0.3~680			−0.3~440		
	Input voltage (100ms)	Vdc	−0.3~700			−0.3~500		
	Operating voltage	Vdc	400~650			200~400		
	Remote off input current	mA	5			10		
	Inrush current transient	A^2s	–			–		
	Input opening voltage	Vdc	360			190		
	Input On and Off voltage	Vdc	350			180		
	Lockout hysteresis voltage	Vdc	10			10		
	Input turn off voltage	Vdc	680			430		
	Input current (max.)	A	3			6.3		
	Input current (no load)	mA	30			50		
	Switching frequency	kHz	200			200		
Output	Output voltage	Vdc	28	36	48	28	36	48
	Output current	A	36	28	21	36	28	21
	Output power (max.)	W	1000					
	Typical efficiency	%	93.5					
	Output voltage trim range	%Vo, set	−20~10					
	Output voltage regulation	%Vo, set	0.25					
	Load regulation	%Vo, set	0.25					
	Regulation over temperature	%Vo, set	1.5					
	Output ripple and noise							
	Full load: PK−PK	%Vo, set	1					
	RMS	mVrms	50					
	Output capacitance	uF	20000					
	Output current limit	%Io, set	120					
	Over voltage protection	%Vo, set	120					
	Transient response							
	Io=50% to 75% full load: PK−PK	%Vo, set	3%, 400μs					
	Over−temperature shutdown	℃	105 (TC)					
	OCP hiccup time	sec	5					
	OVP hiccup time	sec	2.5					
Others	Operating temperature	℃	−55~100					
	Storage temperature	℃	−55~125					
	Input/output isolation voltage	Vdc	3000					
	Size (L*W*H)	mm	117.8*62*13					

Full Brick DC-DC Converter-1200W

- High output power up to 1200W
- High efficiency up to 94%
- 2:1 input ratio
- High voltage type
- Monotonic start-up into pre-bias load
- Input under / over voltage protection
- Output over-current protection
- Output over voltage protection
- Over temperature protection
- Parallel function
- Logic control
- All series encapsulation potted: aluminum plate process with excellent heat dissipation

Mechanical Specifications



单位：毫米 (mm)　误差：.X=±0.25 .XX=±0.10　引脚：±0.25

Pin	Function
1	-VIN
2	+VIN
3	-ON/OFF
4	+ON/OFF
5~7	+VO
8~10	-VO
11	-S
12	+S
13	TRIM
14	PC/NC
15	IOC
16	AUX

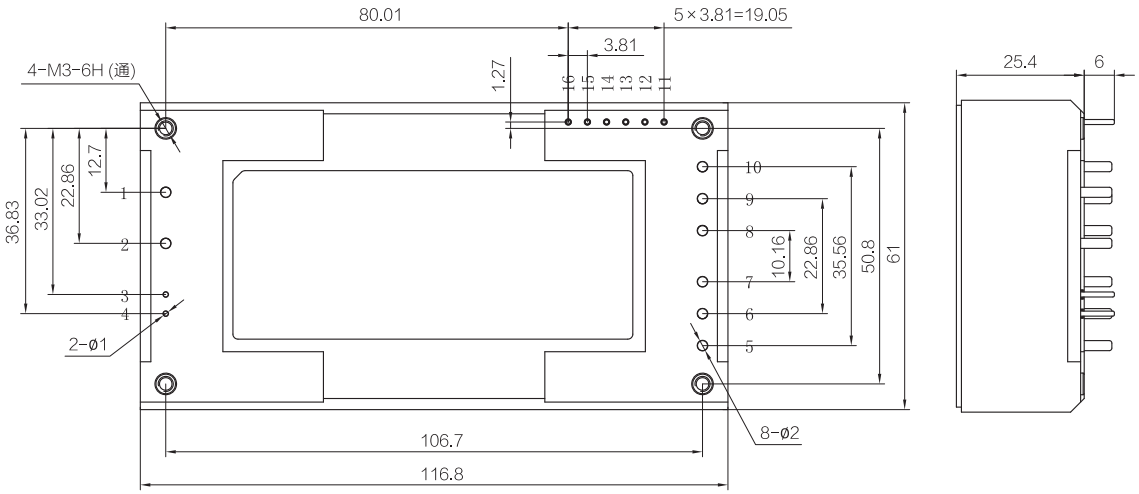
Specif ication Parameter

Parameter		Unit	EFBS1200-300S28	EFBS1200-300S36	EFBS1200-300S48	EFBS1200-500S28	EFBS1200-500S36	EFBS1200-500S48
Input	Input voltage	Vdc	−0.3~440			−0.3~680		
	Input voltage (100ms)	Vdc	−0.3~500			−0.3~700		
	Operating voltage	Vdc	200~400			400~650		
	Remote off input current	mA	10			5		
	Input opening voltage	Vdc	190			360		
	Input under voltage	Vdc	180			350		
	Input under voltage hysteresis	Vdc	10			10		
	Input over voltage	Vdc	440			680		
	Voltage recovery	Vdc	430			670		
	Input current (max.)	A	6.7			3.4		
	Input current (no load)	mA	50			20		
	Switching frequency	kHz	200			200		
Output	Output voltage	Vdc	28	36	48	28	36	48
	Output current	A	43	33	25	43	33	25
	Output power (max.)	W	1200					
	Typical efficiency	%	94					
	Output voltage trim range	%Vo, set	−20~10					
	Output voltage regulation	%Vo, set	0.25					
	Load regulation	%Vo, set	0.25					
	Regulation over temperature	%Vo, set	1.5					
	Output ripple and noise							
	Full load: PK−PK	%Vo, set	1					
	RMS	mVrms	−					
	Output capacitance	uF	100000					
	Output current limit	%Io, set	120					
	Over voltage protection	%Vo, set	120					
	Transient response							
	Io=50% to 75% full load: PK−PK	%Vo, set	3%，400μs					
	Over−temperature shutdown	℃	105 (TC)					
	OCP hiccup time	sec	5					
	OVP hiccup time	sec	2.5					
Others	Operating temperature	℃	−55~100					
	Storage temperature	℃	−55~125					
	Input/output isolation voltage	Vdc	3000					
	Size (L*W*H)	mm	116.8*61*19.2					

Full Brick DC-DC Converter-1500W

- High output power up to 1500W
- High efficiency up to 94%
- 2:1 input ratio
- High voltage type
- Monotonic start-up into pre-bias load
- Input under / over voltage protection
- Output over-current protection
- Output over voltage protection
- Over temperature protection
- Parallel function
- Logic control
- All series encapsulation potted: aluminum plate process with excellent heat dissipation

Mechanical Specifications



Unit: mm Deviation: .X=±0.25 .XX=±0.10 Pin: ±0.25

Pin	Function
1	-VIN
2	+VIN
3	-ON/OFF
4	+ON/OFF
5~7	+VO
8~10	-VO
11	-S
12	+S
13	TRIM
14	PC/NC
15	IOC
16	AUX

Specif ication Parameter

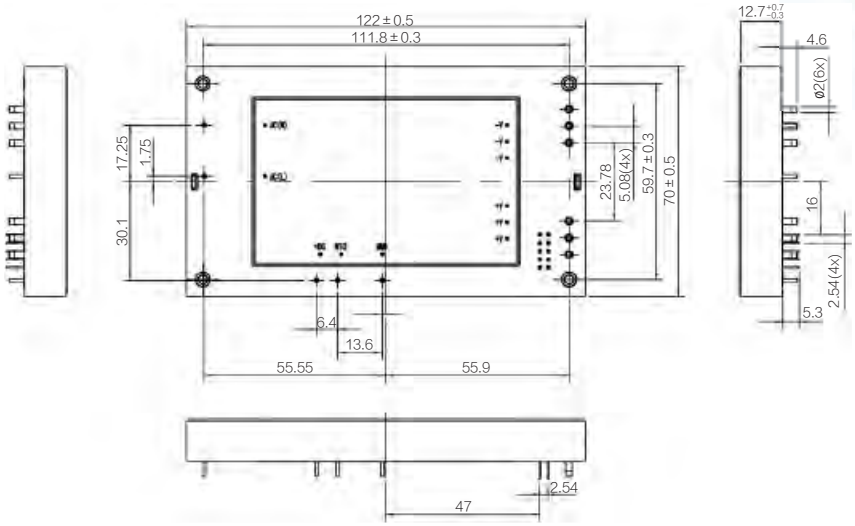
Parameter		Unit	EFBS1500-300S28	EFBS1500-300S36	EFBS1500-300S48	EFBS1500-500S28	EFBS1500-500S36	EFBS1500-500S48
Input	Input voltage	Vdc	−0.3~440			−0.3~680		
	Input voltage (100ms)	Vdc	−0.3~500			−0.3~700		
	Operating voltage	Vdc	200~400			400~650		
	Remote off input current	mA	10			5		
	Inrush current transient	A^2s	0.05			0.05		
	Input opening voltage	Vdc	190			360		
	Input On and Off voltage	Vdc	180			350		
	Lockout hysteresis voltage	Vdc	10			10		
	Input turn off voltage	Vdc	440			680		
	Input current (max.)	A	8.3			4.2		
	Input current (no load)	mA	50			20		
	Switching frequency	kHz	200			200		
Output	Output voltage	Vdc	28	36	48	28	36	48
	Output current	A	54	42	31	54	42	31
	Output power (max.)	W	1500					
	Typical efficiency	%	94					
	Output voltage trim range	%Vo, set	−20~10					
	Output voltage regulation	%Vo, set	0.25					
	Load regulation	%Vo, set	0.25					
	Regulation over temperature	%Vo, set	1.5					
	Output ripple and noise							
	Full load: PK−PK	%Vo, set	1					
	RMS	mVrms	50					
	Output capacitance	uF	100000					
	Output current limit	%Io, set	120					
	Over voltage protection	%Vo, set	120					
	Transient response							
	Io=50% to 75% full load: PK−PK	%Vo, set	3%, 400μs					
	Over−temperature shutdown	℃	105 (TC)					
	OCP hiccup time	sec	5					
	OVP hiccup time	sec	2.5					
Others	Operating temperature	℃	−55~100					
	Storage temperature	℃	−55~125					
	Input/output isolation voltage	Vdc	3000					
	Size (L*W*H)	mm	116.8*61*25.4					

AC–DC Converters

Full Brick AC-DC Converter

- Input over voltage protection
- Output over voltage protection
- Output over current protection
- Output short circuit protection
- Over temperature protection

Mechanical Specifications



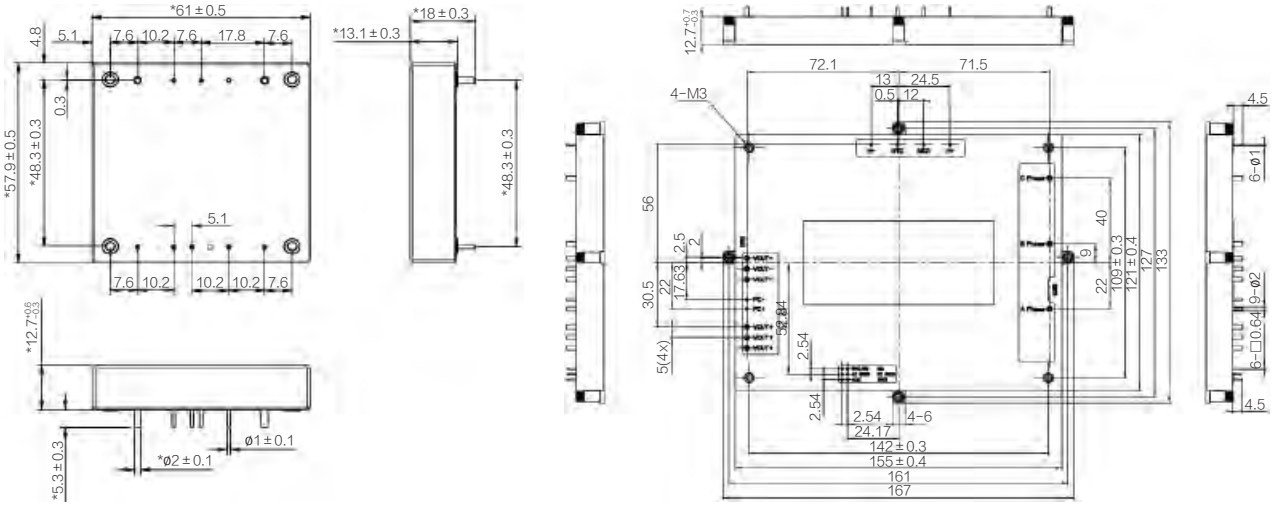
Specification Parameter

Parameter		Unit	EFBS102-S220-012ST			EFBS102-S220-025ST			EFBS102-S220-028ST			EFBS102-S220-048ST		
			Min.	Type.	Max.	Min.	Type.	Max.	Min.	Type.	Max.	Min.	Type.	Max.
Input	Input voltage range	Vac	85	220	290	85	220	290	85	220	290	85	220	290
	AC input frequency	Hz	47	50/60	63	47	50/60	63	47	50/60	63	47	50/60	63
	DC input range	Vdc	200	—	400	200	—	400	200	—	400	200	—	400
	Typical PF		—	0.975	—	—	0.975	—	—	0.975	—	—	0.975	—
	Input current (max.)	A	—	—	8	—	—	8	—	—	8	—	—	8
	Input impulse current	A	—	—	30	—	—	30	—	—	30	—	—	30
Output	Output voltage setting value	Vdc	11.76	12	12.24	24.99	25.5	26.01	27.44	28	28.56	47.04	48	48.96
	Output current	A	0	–	83.3	0	–	40	0	–	35.7	0	–	20.83
	Output power	W	–	–	1000	–	–	1000	–	–	1000	–	–	1000
	Voltage precision	%	–2	–	2	–2	–	2	–2	–	2	–2	–	2
	Line Regulation	%	–0.2	–	0.2	–0.2	–	0.2	–0.2	–	0.2	–0.2	–	0.2
	Load Regulation	%	–0.5	–	0.5	–0.5	–	0.5	–0.5	–	0.5	–0.5	–	0.5
	PK–PK ripple voltage	mV	–	–	200	–	–	250	–	–	280	–	–	350
Others	Protection		Input overvoltage / Undervoltage; Output overvoltage; Output overcurrent											
	Size (L*W*H)	mm	122 × 70 × 12.7											

Power Factor Correction Module

- Input over voltage protection
- Output over voltage protection
- Output over current protection
- Output short circuit protection
- Over temperature protection

Mechanical Specifications



Specification Parameter

Parameter		Unit	EPFC102-220-390-T			EPFC302-115-270-M			EPFC302-115-28-M		
			Min.	Type.	Max.	Min.	Type.	Max.	Min.	Type.	Max.
Input	Input voltage range	Vac	200	240	300	80	115	140	80	115	140
	Input surge voltage	Vac	176	220	264	–	–	–	80	–	180
	AC input frequency	Hz	45	–	65	200	–	800	200	–	800
	Power factor		–	0.99	–	0.99	–	–	0.99	–	–
	Input current (max.)	A	–	–	7	–	–	16.6	–	–	16.6
Output	Output voltage setting value	V	386	390	394	269	270	271	27.44	28	28.56
	Source effect		-2%	–	2%	-2%	–	2%	-1%	–	1%
	Load effect		-3%	–	2%	-2%	–	2%	-1%	–	1%
	Temperature coefficient	%/℃	-0.02	–	0.02	-0.02	–	0.02	-0.02	–	0.02
	Output voltage ripple	mV_{p-p}	–	20	–	–	–	3	–	–	280
	Output current	A	–	–	2.6	–	–	11.1	–	–	107
	Output capacitive load range	uF	480	–	1000	110	–	1000	3000	–	10000
Others	Protection		Output overvoltage; Input undercurrent			Output overvoltage / Overcurrent; Input undervoltage					
	Size (L*W*H)	mm	61 × 57.9 × 12.7			121 × 155 × 12.7					

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