CFB800 SERIES
800 WATT 2:1 INPUT ISOLATED DC-DC CONVERTER

Features

- Efficiency Up to 90%
- Fixed Switching Frequency
- Regulated Outputs
- Remote On/Off
- Fully Protected (OTP/OCP/OVP/UVLO)
- 1500Vdc I/O Isolation
- Operating Case Temperature -40 to +100℃
- Full-Brick Size Meet Industrial Standard 4.60”x2.40”x0.5”
- Shock & Vibration Meets MIL-STD-810F
- Safety Meets UL/IEC/EN 62368-1

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.	CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD		
CFB800-24S28	18-36 VDC	28 VDC	0 mA	28.5 A	200 mA	36.94 A	90	5000uF
CFB800-24S56	18-36 VDC	56 VDC	0 mA	14.25 A	200 mA	36.94 A	90	5000uF

NOTE:

1. Nominal input voltage 24 VDC.
2. An external input capacitor 220uF for all models are recommended to reduce input ripple voltage.
3. The output terminal required a minimum capacitor 470uF to maintain specified regulation.

PART NUMBER

Series	Nominal Input Voltage	Number of Outputs	Nominal Output Voltage	Remote On/Off Logic	Mounting Inserts
CFB800-	II	O	XX	L	-Y (Option)
CFB800	24：24 VDC	S：Single	28：28VDC 56：56VDC	P：Positive None：Negative	None：Clear Mounting Insert (3.5mm DIA.)

Part Number Example:

CFB800-24S28P: Full Brick, 800W, 2:1 18-36Vdc Input, Single 28Vdc Output, Positive Logic, Clear Mounting Insert

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	Continuous	All	-0.3		36	V_{dc}
Input Surge Voltage	100ms max.	All			50	V_{dc}
Operating Case Temperature	At the center part of base plate	All	-40		100	℃
Storage Temperature		All	-55		105	℃

INPUT CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Operating Input Voltage		All	18	24	36	V_{dc}
Input Under Voltage Lockout						
Turn-On Voltage Threshold		All	16.5	17.0	17.5	V_{dc}
Turn-Off Voltage Threshold		All	15.5	16.0	16.5	V_{dc}
Lockout Hysteresis Voltage		All		1.0		V_{dc}
Maximum Input Current	V_{in}=18V_{dc}, Full load	All		49		A
No-Load Input Current	V_{in}=24V_{dc}, I_o=0A	See Model Number Table				mA
Input Filter	Pi filter	All				
Inrush Current (I^2t)	As per ETS300 132-2	All			1.0	A^2s
Input Reflected Ripple Current	P-P Thru 12uH Inductor, 5Hz to 20MHz	All		90		mA

OUTPUT CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Voltage Set Point Accuracy	V_{in}=24V_{dc}, Full load, T_c=25℃	All	-1.0		+1.0	%
Output Voltage Regulation						
Load Regulation	Full load to no load	All			±0.5	%
Line Regulation	V_{in}=High line to low line, full load	All			±0.2	%
Temperature Coefficient	T_c=-40℃ to 100℃	All			±0.02	%/℃
Output Voltage Ripple and Noise (5Hz to 20MHz Bandwidth)						
Peak-to-Peak	Full Load, 10uF Tantalum capacitor and 1uF ceramic capacitors	28Vo			280	mV
		56Vo			560	
RMS.		28Vo			100	mV
		56Vo			200	
Output Current Range	V_{in}= 18 to 36V_{dc}	See Model Number Table				A
Over Current Protection	Continuous current. Auto recovery	All	105	110	135	%
Short Circuit Protection		All	Continuous, Auto Recovery			
External Load Capacitance	Full load (resistive)	See Model Number Table				uF
Output Voltage Trim Range	$P_o \leqq$ max. rated power, $I_o \leqq I_{o\_max.}$	All	-40		+10	%
Output Voltage Remote Sense Range	$P_o \leqq$ max. rated power, $I_o \leqq I_{o\_max.}$ % of nominal V_o	All			+10	%
Over Voltage Protection	Limited voltage, % of nominal V_o	All	115	125	140	%
Auxiliary Output Voltage		All	7	10	13	V
Auxiliary Output Current		All			20	mA
Power Good Signal (IOG)	V_{out} ready: low level, sink current	All			20	mA
	V_{out} not ready: open drain output, applied voltage				50	V
Load Share Accuracy (50%-100% load)	The condition is to use two modules. If you use more modules, please contact cincon	All	-10		+10	%

EFFICIENCY

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
100% Load	V_{in}=24V_{dc}	See Model Number Table				%

DYNAMIC CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Output Voltage Current Transient						
Error Band	75% to 100% of $I_{o\_max.}$ step load change d_i/d_t=0.1A/us (within 1% V_{out} nominal)	All		±3	±5	%
Recovery Time		All			500	us
Turn-On Delay and Rise Time	Full load (constant resistive load)					
Turn-On Delay Time, From On/Off Control	$V_{on/off}$ to 10%V_{o_set}, Remote on	All			75	ms
Turn-On Delay Time, From Input	V_{in_min} to 10%V_{o_set}, Power up	All			250	ms
Output Voltage Rise Time	10%V_{o_set} to 90%V_{o_set}	All			50	ms

ISOLATION CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Isolation Voltage (100% Factory Hi-Pot Tested @2sec.)	1 Minute; input to output 1 Minute; input to case (base plate) 1 Minute; output to case (base plate)	All			1500 1500 1500	V_{dc}
Isolation Resistance	Input to output	All	10			MΩ
Isolation Capacitance	Input to output Input to case (base plate) Output to case (base plate)	All		2760 2000 2000		pF

FEATURE CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Switching Frequency	Pulse width Modulation (PWM), fixed	All	225	250	275	KHz
On/Off Control, Negative Remote On/Off Logic, Refer to -Vin Pin						
Logic Low (Module Off)	$V_{on/off}$ at $I_{on/off}$=1.0mA	All	1		10	mA
Logic High (Module On)	$V_{on/off}$ at $I_{on/off}$=0.0uA, Pin open=on	All	0		0.01	mA
On/Off Control, Positive Remote On/Off Logic, Refer to -Vin Pin						
Logic High (Module Off)	$V_{on/off}$ at $I_{on/off}$=0.0uA, Pin open=off	All	0		0.01	mA
Logic Low (Module On)	$V_{on/off}$ at $I_{on/off}$=1.0mA	All	1		10	mA
Off Converter Input Current	Shutdown input idle current	All			50	mA
Over Temperature Shutdown	Temperature at the center part of base plate, non-latching	All		110		℃
Over Temperature Recovery		All		90		℃

GENERAL SPECIFICATIONS

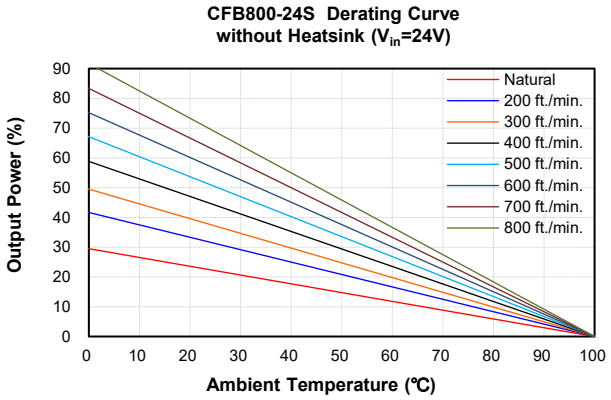
PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
MTBF	I_o=100% of $I_{o\_max.}$; MIL-HDBK - 217F_Notice 1, GB, 25℃	28Vo 56Vo		410 492		K hours
Weight		All		220		grams
Case Material	Plastic, DAP					
Base plate Material	Aluminum					
Potting Material	UL 94V-0					
Pin Material	Base: Copper Plating: Nickel with Matte Tin					
Shock/Vibration	Meet MIL-STD-810F					
Humidity	95% RH max. Non condensing					
Altitude	2000m Operating altitude, 12000m Transport altitude					

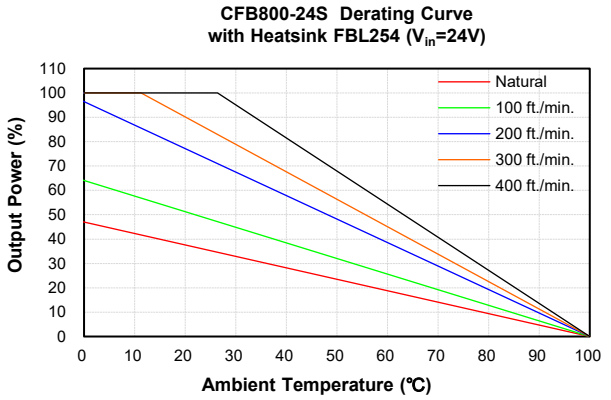
EMC SPECIFICATIONS (External components required, please refer to application note.)

EMI	Meet EN 55032 with External Filter	Class A
Application Note Link		CFB800 Series App Notes
Packaging Information Link		Packaging Information

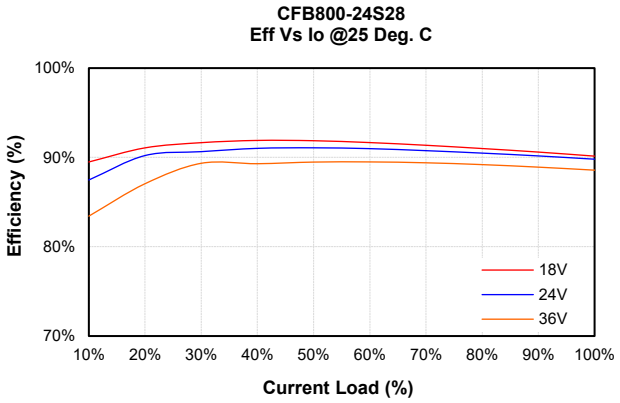
CHARACTERISTIC CURVE

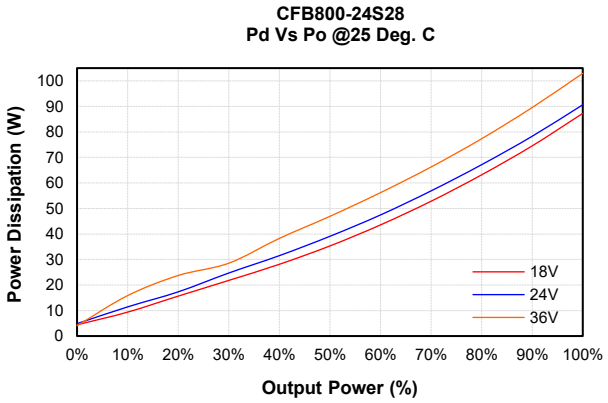
Power Derating Curve

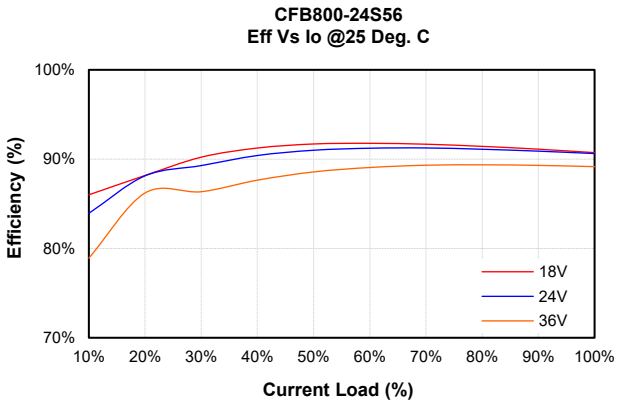


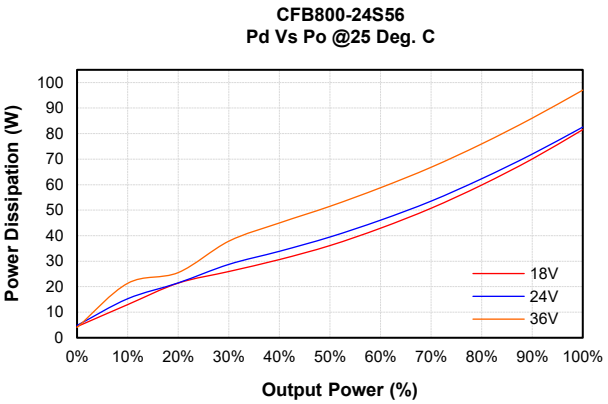


Performance Data

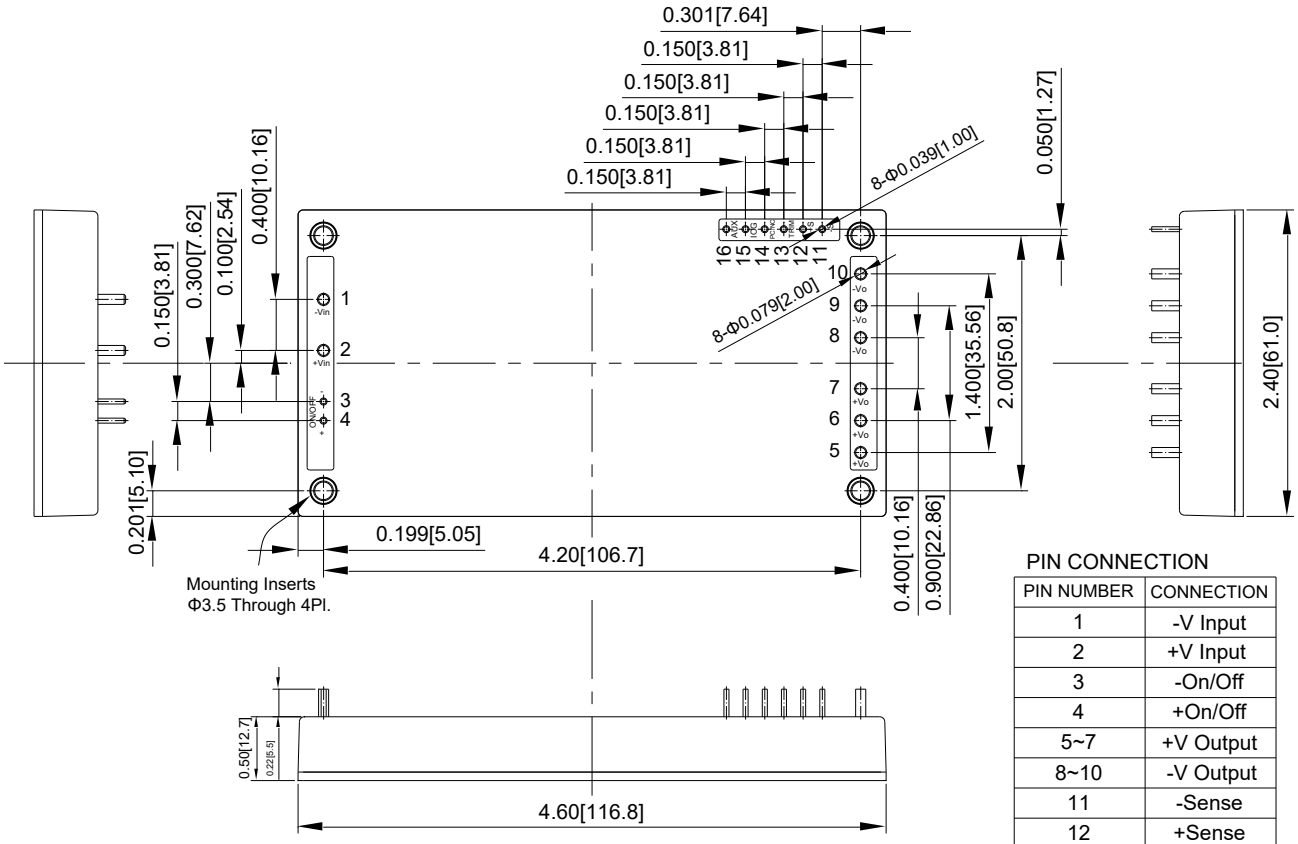








MECHANICAL SPECIFICATION



All Dimensions in Inches[mm] Pin
Tolerance Inches:x.xx=±0.02 , x.xxx=±0.01 ±0.0.04
Millimeters:x.x=±0.5 , x.xx=±0.25 ±0.1

PIN CONNECTION

PIN NUMBER	CONNECTION
1	-V Input
2	+V Input
3	-On/Off
4	+On/Off
5~7	+V Output
8~10	-V Output
11	-Sense
12	+Sense
13	TRIM
14	PC
15	IOG
16	AUX

CINCON Electronics Co. Ltd.
Add: 14F, No. 306, Sec.4, Hsin Yi Rd., Taipei, Taiwan
Tel: 886-2-27086210
Fax: 886-2-27029852
E-mail: sales@cincon.com.tw
Web: www.cincon.com