



# 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°C
- 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°C unless otherwise noted.)

### ABSOLUTE MAXIMUM RATINGS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Input Voltage	Continuous	All	-0.3		36	V <sub>dc</sub>
Input Surge Voltage	100ms max.	All			50	V <sub>dc</sub>
Operating Case Temperature	At the center part of base plate	All	-40		100	°C
Storage Temperature		All	-55		105	°C

### INPUT CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Operating Input Voltage		All	18	24	36	V <sub>dc</sub>
Input Under Voltage Lockout						
Turn-On Voltage Threshold		All	16.5	17.0	17.5	V <sub>dc</sub>
Turn-Off Voltage Threshold		All	15.5	16.0	16.5	V <sub>dc</sub>
Lockout Hysteresis Voltage		All		1.0		V <sub>dc</sub>
Maximum Input Current	V <sub>in</sub> =18V, Full load	All		49		A
No-Load Input Current	V <sub>in</sub> =24V, I <sub>o</sub> =0A	See Model Number Table				mA
Input Filter	Pi filter	All				
Inrush Current (I <sup>2</sup> t)	As per ETS300 132-2	All			1.0	A <sup>2</sup> s
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 <sub>in</sub> =24V, Full load, T <sub>c</sub> =25°C	All	-1.0		+1.0	%
Output Voltage Regulation						
Load Regulation	Full Load to no load	All			±0.5	%
Line Regulation	V <sub>in</sub> =High line to low line, full load	All			±0.2	%
Temperature Coefficient	T <sub>c</sub> =-40°C to 100°C	All			±0.02	%/°C
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 <sub>in</sub> = 18 to 36V	See Model Number Table				A
Over Current Protection	Continuous current. Auto recovery	All	105	110	120	%
Short Circuit Protection		All	Continuous, Auto Recovery			
External Load Capacitance	Full load (resistive)	See Model Number Table				uF
Output Voltage Trim Range	P <sub>o</sub> ≤ max. rated power, I <sub>o</sub> ≤ I <sub>o_max</sub> .	All	-40		+10	%
Output Voltage Remote Sense Range	P <sub>o</sub> ≤ max. rated power, I <sub>o</sub> ≤ I <sub>o_max</sub> . % of nominal V <sub>o</sub>	All			+10	%
Over Voltage Protection	Limited voltage, % of nominal V <sub>o</sub>	All	115	125	140	%
Auxiliary Output Voltage		All	7	10	13	V
Auxiliary Output Current		All			20	mA
Power Good Signal (IOG)	V <sub>out</sub> ready: low level, sink current	All			20	mA
	V <sub>out</sub> not ready: open drain output, applied voltage	All			50	V
Load Share Accuracy (50%-100% load)		All	-5		+5	%

### EFFICIENCY

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
100% Load	V <sub>in</sub> =24V	See Model Number Table				%



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## 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		$\pm 3$	$\pm 5$	%
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	All			1500	$V_{dc}$
	1 Minute; input to case (base plate)				1500	
	1 Minute; output to case (base plate)				1500	
Isolation Resistance	Input to output	All	10			M $\Omega$
Isolation Capacitance	Input to output	All		2760		pF
	Input to case (base plate)			2000		
	Output to case (base plate)			2000		

## 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		$^{\circ}C$
Over Temperature Recovery		All		90		$^{\circ}C$

## GENERAL SPECIFICATIONS

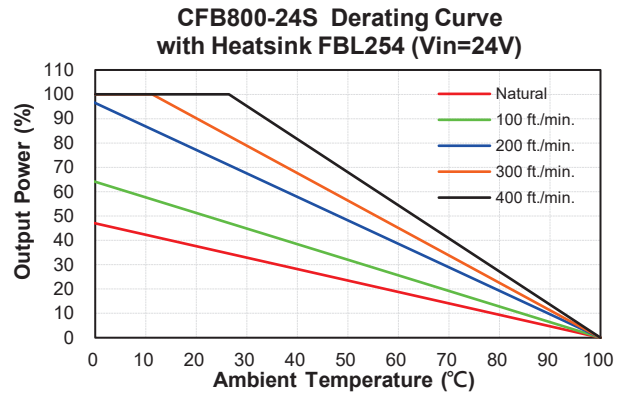
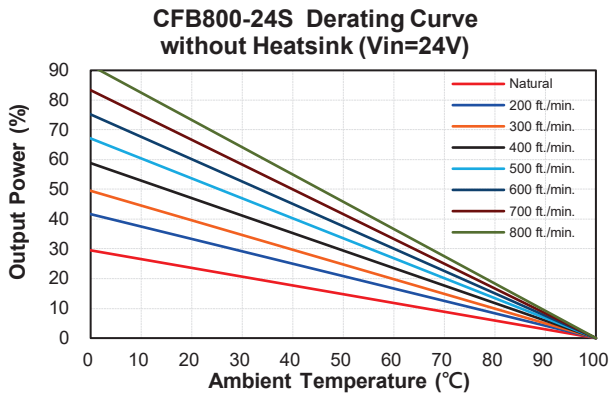
PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
MTBF	$I_o=100\%$ of $I_{o\_max}$ ; MIL-HDBK - 217F_Notice 1, GB, 25 $^{\circ}C$	24S28		410		K hours
		24S56		492		
Weight		All		220		grams
Case Material	Plastic, DAP					
Base plate Material	Aluminum					
Potting Material	UL 94V-0					
Pin Material	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					
EMI	Meet EN55032 with External Filter					Class A
Application Note Link	<a href="#">CFB800 Series App Notes</a>					
Packaging Information Link	<a href="#">Packaging Information</a>					



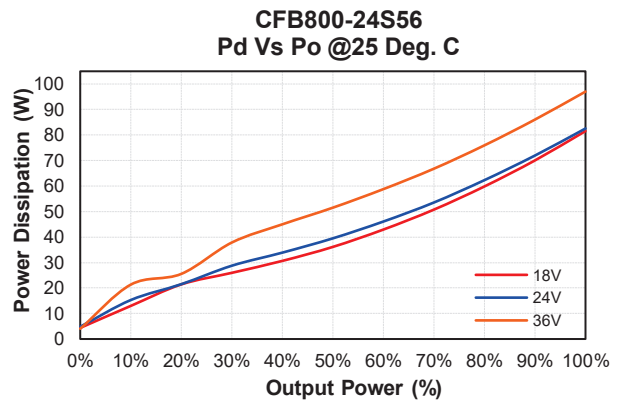
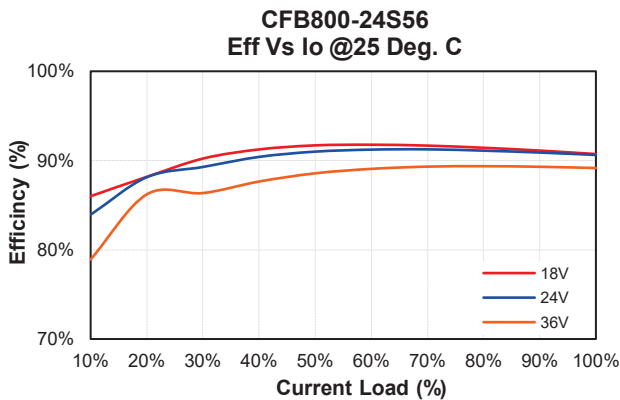
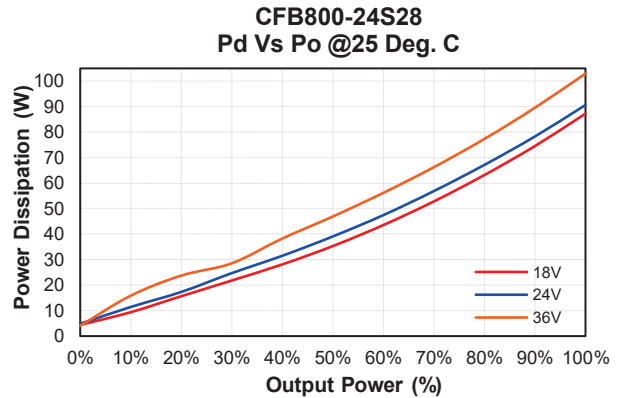
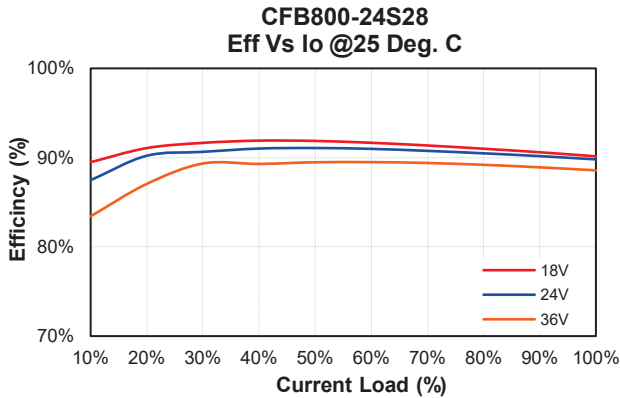
# CFB800 Series

## CHARACTERISTIC CURVE

### Power Derating Curve



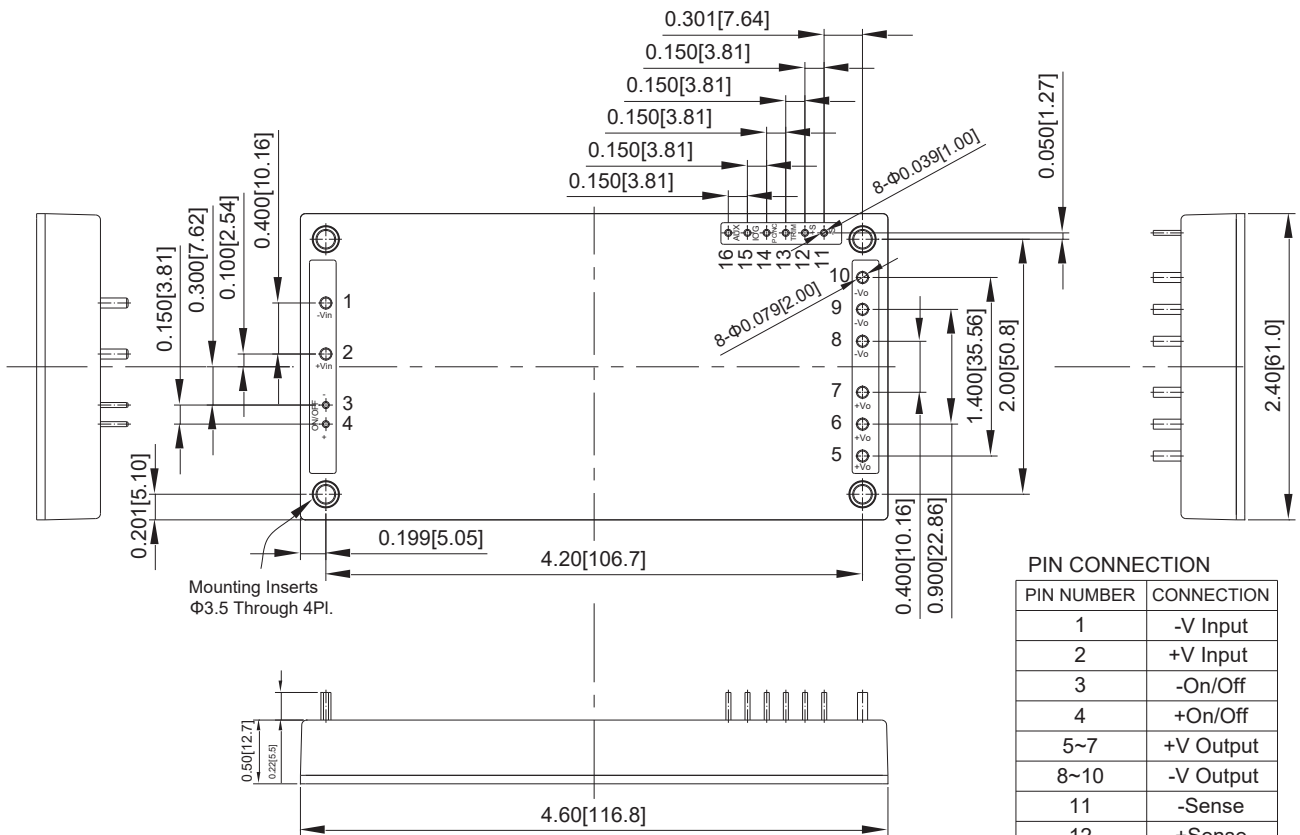
### Performance Data





# CFB800 Series

## MECHANICAL SPECIFICATION



### 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	I/OG
16	AUX

All Dimensions in Inches[mm] Pin  
Tolerance Inches:x.xx=±0.02 , x.xxx=±0.01 ±0.04  
Millimeters:x.x=±0.5 , x.xx=±0.25 ±0.1