



# CFM25S SERIES 25 WATT OPEN FRAME AC-DC MODULES

## Features

- Universal Input Range 90~264Vac
- High Efficiency up to 87%
- 2"x 1.1" Open Frame Compact Size
- Class II
- No Load Input Power < 0.1W
- Approval IEC/EN/UL 62368-1
- Approval IEC/EN 60335-1
- Approval EN 55032 Class B and CISPR/FCC Class B
- Operating Altitude 5000m
- Continuous Short Circuit Protection
- Over Voltage Protection
- Peak Load (2 Times of Rated Current (note7))



| MODEL NUMBER | OUTPUT VOLTAGE | OUTPUT CURRENT | VOLTAGE ACCURACY NOTE1 | RIPPLE& NOISE NOTE2 | LINE REGULATION NOTE3 | LOAD REGULATION NOTE4 | %EFF. (Typ.) NOTE5 |
|--------------|----------------|----------------|------------------------|---------------------|-----------------------|-----------------------|--------------------|
| CFM25S050    | 5 V            | 4.0 A          | ±2%                    | 50mV                | ±1%                   | ±1%                   | 81%                |
| CFM25S120    | 12 V           | 2.1 A          | ±1%                    | 120mV               | ±1%                   | ±1%                   | 84%                |
| CFM25S150    | 15 V           | 1.67 A         | ±1%                    | 150mV               | ±1%                   | ±1%                   | 85%                |
| CFM25S240    | 24 V           | 1.05 A         | ±1%                    | 240mV               | ±1%                   | ±1%                   | 86%                |
| CFM25S360    | 36 V           | 0.7 A          | ±1%                    | 360mV               | ±1%                   | ±1%                   | 87%                |
| CFM25S480    | 48 V           | 0.52 A         | ±1%                    | 480mV               | ±1%                   | ±1%                   | 87%                |

Note:

1. Voltage accuracy is set at 100% full load.
2. Add a 0.1uF ceramic capacitor and a 10uF E.L. capacitor to output for ripple & noise measurement @20MHz BW.
3. Line regulation is measured from 90V<sub>ac</sub> to 264V<sub>ac</sub> with 100% full load.
4. Load regulation is measured from 10% to 100% full load.
5. Typical efficiency at 230 V<sub>ac</sub> and 100% full load at 25°C.
6. T Version wafer with JST B3B-XH/B4B-XH and mate with JST housing XH series or equivalent.
7. PL (peak load function) lasting time <10 seconds with a maximum 10% duty cycle and must add external 33uF/400V capacitor to BC+ & BC-.
8. L version & EL version Safety only approved only IEC/EN 60335-1.

## PART NUMBER

| Series | Number of Outputs | Nominal Output Voltage                                              | Type                                                                                            | Optional                              |
|--------|-------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|---------------------------------------|
| CFM25  | X                 | XXX                                                                 | -XX                                                                                             | XX                                    |
| CFM25  | S: Single         | 050: 5V<br>120: 12V<br>150: 15V<br>240: 24V<br>360: 36V<br>480: 48V | Blank: PCB Mount<br>E: Encapsulated<br>T: Wafer<br>L: Lead Wire<br>EL: Encapsulated & Lead Wire | Blank: None<br>PL: Peak Load Function |

Part Number Example:

**CFM25S120-T**: Open Frame, 25W, Single 12V<sub>dc</sub> Output, Wafer



# CFM25S Series

## 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   |      | 264  | V <sub>ac</sub> |
|                            |                                       |        | 120  |      | 370  | V <sub>dc</sub> |
| Operating Case Temperature | See Derating Curve                    | All    | -30  |      | 70   | °C              |
| Storage Temperature        |                                       | All    | -30  |      | 85   | °C              |
| Operating Altitude         | IEC/EN/UL 62368-1                     | All    |      |      | 5000 | m               |
|                            | IEC/EN 60335-1                        |        |      |      |      |                 |

### INPUT CHARACTERISTICS

| PARAMETER               | NOTES and CONDITIONS                                     | Device | Min. | Typ. | Max. | Units           |
|-------------------------|----------------------------------------------------------|--------|------|------|------|-----------------|
| Operating Voltage Range |                                                          | All    | 100  |      | 240  | V <sub>ac</sub> |
| Input Frequency Range   |                                                          | All    | 50   |      | 60   | Hz              |
| Maximum Input Current   | 100% Load, V <sub>in</sub> =100V <sub>ac</sub>           | All    |      |      | 0.7  | A               |
| Leakage Current         |                                                          | All    |      |      | 0.25 | mA              |
| Inrush Current          | V <sub>in</sub> =240V <sub>ac</sub> , Cold start at 25°C | All    |      |      | 60   | A               |

### OUTPUT CHARACTERISTICS

| PARAMETER                      | NOTES and CONDITIONS                                                                                                                                        | Device    | Min.  | Typ. | Max.  | Units           |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------|------|-------|-----------------|
| Output Voltage Set Point       | V <sub>in</sub> =Nominal V <sub>in</sub> , I <sub>o</sub> =I <sub>o</sub> max., T <sub>c</sub> =25°C                                                        | CFM25S050 | 4.90  | 5    | 5.10  | V <sub>dc</sub> |
|                                |                                                                                                                                                             | CFM25S120 | 11.88 | 12   | 12.12 |                 |
|                                |                                                                                                                                                             | CFM25S150 | 14.85 | 15   | 15.15 |                 |
|                                |                                                                                                                                                             | CFM25S240 | 23.76 | 24   | 24.24 |                 |
|                                |                                                                                                                                                             | CFM25S360 | 35.64 | 36   | 36.36 |                 |
|                                |                                                                                                                                                             | CFM25S480 | 47.52 | 48   | 48.48 |                 |
| Operating Output Current Range | V <sub>in</sub> =115V <sub>ac</sub> and 230V <sub>ac</sub> , T <sub>c</sub> =25°C                                                                           | CFM25S050 |       |      | 4.0   | A               |
|                                |                                                                                                                                                             | CFM25S120 |       |      | 2.1   |                 |
|                                |                                                                                                                                                             | CFM25S150 |       |      | 1.67  |                 |
|                                |                                                                                                                                                             | CFM25S240 |       |      | 1.05  |                 |
|                                |                                                                                                                                                             | CFM25S360 |       |      | 0.7   |                 |
|                                |                                                                                                                                                             | CFM25S480 |       |      | 0.52  |                 |
| Holdup Time                    | V <sub>in</sub> =115V <sub>ac</sub>                                                                                                                         | All       |       | 8    |       | ms              |
| Output Voltage Regulation      |                                                                                                                                                             |           |       |      |       |                 |
| Load Regulation                | 10% Load to full load                                                                                                                                       | All       |       |      | ±1.0  | %               |
| Line Regulation                | V <sub>in</sub> =High Line to low line                                                                                                                      | All       |       |      | ±1.0  | %               |
| Over Voltage Protection        | Built-in a TVS component to clamp output voltage                                                                                                            | CFM25S050 | 6.45  | 6.8  | 7.44  | V <sub>dc</sub> |
|                                |                                                                                                                                                             | CFM25S120 | 14.3  | 15   | 16.2  |                 |
|                                |                                                                                                                                                             | CFM25S150 | 17.1  | 18   | 18.9  |                 |
|                                |                                                                                                                                                             | CFM25S240 | 28.5  | 30   | 31.5  |                 |
|                                |                                                                                                                                                             | CFM25S360 | 40.9  | 43   | 45.6  |                 |
|                                |                                                                                                                                                             | CFM25S480 | 53.2  | 56   | 59.2  |                 |
| Output Ripple and Noise        | 1. Add a 0.1uF ceramic capacitor and a 10uF aluminum electrolytic capacitor to output<br>2. Oscilloscope is 20MHz band width<br>3. Ambient Temperature=25°C | CFM25S050 |       |      | 50    | mV              |
|                                |                                                                                                                                                             | CFM25S120 |       |      | 120   |                 |
|                                |                                                                                                                                                             | CFM25S150 |       |      | 150   |                 |
|                                |                                                                                                                                                             | CFM25S240 |       |      | 240   |                 |
|                                |                                                                                                                                                             | CFM25S360 |       |      | 360   |                 |
|                                |                                                                                                                                                             | CFM25S480 |       |      | 480   |                 |



## CFM25S Series

| PARAMETER        | NOTES and CONDITIONS                                                                                     | Device    | Min. | Typ. | Max.  | Units   |
|------------------|----------------------------------------------------------------------------------------------------------|-----------|------|------|-------|---------|
| Load Capacitance | 1. $V_{in}=115V_{ac}$ and $230V_{ac}$<br>2. Output is max. load<br>3. Ambient temperature= $25^{\circ}C$ | CFM25S050 |      |      | 81000 | $\mu F$ |
|                  |                                                                                                          | CFM25S120 |      |      | 40900 |         |
|                  |                                                                                                          | CFM25S150 |      |      | 19800 |         |
|                  |                                                                                                          | CFM25S240 |      |      | 6600  |         |
|                  |                                                                                                          | CFM25S360 |      |      | 4000  |         |
|                  |                                                                                                          | CFM25S480 |      |      | 2170  |         |
| Efficiency       | 1. Output is rated load<br>2. Ambient temperature= $25^{\circ}C$<br>3. Input voltage is $230V_{ac}$      | CFM25S050 |      | 81   |       | %       |
|                  |                                                                                                          | CFM25S120 |      | 84   |       |         |
|                  |                                                                                                          | CFM25S150 |      | 85   |       |         |
|                  |                                                                                                          | CFM25S240 |      | 86   |       |         |
|                  |                                                                                                          | CFM25S360 |      | 87   |       |         |
|                  |                                                                                                          | CFM25S480 |      | 87   |       |         |

### ISOLATION CHARACTERISTICS

| PARAMETER            | NOTES and CONDITIONS | Device | Min. | Typ. | Max. | Units     |
|----------------------|----------------------|--------|------|------|------|-----------|
| Input to Output      | 1 minute             | All    |      |      | 3000 | $V_{ac}$  |
| Isolation Resistance | Input to output      | All    | 100  |      |      | $M\Omega$ |

### FEATURE CHARACTERISTICS

| PARAMETER           | NOTES and CONDITIONS  | Device | Min. | Typ. | Max. | Units |
|---------------------|-----------------------|--------|------|------|------|-------|
| Switching Frequency | Pout=max. rated power | All    |      | 65   |      | kHz   |

### GENERAL SPECIFICATIONS

| PARAMETER                      | NOTES and CONDITIONS                                                                                                              | Device    | Min.                                               | Typ. | Max. | Units       |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------|------|------|-------------|
| MTBF                           | I <sub>o</sub> =100%; T <sub>a</sub> =25℃ per MIL-HDBK-217F                                                                       | All       | 500                                                |      |      | k hours     |
| Humidity                       | Non-condensing                                                                                                                    | All       |                                                    |      | 93   | % RH        |
| Shock                          | Meet MIL-STD-810F Table 516.5, Table 516.5-I 10ms, each axis 3 times(±X 、 ±Y 、 ±Z axis)                                           | All       |                                                    | 75   |      | g           |
| Vibration                      | Meet MIL-STD-810F Table 514.5C-VIII, 15~2000Hz, X 、 Y 、 Z axis, 1 hour (each axis),. Total 3 hrs.                                 | All       |                                                    | 4    |      | g           |
| Weight                         |                                                                                                                                   | CFM25S    |                                                    | 38   |      | grams       |
|                                |                                                                                                                                   | CFM25S-E  |                                                    | 75   |      |             |
|                                |                                                                                                                                   | CFM25S-T  |                                                    | 40   |      |             |
|                                |                                                                                                                                   | CFM25S-L  |                                                    | 43   |      |             |
|                                |                                                                                                                                   | CFM25S-EL |                                                    | 80   |      |             |
| Dimensions                     | Blank (PCB mount)                                                                                                                 | All       | 2.000x1.100x0.980Inches<br>(50.80x27.94x24.90mm)   |      |      |             |
|                                | E (Encapsulated)                                                                                                                  | All       | 2.091x1.193x0.976Inches<br>(53.10x30.30x24.80mm)   |      |      |             |
|                                | T (Wafer)                                                                                                                         | All       | 2.776x1.100x0.906 Inches<br>(70.50x27.94x23.00 mm) |      |      |             |
|                                | L (Lead wire)                                                                                                                     | All       | 2.000x1.100x0.906Inches<br>(50.80x27.94x23.00mm)   |      |      |             |
|                                | EL (Encapsulated & Lead wire)                                                                                                     | All       | 2.091x1.193x0.976Inches<br>(53.10x30.30x24.80mm)   |      |      |             |
| Safety                         | Class II, IEC/EN/UL 60950-1, IEC/EN/UL 62368-1, IEC/EN 60335-1<br>L Version & EL Version Safety only approved only IEC/EN 60335-1 |           |                                                    |      |      |             |
| EMC Emission                   | EN55032 Class B, EN61000-3-2:2014, EN61000-3-3:2013, EN61000-6-3:2012, EN61000-6-4:2011, 47 CFR FCC Part 15 Subpart B, Oct.2014   |           |                                                    |      |      | Class B     |
| Conducted Disturbance          | EN55032, EN61000-6-3:2012 Class B, 47 CFR FCC Part 15 Subpart B                                                                   |           |                                                    |      |      | Class B     |
| Radiated Disturbance           | EN55032, EN61000-6-3:2012 Class B, 47 CFR FCC Part 15 Subpart B                                                                   |           |                                                    |      |      | Class B     |
| Harmonic Current Emissions     | EN 61000-3-2:2014                                                                                                                 |           |                                                    |      |      |             |
| Voltage Fluctuations & Flicker | EN 61000-3-3:2013                                                                                                                 |           |                                                    |      |      |             |
| EMC Immunity                   | EN55024, EN61204-3:2000, EN61000-6-1:2007, EN61000-6-2:2005                                                                       |           |                                                    |      |      |             |
| Electrostatic Discharge (ESD)  | IEC 61000-4-2:2008, Air Discharge: ±8kV, Contact Discharge: ±4kV                                                                  |           |                                                    |      |      | Criterion A |



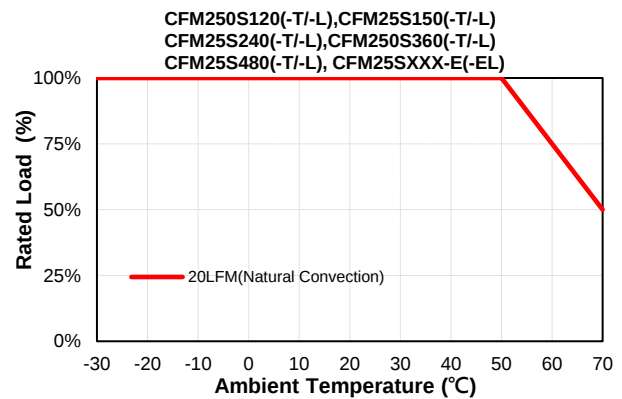
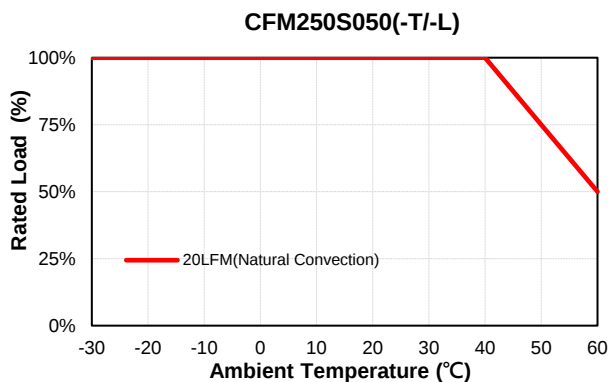
# CFM25S Series

## GENERAL SPECIFICATIONS

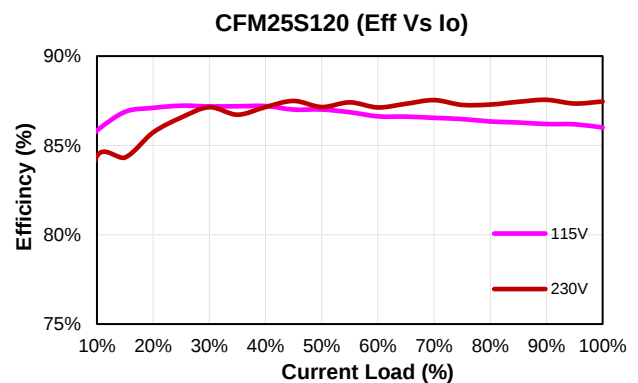
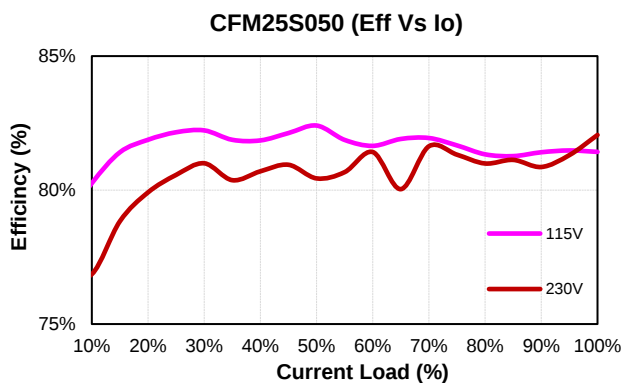
|                                                  |                                                                              |                                         |
|--------------------------------------------------|------------------------------------------------------------------------------|-----------------------------------------|
| Radio-Frequency, Continuous Radiated Disturbance | IEC 61000-4-3:2010                                                           | Criterion A                             |
| Electrical Fast Transient (EFT)                  | IEC 61000-4-4:2012, $\pm 0.5\text{kV}$ , $\pm 1\text{kV}$ , $\pm 2\text{kV}$ | Criterion A                             |
| Surge                                            | IEC 61000-4-5:2014, L-N: $\pm 0.5\text{kV}$ , $\pm 1\text{kV}$               | Criterion A                             |
| Conducted Disturbances, Induced by RF Fields     | IEC 61000-4-6:2013                                                           | Criterion A                             |
| Power Frequency Magnetic Field                   | IEC 61000-4-8:2009                                                           | Criterion A                             |
| Voltage Dips                                     | IEC 61000-4-11:2004, Dip: 30% Reduction, Dip >95% Reduction                  | Criterion A                             |
| Voltage Interruptions                            | IEC 61000-4-11:2004, >95% Reduction                                          | Criterion B                             |
| Application Note Link                            |                                                                              | <a href="#">CFM25S Series App Notes</a> |

## CHARACTERISTIC CURVE

### Power Derating Curve



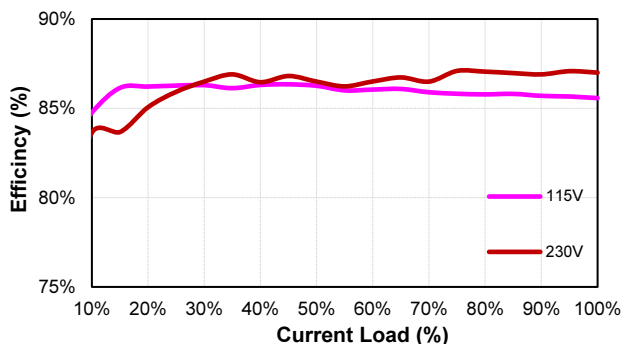
### Performance Data



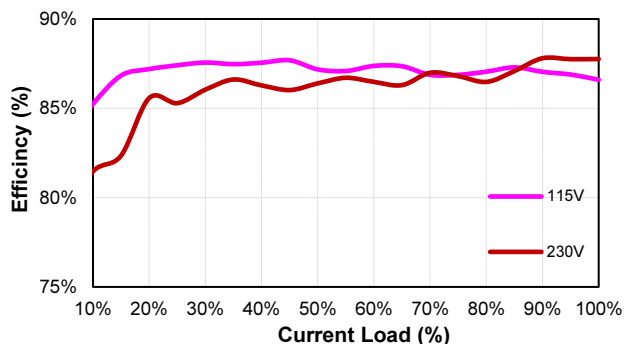


# CFM25S Series

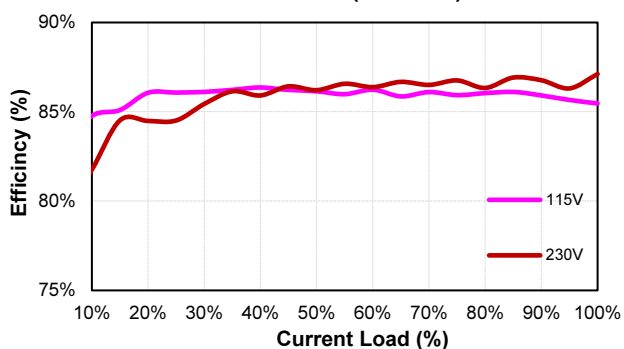
CFM25S150 (Eff Vs Io)



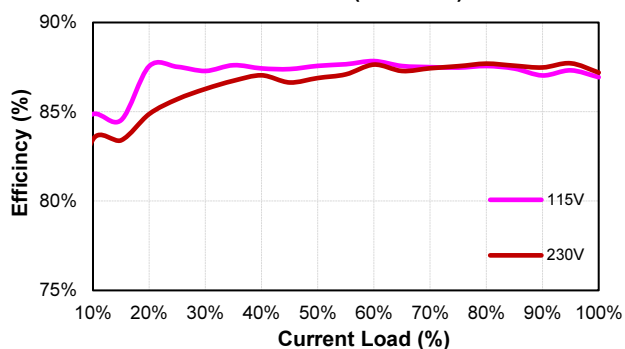
CFM25S240 (Eff Vs Io)



CFM25S360 (Eff Vs Io)

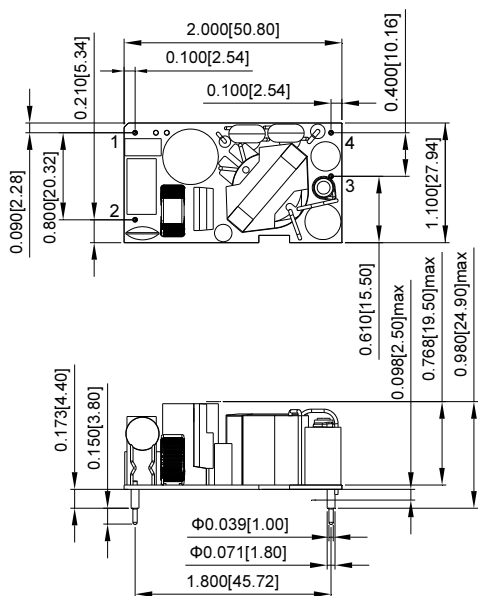


CFM25S480 (Eff Vs Io)

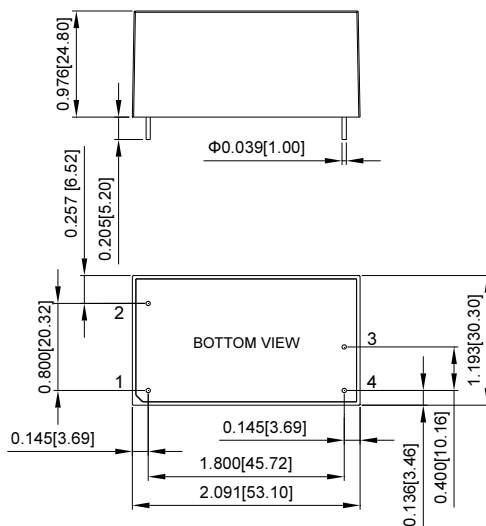


## MECHANICAL SPECIFICATION

CFM25SXXX



CFM25SXXX-E



PIN CONNECTION

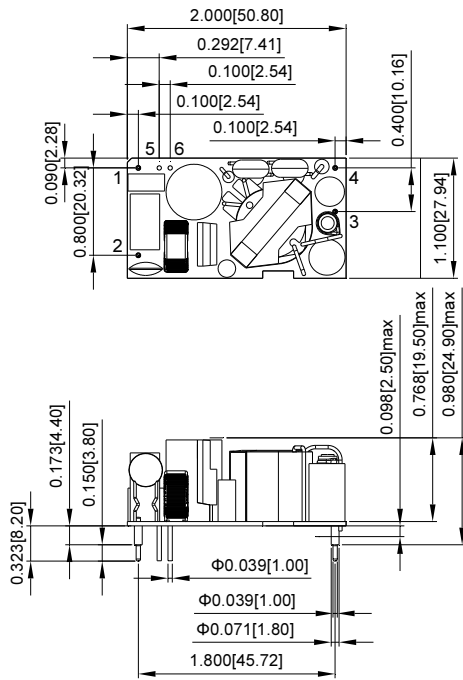
| Pin | Function |
|-----|----------|
| 1   | ACL      |
| 2   | ACN      |
| 3   | +Vout    |
| 4   | -Vout    |

All Dimensions are in inches[mm]  
Tolerance: Inches: X.XXX±0.02  
Millimeters: X.XX±0.5

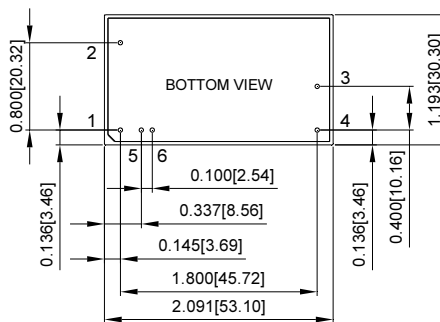
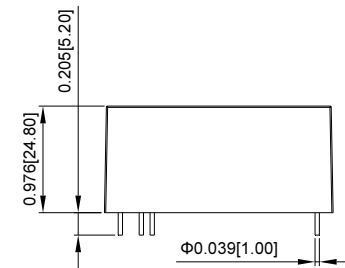


# CFM25S Series

CFM25SXXX PL



CFM25SXXX-E PL

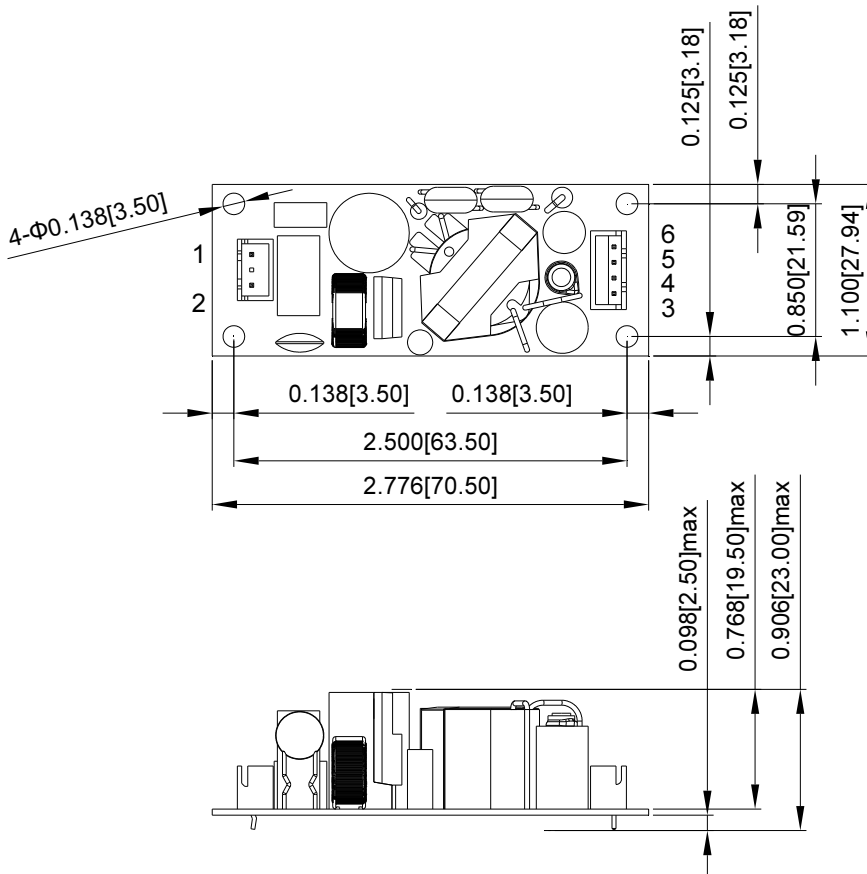


PIN CONNECTION

| Pin | Function      |
|-----|---------------|
| 1   | ACL           |
| 2   | ACN           |
| 3   | +Vout         |
| 4   | -Vout         |
| 5   | BC+(Optional) |
| 6   | BC-(Optional) |

All Dimensions are in inches[mm]  
Tolerance: Inches: X.XXX±0.02  
Millimeters: X.XX±0.5

CFM25SXXX-T



PIN CONNECTION

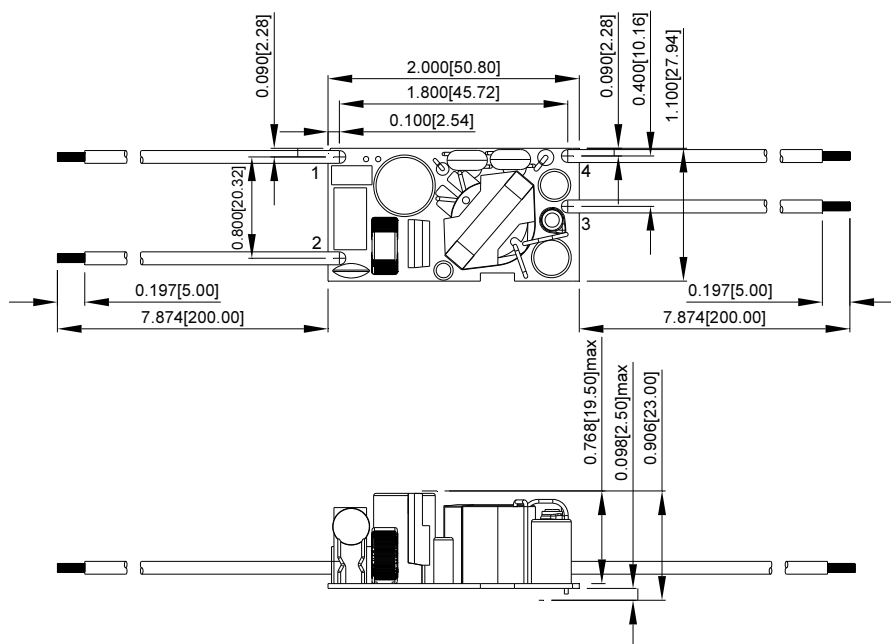
| Pin | Function |
|-----|----------|
| 1   | ACL      |
| 2   | ACN      |
| 3   | +Vout    |
| 4   | +Vout    |
| 5   | -Vout    |
| 6   | -Vout    |

All Dimensions are in inches[mm]  
Tolerance: Inches: X.XXX±0.02  
Millimeters: X.XX±0.5



# CFM25S Series

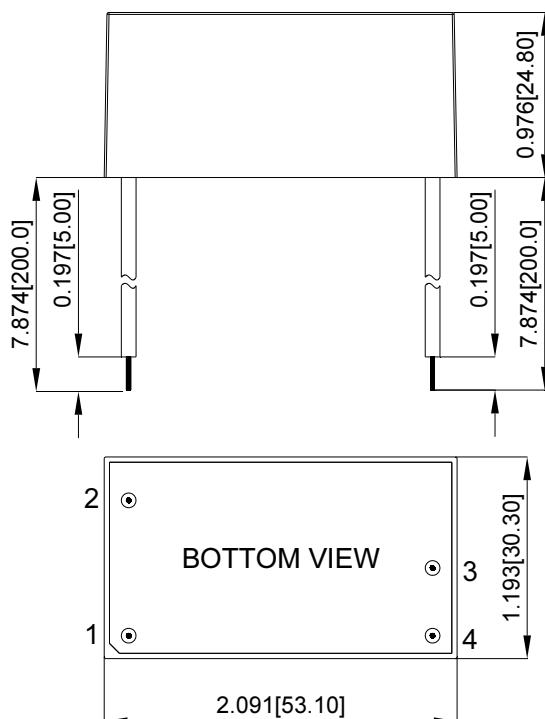
## CFM25SXXX-L



| PIN CONNECTION |          |
|----------------|----------|
| Pin            | Function |
| 1 (Brown)      | ACL      |
| 2 (Blue)       | ACN      |
| 3 (Red)        | +Vout    |
| 4 (Black)      | -Vout    |

Cable: 20AWG/UL 1007,  $\Phi 1.8 \pm 0.2\text{mm}$   
 All Dimensions In Inches[mm]  
 Tolerance Inches:x.xxx=  $\pm 0.02$   
 Millimeters: x.xx =  $\pm 0.5$

## CFM25SXXX-EL



| CONNECTION |          |
|------------|----------|
| Pin        | Function |
| 1 (Brown)  | ACL      |
| 2 (Blue)   | ACN      |
| 3 (Red)    | +Vout    |
| 4 (Black)  | -Vout    |

Cable: 20AWG/UL 1007,  $\Phi 1.8 \pm 0.2\text{mm}$   
 All Dimensions In Inches[mm]  
 Tolerance Inches:x.xxx=  $\pm 0.02$   
 Millimeters: x.xx =  $\pm 0.5$

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

***Click to view similar products for [AC/DC Power Modules](#) category:***

***Click to view products by [Cincon](#) manufacturer:***

Other Similar products are found below :

[HP01S0500WI](#) [HP01S1200WI](#) [HP01S2400WI](#) [HP03S2400WJ](#) [ZP03S1200WE](#) [ZP05S2400WB](#) [AMEOF550-24SHAMJZ-FB](#) [AMEOF550-48SHAMJZ-FB](#) [HP02S1200WI](#) [ZP10S2400W](#) [ZP03S0500WE](#) [AMEOF450-48SHAMJZ-FB](#) [AMEL15-3S277HAVZ-B](#) [EZAC-R11-QE8](#) [LD10-20B12](#) [LHE05-20D0524-01](#) [LD10-23B24R2](#) [LD05-23B12](#) [LDE10-20B12](#) [LDE20-20B12](#) [LD10-23B12R2](#) [IRM-20-12](#) [LH10-23B05R2](#) [LHE05-20D0505-01](#) [LHE20-20D0524-03](#) [IRM-5-24](#) [IRM-10-12](#) [LH10-10D0524-02](#) [LH10-10B24](#) [LH10-10B12](#) [LH10-23B12R2](#) [LHE10-20D0512-02](#) [LH10-23B24R2](#) [LHE20-20D0512-06](#) [IRM-5-12](#) [LD10-20B24](#) [LD10-20B05](#) [LDE15-20B12](#) [LDE10-20B05](#) [LD05-20B12](#) [LDE10-20B24](#) [LD10-23B05R2](#) [LH15-23B12R2](#) [IRM-10-5](#) [LH25-23B24R2](#) [IRM-5-5](#) [LH10-13B24](#) [LHE10-20D0524-02](#) [LHE10-20B12](#) [LH10-10B05](#)