

# FKCO8W SERIES

DC / DC Single & Dual Output: 8 Watts



## Features

- 4:1 wide Input range
- 9~36V & 18~75V input voltage options
- Single & Dual outputs
- Fixed switching frequency 300KHz
- Standard 24 pin DIP package
- **SMD** option
- High efficiency up to 85%
- Regulated output & Short circuit protection
- 1600V isolation
- Five sided continuous copper shield

## Specifications:

|   |  |                               |  |
|---|--|-------------------------------|--|
| <b>Input Voltage</b>                                  | 24VDC ( 9 ~ 36 )<br>48VDC ( 18 ~75 )   | <b>Efficiency</b>             | Model dependant 83 ~ 87%                             |
| <b>Input Filter</b>                                   | Pi type  | <b>Isolation</b>              | 1600VDC  |
| <b>Input Surge Voltage.</b><br>( 100mS )              | 24V: 50VDC. 48V: 100VDC  | <b>Isolation Cap.</b>         | 1500pF   |
| <b>Input Reflected<br/>Ripple Current</b>             | 20mA pk-pk ( @ nominal input & 100% load   | <b>Switching Freq.</b>        | 300KHz   |
| <b>Start Up time</b>                                  | 450mS constant resistive load  | <b>Safety</b>                 | EN60950-1, UL60950-1                                 |
| <b>Remote ON/OFF</b><br>( Positive logic )            | DC-DC ON Open or 3.5V < Vr < 12V<br>DC-DC OFF Short or 0V < Vr < 1.2V<br>Input current of remote control pin: 0.5mA<br>Remote off state input current: 2.5mA | <b>Case Material</b>          | Nickel-coated copper                                 |
| <b>Output power</b>                                   | 8 watts  | <b>Base Material</b>          | Non-conductive black plastic                         |
| <b>Voltage Accuracy</b>                               | ±1%  | <b>Potting</b>                | Epoxy UL94-V0  |
| <b>Minim Load</b>                                     | Zero   | <b>Dimensions</b>             | 31.8 x 20.3 x 10.2mm                                 |
| <b>Line Regulation</b>                                | ±0.2%  | <b>Weight</b>                 | 18g  |
| <b>Load Regulation</b>                                | Single ±0.5% , Dual ±1% ( 0% -100% load )  | <b>MTBF</b>                   | 1.078 x 10 <sup>6</sup> Hrs                          |
| <b>Cross Regulation</b>                               | ±5% Asymmetrical load: 25-100% load )  | <b>Operating Temp</b>         | -40°C to +74°C ( with derating )                     |
| <b>Ripple &amp; noise</b>                             | See table. 20MHZ bandwidth   | <b>Case Temp</b>              | +100°C maximum case temperature                      |
| <b>Temp. Coefficient</b>                              | ±0.02% / °C  | <b>Thermal Impedance</b>      | 20°C / watt  |
| <b>Transient Response</b>                             | 200uS ( 25% load step change )   | <b>Thermal shock</b>          | MIL-STD-810F   |
| <b>Over Voltage<br/>Protection</b><br>( Single Only ) | 3.3V: 3.9V<br>5V: 6.2V<br>12V: 15V<br>15V: 18V   | <b>Vibration</b>              | 10-55Hz, 10G, 30min along X, Y,Z                     |
| <b>Overload Protection</b>                            | Typically 150% of load   | <b>Humidity</b>               | 5-95% RH   |
| <b>Short Circuit<br/>protection</b>                   | Continuous hiccup mode   | <b>EMC</b>                    | EN55022 Class A<br>Consult office for Class B design |
|   |  | <b>ESD</b>                    | EN61000-4-2  |
|   |  | <b>Radiated<br/>Immunity</b>  | EN61000-4-3  |
|   |  | <b>Fast Transients</b>        | EN61000-4-4  |
|   |  | <b>Surge</b>                  | EN61000-4-5  |
|   |  | <b>Conducted<br/>Immunity</b> | EN61000-4-6  |

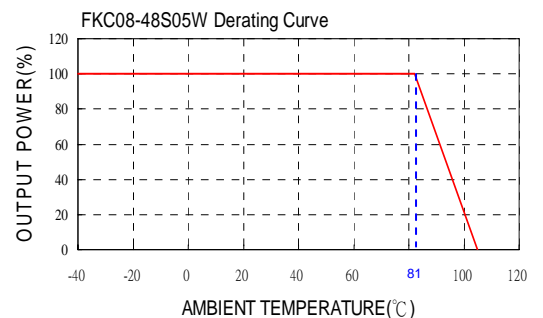
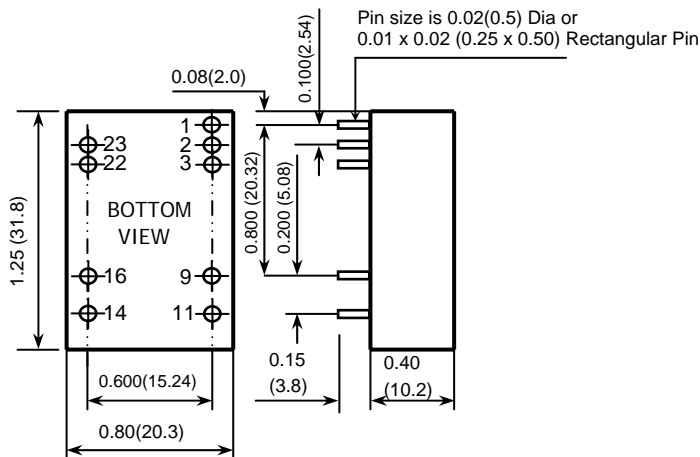
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DC / DC Single & Dual Output: 8 Watts

| Model         | Input V   | Output |         | Ripple & Noise | Input Current |           | Eff (%) | Capacitor Load max | Power W |
|---------------|-----------|--------|---------|----------------|---------------|-----------|---------|--------------------|---------|
|               |           | V      | A       |                | No load       | Full Load |         |                    |         |
| FKC08-24S3P3W | 9 – 36 V  | 3.3 V  | 2400mA  | 50mVp-p        | 40mA          | 407mA     | 85      | 1330uF             | 7.9W    |
| FKC08-24S05W  | 9 – 36 V  | 5 V    | 1600mA  | 50mVp-p        | 40mA          | 402mA     | 87      | 1330uF             | 8W      |
| FKC08-24S12W  | 9 – 36 V  | 12 V   | 666mA   | 50mVp-p        | 25mA          | 407mA     | 86      | 288uF              | 8W      |
| FKC08-24S15W  | 9 – 36 V  | 15 V   | 533mA   | 50mVp-p        | 25mA          | 407mA     | 86      | 200uF              | 8W      |
| FKC08-24D05W  | 9 – 36 V  | ± 5 V  | ± 800mA | 50mVp-p        | 20mA          | 417mA     | 84      | ± 900uF            | 8W      |
| FKC08-24D12W  | 9 – 36 V  | ± 12 V | ± 333mA | 50mVp-p        | 25mA          | 407mA     | 86      | ± 133uF            | 8W      |
| FKC08-24D15W  | 9 – 36 V  | ± 15 V | ± 267mA | 50mVp-p        | 25mA          | 407mA     | 86      | ± 90uF             | 8W      |
| FKC08-48S3P3W | 18 – 75 V | 3.3 V  | 2400mA  | 50mVp-p        | 20mA          | 204mA     | 85      | 1330uF             | 7.9W    |
| FKC08-48S05W  | 18 – 75 V | 5 V    | 1600mA  | 50mVp-p        | 20mA          | 201mA     | 87      | 1330uF             | 8W      |
| FKC08-48S12W  | 18 – 75 V | 12 V   | 666mA   | 50mVp-p        | 13mA          | 201mA     | 87      | 288uF              | 8W      |
| FKC08-48S15W  | 18 – 75 V | 15 V   | 533mA   | 50mVp-p        | 13mA          | 198mA     | 88      | 200uF              | 8W      |
| FKC08-48D05W  | 18 – 75 V | ± 5 V  | ± 800mA | 50mVp-p        | 10mA          | 208mA     | 84      | ± 900uF            | 8W      |
| FKC08-48D12W  | 18 – 75 V | ± 12 V | ± 333mA | 50mVp-p        | 13mA          | 201mA     | 87      | ± 133uF            | 8W      |
| FKC08-48D15W  | 18 – 75 V | ± 15 V | ± 267mA | 50mVp-p        | 13mA          | 201mA     | 87      | ± 90uF             | 8W      |

**Note:**

1. Values specified at nominal input voltage and full load
2. The ON/OFF control pin voltage is referenced to -Vin.
3. The FKCO8W series can meet EN55022 Class A with parallel an external capacitor to the input pins.  
Recommend : 24Vin : 1μF/50V 1210 MLCC .48Vin : 0.47μF/100V 1812 MLCC.
4. An external filter capacitor is required if the module has to meet EN61000-4-5.  
The filter capacitor suggest: Nippon chemi-con KY series, 220μF/100V, ESR 48mΩ.



| Pin Assignmnet |         |          |     |          |         |
|----------------|---------|----------|-----|----------|---------|
| Pin            | Single  | Dual     | Pin | Single   | Dual    |
| 1              | Ctrl    | Ctrl     |     |          |         |
| 2              | - Input | - Input  | 23  | +Input   | +Input  |
| 3              | - Input | - Input  | 22  | +Input   | +Input  |
| 9              | NC      | COM      | 16  | - Output | COM     |
| 11             | NC      | - Output | 14  | +Output  | +Output |