

FKCO8 SERIES

DC / DC Single & Dual Output: 8 Watts



Features

- 2:1 Input voltage range
- 4:1 Input option (**FKCO8W**)
- 12V, 24V & 48V 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:

| | |
|--|--|
| Input Voltage | 12VDC (9 ~18) 24VDC (18 ~ 36) 48VDC (36 ~75) |
| Input Filter | Pi type |
| Input Surge Voltage. (100mS) | 12V : 36VDC, 24V: 50VDC. 48V: 100VDC |
| Input Reflected Ripple Current | 20mA pk-pk (@ nominal input & 100% load |
| Start Up time | 700mS constant resistive load |
| Remote ON/OFF (Positive logic) | DC-DC ON Open or 3.5V < Vr < 12V DC-DC OFF Short or 0V < Vr < 1.2V Input current of remote control pin: 0.5mA Remote off state input current: 2.5mA |
| Output power | 8 watts |
| Voltage Accuracy | ±1% |
| Minim Load | Zero |
| Line Regulation | ±0.2% |
| Load Regulation | Single ±0.5% , Dual ±1% (0% -100% load) |
| Cross Regulation | ±5% Asymmetrical load: 25-100% load) |
| Ripple & noise | See table. 20MHZ bandwith |
| Temp. Coefficient | ±0.02% / °C |
| Transient Response | 200uS (25% load step change) |
| Overload Protection | Typically 150% of load |
| Short Circuit protection | Continuous hiccup mode |

| | |
|-------------------------------|--|
| Efficiency | Model dependant 83 ~ 87% |
| Isolation | 1600VDC |
| Isolation Cap. | 300pF |
| Switching Freq. | 300KHz |
| Safety | EN60950-1, UL60950-1 |
| Case Material | Nickel-coated copper |
| Base Material | Non-conductive black plastic |
| Potting | Epoxy UL94-V0 |
| Dimensions | 31.8 x 20.3 x 10.2mm |
| Weight | 18g |
| MTBF | 3.053 x 10 ⁶ Hrs |
| Operating Temp | -40°C to +85°C (with derating) |
| Case Temp | +100°C maximum case temperare |
| Thermal Impedance | 20°C / watt |
| Thermal shock | MIL-STD-810F |
| Vibration | 10-55Hz, 10G, 30min along X, Y,Z |
| Humidity | 5-95% RH |
| EMC | EN55022 Class A Consult office for Class B design |
| ESD | EN61000-4-2 |
| Radiated Immunity | EN61000-4-3 |
| Fast Transients | EN61000-4-4 |
| Surge | EN61000-4-5 |
| Conducted Immunity | EN61000-4-6 |

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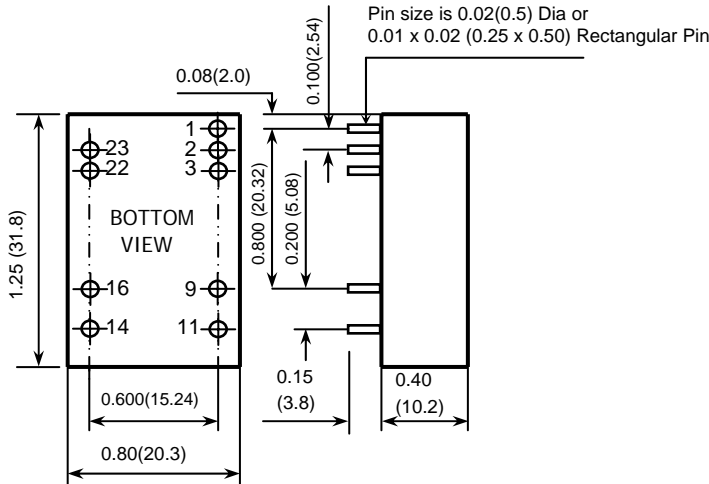
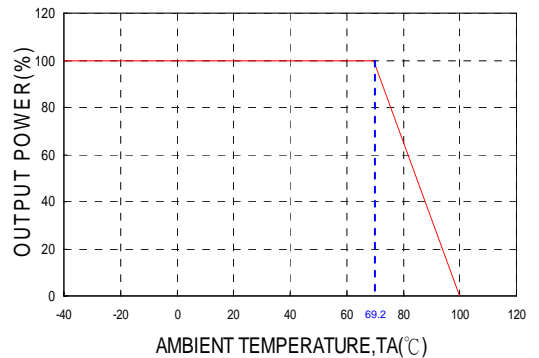
DC / DC Single & Dual Output: 8 Watts

| Model | Input V | Output | | Ripple & Noise | Input Current | | Eff (%) | Capacitor Load max | Power W |
|-------------|-----------|--------|---------|----------------|---------------|-----------|---------|--------------------|---------|
| | | V | A | | No load | Full load | | | |
| FKC08-12S33 | 9 – 18V | 3.3 V | 2000mA | 50mVp-p | 10mA | 724mA | 80 | 3300uF | 6.6W |
| FKC08-12S05 | 9 – 18 V | 5 V | 1500mA | 50mVp-p | 15mA | 791mA | 83 | 1600uF | 7.5W |
| FKC08-12S12 | 9 – 18 V | 12 V | 666mA | 50mVp-p | 13mA | 792mA | 88 | 350uF | 8W |
| FKC08-12S15 | 9 – 18 V | 15 V | 533mA | 50mVp-p | 20mA | 802mA | 87 | 240uF | 8W |
| FKC08-12D05 | 9 – 18 V | ± 5 V | ± 800mA | 50mVp-p | 15mA | 843mA | 83 | ± 1000uF | 8W |
| FKC08-12D12 | 9 – 18 V | ± 12 V | ± 333mA | 50mVp-p | 20mA | 802mA | 87 | ± 160uF | 8W |
| FKC08-12D15 | 9 – 18 V | ± 15 V | ± 267mA | 50mVp-p | 20mA | 824mA | 85 | ± 100uF | 8W |
| FKC08-24S33 | 18 – 36 V | 3.3 V | 2000mA | 50mVp-p | 10mA | 362mA | 80 | 3300uF | 8W |
| FKC08-24S05 | 18 – 36 V | 5 V | 1500mA | 50mVp-p | 30mA | 396mA | 83 | 1600uF | 6.6W |
| FKC08-24S12 | 18 – 36 V | 12 V | 666mA | 50mVp-p | 13mA | 406mA | 86 | 350uF | 7.5W |
| FKC08-24S15 | 18 – 36 V | 15 V | 533mA | 50mVp-p | 15mA | 411mA | 85 | 240uF | 8W |
| FKC08-24D05 | 18 – 36 V | ± 5 V | ± 800mA | 50mVp-p | 15mA | 427mA | 82 | ± 1000uF | 8W |
| FKC08-24D12 | 18 – 36 V | ± 12 V | ± 333mA | 50mVp-p | 15mA | 406mA | 86 | ± 160uF | 8W |
| FKC08-24D15 | 18 – 36 V | ± 15 V | ± 267mA | 50mVp-p | 13mA | 411mA | 85 | ± 100uF | 8W |
| FKC08-48S33 | 36 – 75 V | 3.3 V | 2000mA | 50mVp-p | 7mA | 181mA | 80 | 3300uF | 6.6W |
| FKC08-48S05 | 36 – 75 V | 5 V | 1500mA | 50mVp-p | 8mA | 198mA | 83 | 1600uF | 7.5W |
| FKC08-48S12 | 36 – 75 V | 12 V | 666mA | 50mVp-p | 10mA | 203mA | 86 | 350uF | 8W |
| FKC08-48S15 | 36 – 75 V | 15 V | 533mA | 50mVp-p | 10mA | 203mA | 86 | 240uF | 8W |
| FKC08-48D05 | 36 – 75 V | ± 5 V | ± 800mA | 50mVp-p | 8mA | 205mA | 85 | ± 1000uF | 8W |
| FKC08-48D12 | 36 – 75 V | ± 12 V | ± 333mA | 50mVp-p | 8mA | 200mA | 87 | ± 160uF | 8W |
| FKC08-48D15 | 36 – 75 V | ± 15 V | ± 267mA | 50mVp-p | 7mA | 201mA | 87 | ± 100uF | 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 FKC08 series can meet EN55022 Class A with parallel an external capacitor to the input pins.
Recommend: 12Vin : 4.7µF/25V 1210 MLCC . 24Vin : N/A . 48Vin : N/A.
4. An external filter capacitor is required if the module has to meet EN61000-4-5.
5. The filter capacitor suggest: Nippon chemi-con KY series, 220µF/100V, ESR 48mΩ.

FKC08-48S05 Derating Curve



| 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 |