

FKC12 SERIES

DC / DC Single & Dual Output: 12 Watts



Features

- 2:1 Input voltage range
- 4:1 Input option (**FKC12W**)
- 12V, 24V & 48V input voltage options
- Single & Dual outputs
- Fixed switching frequency 400KHz
- 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	450mS 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	±1.2%
Minim Load	Zero
Line Regulation	Single ±0.2% Dual ±0.5%
Load Regulation	Single ±0.5% , Dual ±1% (0% -100% load)
Cross Regulation	±5% Asymmetrical load: 25-100% load)
Ripple & noise	See table. 20MHZ bandwidth
Temp. Coefficient	±0.02% / °C
Transient Response	250uS (25% load step change)
Over voltage Protection	2.5V: 3.9V 3.3V: 3.9V 5.1V: 6.2V 12V: 15V 15V: 18V
Overload Protection	Typically 150% of load
Short Circuit protection	Continuous hiccup mode

Efficiency	Model dependant 83 ~ 87%
Isolation	1600VDC
Isolation Cap.	1200pF
Switching Freq.	400KHz
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	2.75 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

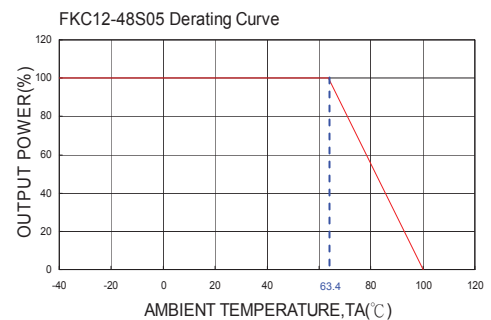
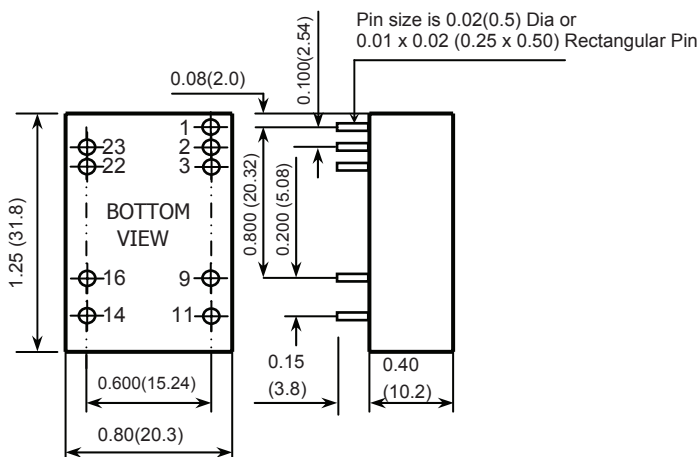
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Model	Input V	Output		Ripple & Noise	Input Current		Eff (%)	Capacitor Load max	Power W
		V	A		No load	Full load			
FKC12-12S2P5	9 – 18 V	2.5 V	3500mA	85mVp-p	50mA	935mA	82	2000uF	8.7W
FKC12-12S3P3	9 – 18 V	3.3 V	3500mA	85mVp-p	60mA	1203mA	84	2000uF	12W
FKC12-12S05	9 – 18 V	5.1 V	2400mA	85mVp-p	53A	1244mA	86	2000uF	12W
FKC12-12S12	9 – 18 V	12 V	1000mA	85mVp-p	15mA	1219mA	86	430uF	12W
FKC12-12S15	9 – 18 V	15 V	800mA	85mVp-p	17mA	1219mA	86	300uF	12W
FKC12-12D05	9 – 18 V	± 5 V	± 1200mA	85mVp-p	24mA	1282mA	82	± 1250uF	12W
FKC12-12D12	9 – 18 V	± 12 V	± 500mA	85mVp-p	19mA	1205mA	87	± 200uF	12W
FKC12-12D15	9 – 18 V	± 15 V	± 400mA	85mVp-p	24mA	1205mA	87	± 120uF	12W
FKC12-24S2P5	18 – 36 V	2.5 V	3500mA	85mVp-p	36mA	461mA	83	2000uF	8.7W
FKC12-24S3P3	18 – 36 V	3.3 V	3500mA	85mVp-p	36mA	594mA	85	2000uF	12W
FKC12-24S05	18 – 36 V	5.1 V	2400mA	85mVp-p	35mA	614mA	87	2000uF	12W
FKC12-24S12	18 – 36 V	12 V	1000mA	85mVp-p	16mA	602mA	87	430uF	12W
FKC12-24S15	18 – 36 V	15 V	800mA	85mVp-p	17mA	602mA	87	300uF	12W
FKC12-24D05	18 – 36 V	± 5 V	± 1200mA	85mVp-p	15mA	633mA	83	± 1250uF	12W
FKC12-24D12	18 – 36 V	± 12 V	± 500mA	85mVp-p	15mA	595mA	88	± 200uF	12W
FKC12-24D15	18 – 36 V	± 15 V	± 400mA	85mVp-p	18mA	595mA	88	± 120uF	12W
FKC12-48S2P5	36 – 75 V	2.5 V	3500mA	85mVp-p	10mA	231mA	83	2000uF	8.7W
FKC12-48S3P3	36 – 75 V	3.3 V	3500mA	85mVp-p	14mA	297mA	85	2000uF	12W
FKC12-48S05	36 – 75 V	5.1 V	2400mA	85mVp-p	23mA	307mA	87	2000uF	12W
FKC12-48S12	36 – 75 V	12 V	1000mA	85mVp-p	11mA	301mA	87	430uF	12W
FKC12-48S15	36 – 75 V	15 V	800mA	85mVp-p	5mA	301mA	87	300uF	12W
FKC12-48D05	36 – 75 V	± 5 V	± 1200mA	85mVp-p	6mA	316mA	83	± 1250uF	12W
FKC12-48D12	36 – 75 V	± 12 V	± 500mA	85mVp-p	6mA	297mA	88	± 200uF	12W
FKC12-48D15	36 – 75 V	± 15 V	± 400mA	85mVp-p	6mA	297mA	88	± 120uF	12W

Note

- Specifications at nominal input and full load
- The ON/OFF control pin voltage is referenced to -Vin.
- The FKC12 series can meet EN55022 Class A with parallel an external capacitor to the input pins.
Recommend: 12Vin : 6.8µF/50V 1812 MLCC . 24Vin : 4.7µF/50V 1812 MLCC .48Vin : 2.2µF/100V 1812 MLCC.
- An external filter capacitor is required if the module has to meet EN61000-4-5.
The filter capacitor Nippon chemi-con KY series, 220µF/100V, ESR 48mΩ



Pin Assignment					
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