

# FKC12W SERIES

DC / DC Single & Dual Output: 12 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 ) 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> ( 100mS )	24V: 50VDC. 48V: 100VDC	<b>Isolation Cap.</b>	1500pF
<b>Input Reflected Ripple Current</b>	20mA pk-pk ( @ nominal input & 100% load	<b>Switching Freq.</b>	400KHz
<b>Start Up time</b>	450mS constant resistive load	<b>Safety</b>	EN60950-1, UL60950-1
<b>Remote ON/OFF</b> ( Positive logic )	DC-DC ON Open or 3.0V < 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	<b>Case Material</b>	Nickel-coated copper
<b>Output power</b>	12 watts	<b>Base Material</b>	Non-conductive black plastic
<b>Voltage Accuracy</b>	±1.2%	<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>	Single ±0.2% Dual ±0.5%	<b>Weight</b>	18g
<b>Load Regulation</b>	Single ±0.5% , Dual ±1% ( 0% -100% load )	<b>MTBF</b>	8.745 x 10 <sup>6</sup> Hrs
<b>Cross Regulation</b>	±5% Asymmetrical load: 25-100% load )	<b>Operating Temp</b>	-40°C to +69°C ( without derating )
<b>Ripple &amp; noise</b>	See table. 20MHZ bandwidth	<b>Case Temp</b>	+100°C maximum case temperare
<b>Temp. Coefficient</b>	±0.02% / °C	<b>Thermal Impedance</b>	20°C / watt
<b>Transient Response</b>	250uS ( 25% load step change )	<b>Thermal shock</b>	MIL-STD-810F
<b>Over voltage Protection</b>	3.3V: 3.9V 5.1V: 6.2V 12V: 15V 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 protection</b>	Continuous hiccup mode	<b>EMC</b>	EN55022 Class A Consult office for Class B design
		<b>ESD</b>	EN61000-4-2
		<b>Radiated Immunity</b>	EN61000-4-3
		<b>Fast Transients</b>	EN61000-4-4
		<b>Surge</b>	EN61000-4-5
		<b>Conducted Immunity</b>	EN61000-4-6

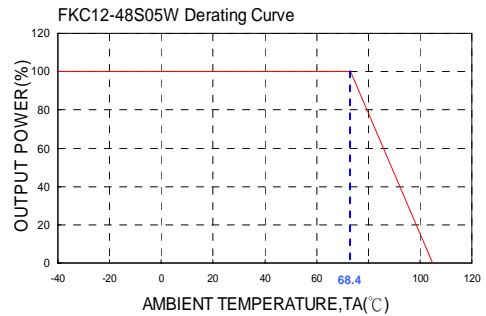
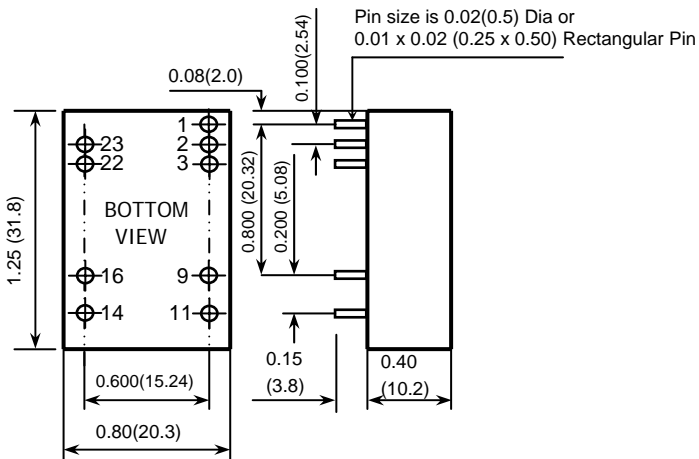
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Model	Input V	Output		Output Ripple & Noise	Input Current		Eff (%)	Capacitor Load max	Power W
		V	A		No load	Full Load			
FKC12-24S3P3W	9 – 36 V	3.3 V	3500mA	85mVp-p	55mA	602mA	84	2000uF	12W
FKC12-24S05W	9 – 36 V	5.1 V	2400mA	85mVp-p	55mA	614mA	87	2000uF	12W
FKC12-24S12W	9 – 36 V	12 V	1000mA	85mVp-p	13mA	602mA	87	430uF	12W
FKC12-24S15W	9 – 36 V	15 V	800mA	85mVp-p	11mA	602mA	87	300uF	12W
FKC12-24D05W	9 – 36 V	± 5 V	± 1200mA	85mVp-p	15mA	625mA	84	± 1250uF	12W
FKC12-24D12W	9 – 36 V	± 12 V	± 500mA	85mVp-p	12mA	602mA	87	± 200uF	12W
FKC12-24D15W	9 – 36 V	± 15 V	± 400mA	85mVp-p	20mA	602mA	87	± 120uF	12W
FKC12-48S3P3W	18 – 75 V	3.3 V	3500mA	85mVp-p	17mA	301mA	84	2000uF	12W
FKC12-48S05W	18 – 75 V	5.1 V	2400mA	85mVp-p	20mA	307mA	87	2000uF	12W
FKC12-48S12W	18 – 75 V	12 V	1000mA	85mVp-p	6mA	302mA	87	430uF	12W
FKC12-48S15W	18 – 75 V	15 V	800mA	85mVp-p	6mA	298mA	88	300uF	12W
FKC12-48D05W	18 – 75 V	± 5 V	± 1200mA	85mVp-p	7mA	309mA	85	± 1250uF	12W
FKC12-48D12W	18 – 75 V	± 12 V	± 500mA	85mVp-p	7mA	301mA	87	± 200uF	12W
FKC12-48D15W	18 – 75 V	± 15 V	± 400mA	85mVp-p	7mA	301mA	87	± 120uF	12W

**Note**

1. Typical values at nominal input voltage and full load.
2. The ON/OFF control pin voltage is referenced to -Vin.
3. 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.
4. 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