



APPLICATIONS

Wireless Network
Telecom/Datacom
Industry Control System
Measurement Equipment
Semiconductor Equipment

FEATURES

- HIGH POWER DENSITY WITH 15WATTS OUTPUT POWER
- OUTPUT CURRENT UP TO 4A
- HIGH EFFICIENCY UP TO 91%
- LOW STANDBY POWER DISSIPATION
- 2:1 WIDE INPUT VOLTAGE RANGE
- INPUT UNDER VOLTAGE LOCKOUT
- SIX-SIDED CONTINUOUS SHIELD
- EMI MEETS EN55022 CLASS A WITHOUT EXTERNAL FILTER
- FIXED SWITCHING FREQUENCY
- STANDARD 1.25 X 0.80 X 0.40 INCH AND 24 PIN DIP PACKAGE
- I/O ISOLATION 1600 VDC
- CE MARK MEETS 2006/95/EC, 2011/95/EC AND 2004/108/EC
- SAFETY MEETS UL60950-1, EN60950-1 AND IEC60950-1
- COMPLIANT TO RoHS EU DIRECTIVE 2011/65/EU

DESCRIPTION

The FKC15 series offer 15 watts of output power from a package in an IC compatible 24pin DIP configuration. FKC15 series have 2:1 wide input voltage of 9~18, 18~36 and 36~75VDC. The FKC15 have features 1600VDC of isolation, short circuit protection and as well as six sided shielding.

TECHNICAL SPECIFICATION

All specifications are typical at nominal input, full load and 25°C otherwise noted

OUTPUT SPECIFICATIONS			
Output power			15 Watts, max.
Voltage accuracy			±1.0%,max.
Minimum load			0%
Line regulation	LL to HL at Full Load	Single	± 0.2%
		Dual	± 0.5%
Load regulation	No Load to Full Load	Single	± 0.5%
		Dual	± 1%
	10% Load to 90% Load	Single	± 0.3%
		Dual	± 0.8%
Cross regulation (Dual)	Asymmetrical load 25% / 100% FL		± 5%
Ripple and noise (Note 5)	20MHz bandwidth		See table
Temperature coefficient			±0.02% / °C, max.
Transient response recovery time	25% load step change		250µs
Over voltage protection	3.3VDC output		3.9VDC
	Zener diode clamp		6.2VDC
	(Single only)		15VDC
	15VDC output		18VDC
Over load protection	% of FL at nominal input		150%
Short circuit protection	Continuous, automatics recovery		
GENERAL SPECIFICATIONS			
Efficiency	See table		
Isolation voltage	Input to Output	1600VDC, min.	1minute
	Input (Output) to Case	1600VDC, min.	1minute
Isolation resistance	500VDC	10 ⁹ ohms, min.	
Isolation capacitance	2000pF, max.		
Switching frequency	330kHz±10%		
Design meet safety standard	IEC60950-1, UL60950-1, EN60950-1		
Case material	Nickel-coated copper		
Base material	FR4 PCB		
Potting material	Silicone(UL94-V0)		
Dimensions	1.25 X 0.80 X 0.40 Inch (31.8 X 20.3 X 10.2 mm)		
Weight	14.4g (0.51oz)		
MTBF (Note 1)	MIL-HDBK-217F	1.797 x 10 ⁶ hrs	

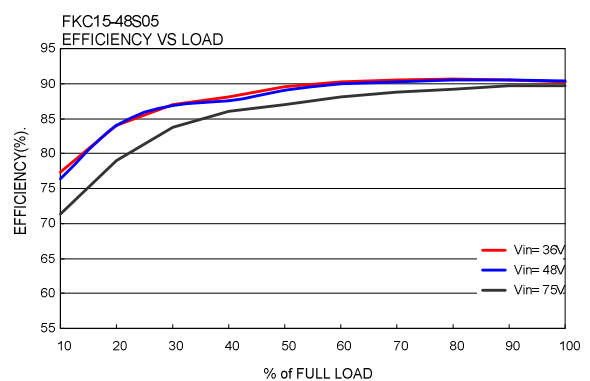
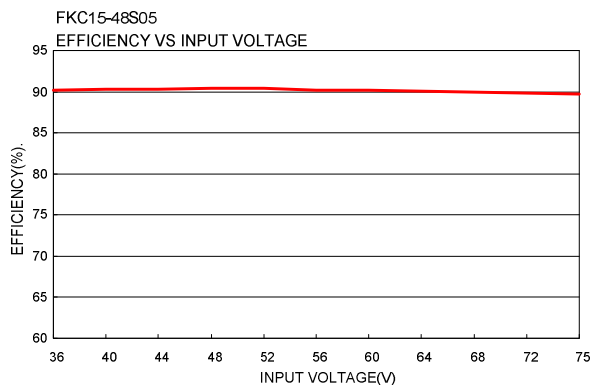
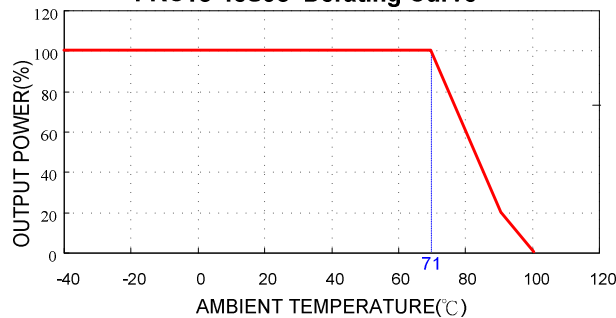
INPUT SPECIFICATIONS			
Input voltage range	12VDC nominal input		9 ~ 18VDC
	24VDC nominal input		18 ~ 36VDC
	48VDC nominal input		36 ~ 75VDC
Input filter	Pi type		
Input surge voltage	12VDC input		36VDC 1sec, max.
	24VDC input		50VDC 1sec, max.
	48VDC input		100VDC 1sec, max.
Input reflected ripple current	20mA _{p-p}		
Start up time	Nominal Vin and constant resistive load	Power up	60ms, max.
Start-up voltage	12VDC input		9VDC
	24VDC input		18VDC
	48VDC input		36VDC
Shutdown voltage	12VDC input		8VDC
	24VDC input		16VDC
	48VDC input		33VDC
Remote ON/OFF (Note 6) (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	Nominal input		-0.5mA ~ 0.5mA
Remote off state input current	Nominal input		2.5mA
ENVIRONMENTAL SPECIFICATIONS			
Operating ambient temperature	-40°C to +100°C (with derating)		
Maximum case temperature	105°C		
Storage temperature range	-55°C ~ +125°C		
Thermal impedance	Nature convection		20°C/Watt
Thermal shock	MIL-STD-810F		
Vibration	MIL-STD-810F		
Relative humidity	5% to 95% RH		
EMC CHARACTERISTICS			
EMI (Note 7)	EN55022		Class A, Class B
ESD	EN61000-4-2	Air	± 8kV
		Contact	± 6kV
Radiated immunity	EN61000-4-3	10 V/m	Perf. Criteria A
Fast transient (Note 8)	EN61000-4-4	± 2kV	Perf. Criteria A
Surge (Note 8)	EN61000-4-5	± 2kV	Perf. Criteria A
Conducted immunity	EN61000-4-6	10 Vr.m.s	Perf. Criteria A

Model Number	Input Range	Output Voltage	Output Current		Output (5) Ripple & Noise	No load(2) Input Current	Eff(3) (%)	Capacitor(4) Load max.
			Min. load	Full load				
FKC15-12S3P3	9 ~ 18 VDC	3.3 VDC	0mA	4000mA	60mVp-p	10mA	87	4700μF
FKC15-12S05	9 ~ 18 VDC	5.1 VDC	0mA	3000mA	60mVp-p	10mA	90	3300μF
FKC15-12S12	9 ~ 18 VDC	12 VDC	0mA	1250mA	60mVp-p	5mA	90	600μF
FKC15-12S15	9 ~ 18 VDC	15 VDC	0mA	1000mA	60mVp-p	10mA	90	400μF
FKC15-12D05	9 ~ 18 VDC	± 5 VDC	0mA	±1500mA	60mVp-p	10mA	86	± 1500μF
FKC15-12D12	9 ~ 18 VDC	± 12 VDC	0mA	± 625mA	60mVp-p	6mA	90	± 288μF
FKC15-12D15	9 ~ 18 VDC	± 15 VDC	0mA	± 500mA	60mVp-p	10mA	90	± 200μF
FKC15-24S3P3	18 ~ 36 VDC	3.3 VDC	0mA	4000mA	60mVp-p	6mA	88	4700μF
FKC15-24S05	18 ~ 36 VDC	5.1 VDC	0mA	3000mA	60mVp-p	6mA	90	3300μF
FKC15-24S12	18 ~ 36 VDC	12 VDC	0mA	1250mA	60mVp-p	4mA	91	600μF
FKC15-24S15	18 ~ 36 VDC	15 VDC	0mA	1000mA	60mVp-p	6mA	91	400μF
FKC15-24D05	18 ~ 36 VDC	± 5 VDC	0mA	±1500mA	60mVp-p	4mA	87	± 1500μF
FKC15-24D12	18 ~ 36 VDC	± 12 VDC	0mA	± 625mA	60mVp-p	6mA	90	± 288μF
FKC15-24D15	18 ~ 36 VDC	± 15 VDC	0mA	± 500mA	60mVp-p	6mA	90	± 200μF
FKC15-48S3P3	36 ~ 75 VDC	3.3 VDC	0mA	4000mA	60mVp-p	4mA	88	4700μF
FKC15-48S05	36 ~ 75 VDC	5.1 VDC	0mA	3000mA	60mVp-p	4mA	90	3300μF
FKC15-48S12	36 ~ 75 VDC	12 VDC	0mA	1250mA	60mVp-p	4mA	90	600μF
FKC15-48S15	36 ~ 75 VDC	15 VDC	0mA	1000mA	60mVp-p	4mA	91	400μF
FKC15-48D05	36 ~ 75 VDC	± 5 VDC	0mA	±1500mA	60mVp-p	4mA	87	± 1500μF
FKC15-48D12	36 ~ 75 VDC	± 12 VDC	0mA	± 625mA	60mVp-p	4mA	90	± 288μF
FKC15-48D15	36 ~ 75 VDC	± 15 VDC	0mA	± 500mA	60mVp-p	4mA	90	± 200μF

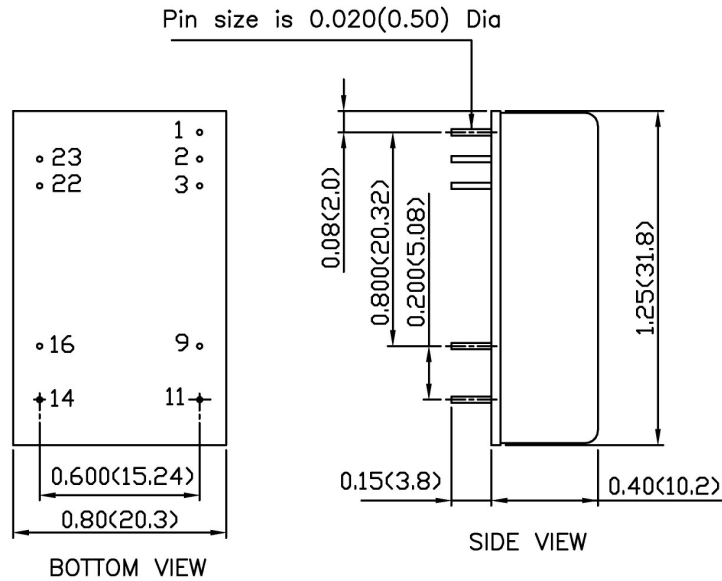
NOTE:

- MIL-HDBK-217F @Ta=25 °C, Full load.
- Typical value at nominal input and no load.
- Typical value at nominal input and full load.
- Test by minimum input and constant resistive load.
- Measured with 1μF ceramic capacitor.
- The ON/OFF control pin voltage is referenced to -INPUT.
- The FKC15 series standard module meet EN55022 Class A without external components and meet Class B with external components.
For more detail information, please contact with P-DUKE.
- An external input filter capacitor is required if the module has to meet EN61000-4-4, EN61000-4-5.
The filter capacitor Power Mate suggest: Nippon chemi-con KY series, 220μF/100V.

CAUTION: This power module is not internally fused. An input line fuse must always be used.

FKC15-48S05 Derating Curve


MECHANICAL DRAWING :



1. All dimensions in Inch (mm)

Tolerance: X.XX±0.02 (X.X±0.5)

X.XXX±0.01 (X.XX±0.25)

2. Pin pitch tolerance ±0.01 (0.25)

3. Pin dimension tolerance ±0.004 (0.1)

DIP PIN CONNECTION					
PIN	SINGLE	DUAL	PIN	SINGLE	DUAL
1	CTRL	CTRL			
2	-INPUT	-INPUT	23	+INPUT	+INPUT
3	-INPUT	-INPUT	22	+INPUT	+INPUT
9	NC	COMMON	16	-OUTPUT	COMMON
11	NC	-OUTPUT	14	+OUTPUT	+OUTPUT