



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 90%
- LOW STANDBY POWER DISSIPATION
- 4:1 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 FKC15W series offer 15 watts of output power from a package in an IC compatible 24pin DIP configuration. FKC15W series have 4:1 wide input voltage of 9~36 and 18~75VDC. The FKC15W 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%
	10% Load to 90% Load	Dual	± 1%
		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	
	5.1VDC output	6.2VDC	
	Zener diode clamp	12VDC output	15VDC
	(Single only)	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	1.603 x 10 ⁶ hrs	

INPUT SPECIFICATIONS			
Input voltage range	24VDC nominal input		9 ~ 36VDC
	48VDC nominal input		18 ~ 75VDC
Input filter		Pi type	
Input surge voltage	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	24VDC input		9VDC
	48VDC input		18VDC
Shutdown voltage	24VDC input		8VDC
	48VDC input		16VDC
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 ~ +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 Contact ± 8kV ± 6kV	Perf. Criteria A
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 ⁽³⁾ Input Current	Eff ⁽³⁾ (%)	Capacitor ⁽⁴⁾ Load max
			Min. load	Full load				
FKC15-24S3P3W	9 ~ 36 VDC	3.3 VDC	0mA	4000mA	60mVp-p	6mA	88	4700μF
FKC15-24S05W	9 ~ 36 VDC	5.1 VDC	0mA	3000mA	60mVp-p	6mA	90	3300μF
FKC15-24S12W	9 ~ 36 VDC	12 VDC	0mA	1250mA	60mVp-p	6mA	90	600μF
FKC15-24S15W	9 ~ 36 VDC	15 VDC	0mA	1000mA	60mVp-p	6mA	90	400μF
FKC15-24D05W	9 ~ 36 VDC	± 5 VDC	0mA	±1500mA	60mVp-p	6mA	86	± 1500μF
FKC15-24D12W	9 ~ 36 VDC	± 12 VDC	0mA	± 625mA	60mVp-p	6mA	89	± 288μF
FKC15-24D15W	9 ~ 36 VDC	± 15 VDC	0mA	± 500mA	60mVp-p	6mA	90	± 200μF
FKC15-48S3P3W	18 ~ 75 VDC	3.3 VDC	0mA	4000mA	60mVp-p	4mA	89	4700μF
FKC15-48S05W	18 ~ 75 VDC	5.1 VDC	0mA	3000mA	60mVp-p	4mA	89	3300μF
FKC15-48S12W	18 ~ 75 VDC	12 VDC	0mA	1250mA	60mVp-p	4mA	90	600μF
FKC15-48S15W	18 ~ 75 VDC	15 VDC	0mA	1000mA	60mVp-p	4mA	90	400μF
FKC15-48D05W	18 ~ 75 VDC	± 5 VDC	0mA	±1500mA	60mVp-p	4mA	86	± 1500μF
FKC15-48D12W	18 ~ 75 VDC	± 12 VDC	0mA	± 625mA	60mVp-p	4mA	89	± 288μF
FKC15-48D15W	18 ~ 75 VDC	± 15 VDC	0mA	± 500mA	60mVp-p	4mA	90	± 200μF

NOTE:

1. MIL-HDBK-217F @Ta=25 °C, Full load.
2. Typical value at nominal input and no load.
3. Typical value at nominal input and full load.
4. Test by minimum input and constant resistive load.
5. Measured with 1μF ceramic capacitor.
6. The ON/OFF control pin voltage is referenced to -INPUT.
7. The FKC15W series standard module meet EN55022 Class A without external components and meet Class B with external components.

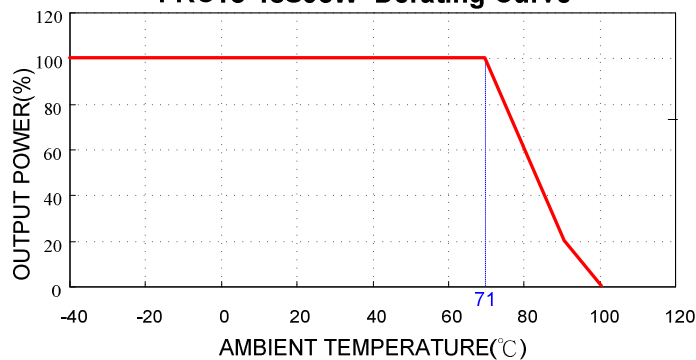
For more detail information, please contact with P-DUKE.

8. An external input filter capacitor is required if the module has to meet EN61000-4-4, EN61000-4-5.

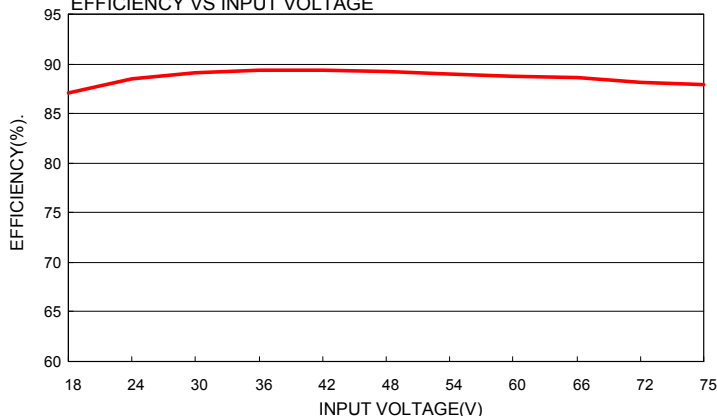
The filter's capacitor Power Mate suggests: Nippon chemi-con KY series, 220μF/100V.

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

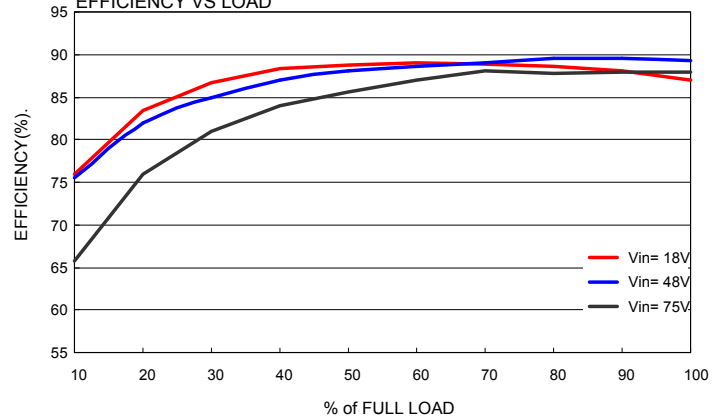
FKC15-48S05W Derating Curve



**FKC15-48S05W
EFFICIENCY VS INPUT VOLTAGE**

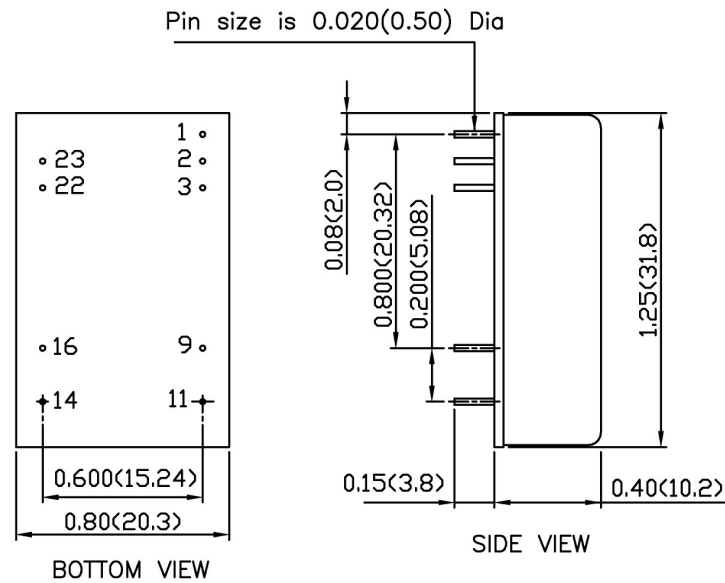


**FKC15-48S05W
EFFICIENCY VS LOAD**





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	23	+INPUT	+INPUT
2	-INPUT	-INPUT	22	+INPUT	+INPUT
3	-INPUT	-INPUT			
9	NC	COMMON	16	-OUTPUT	COMMON
11	NC	-OUTPUT	14	+OUTPUT	+OUTPUT