

### 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, 93/68/EEC AND 2004/108/EC
- UL60950-1, EN60950-1 AND IEC60950-1 SAFETY APPROVALS PENDING
- COMPLIANT TO RoHS EU DIRECTIVE 2002/95/EC

### 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%
		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	5.1VDC output	6.2VDC
(Single only)	12VDC output	15VDC	
	15VDC output	18VDC	
Over load protection	% of FL at nominal input		150%
Short circuit protection	Hiccup, automatics recovery		
GENERAL SPECIFICATIONS			
Efficiency	See table		
Isolation voltage	Input to Output	1600VDC, min.	1minute
	Input (Output) to Case	1600VDC, min.	1minute
Isolation resistance	10 <sup>9</sup> ohms, min.		
Isolation capacitance	2000pF, max.		
Switching frequency	330KHz±10%		
Safety approvals pending	IEC60950-1, UL60950-1, EN60950-1		
Case material	Nickel-coated copper		
Base material	FR4 PCB		
Potting material	Silicon(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)	BELLCORE TR-NWT-000332	3.37 x 10 <sup>5</sup> hrs	
	MIL-HDBK-217F	4.13 x 10 <sup>5</sup> 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 <sub>p-p</sub>		
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	EN55022	Class A	
ESD	EN61000-4-2	Air ± 8KV	Perf. Criteria A
		Contact ± 6KV	
Radiated immunity	EN61000-4-3	10 V/m	Perf. Criteria A
Fast transient (Note 7)	EN61000-4-4	± 2KV	Perf. Criteria A
Surge (Note 7)	EN61000-4-5	± 2KV	Perf. Criteria A
Conducted immunity	EN61000-4-6	10 Vr.m.s	Perf. Criteria A

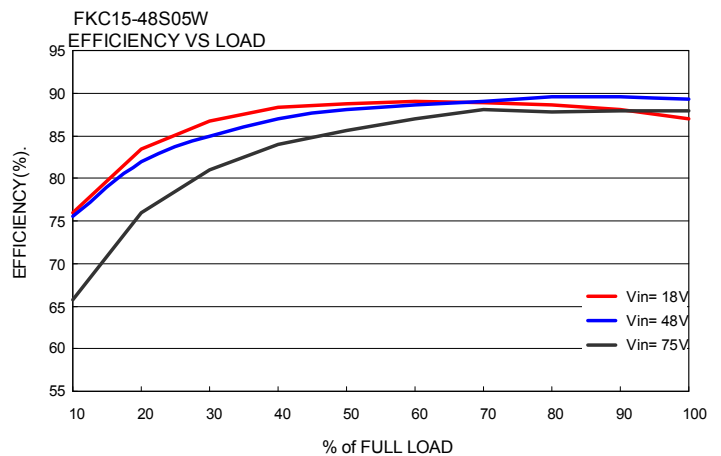
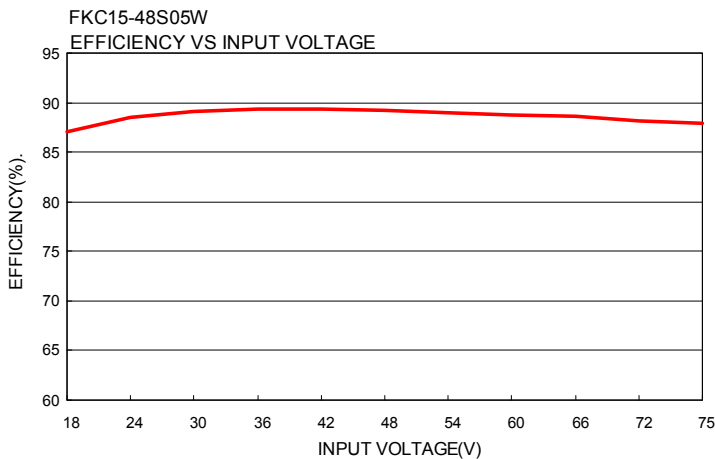


Model Number	Input Range	Output Voltage	Output Current		Output (5) Ripple & Noise	No load(3) Input Current	Eff(3) (%)	Capacitor(4) Load max
			Min. load	Full load				
FKC15-24S3P3W	9 ~ 36 VDC	3.3 VDC	0mA	4000mA	60mVp-p	6mA	88	4700μF
FKC15-24S05W	9 ~ 36 VDC	5.1 VDC	0mA	3000mA	60mVp-p	6mA	90	3300μF
FKC15-24S12W	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:**

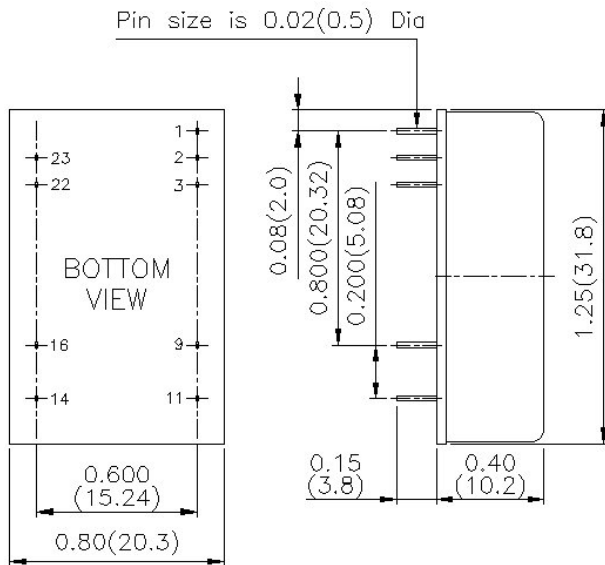
1. BELLCORE TR-NWT-000332. Case 1: 50% Stress, Temperature at 40°C.  
MIL-HDBK-217F Notice2 @Ta=25 °C, Full load (Ground, Benign, controlled environment).
2. Typical value at nominal input and no load.
3. Typical value at nominal input and full load.
4. Test by minimum input and constant resistive load.
5. Measured with 1μF ceramic capacitor.
6. The ON/OFF control pin voltage is referenced to -INPUT.
7. 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, ESR 48mΩ.

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

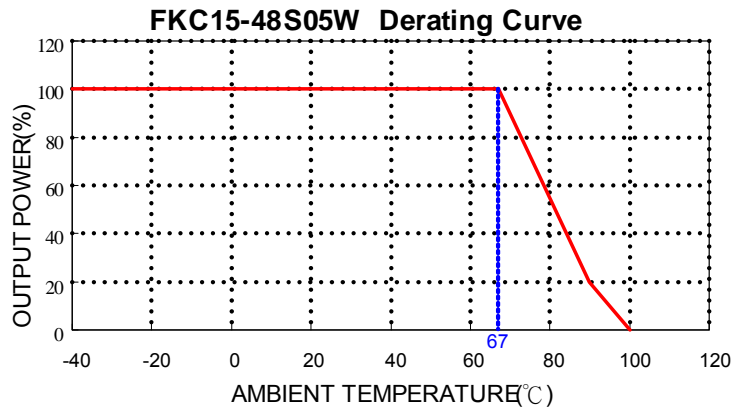




**Mechanical Drawing:**



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

