



**APPLICATIONS**

Wireless Network  
Telecom/Datacom  
Industry Control System  
Measurement  
Semiconductor Equipment

**FEATURES**

- 5 WATTS REGULATED OUTPUT POWER
- OUTPUT CURRENT UP TO 1000mA
- STANDARD 1.25" X 0.8" X 0.4" INCH
- HIGH EFFICIENCY UP TO 81%
- 2:1 WIDE INPUT VOLTAGE RANGE
- SWITCHING FREQUENCY (100KHz, min)
- OVER CURRENT PROTECTION
- STANDARD 24 PIN DIP PACKAGE & SMD TYPE PACKAGE
- CE MARK MEETS 2006/95/EC, 93/68/EEC AND 2004/108/EC
- UL60950-1, EN60950-1 AND IEC60950-1 LICENSED
- ISO9001 CERTIFIED MANUFACTURING FACILITIES
- COMPLIANT TO RoHS EU DIRECTIVE 2002/95/EC

**OPTIONS**

SMD TYPE

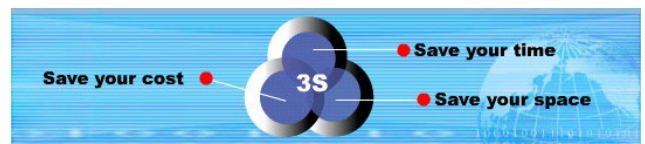
**DESCRIPTION**

The PFKC05 series offer 5 watts of output power from a package in an IC compatible 24pin DIP configuration without derating to 71°C ambient temperature and pin to pin compatible with PFKC03, FKC03, FKC05 series. PFKC05 series have 2:1 wide input voltage of 9-18, 18-36 and 36-75VDC.

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

OUTPUT SPECIFICATIONS			
Output power	5 Watts max		
Voltage accuracy	Full load and nominal Vin	± 1%	
Minimum load (Note 7)	See table		
Line regulation	LL to HL at Full Load	± 0.2%	
Load regulation	Min. Load to Full Load	Single	± 0.5%
		Dual	± 2%
Cross regulation (Dual)	Asymmetrical load 25% / 100% FL	± 5%	
Ripple and noise	20MHz bandwidth	See table	
Temperature coefficient	±0.02% / °C, max		
Transient response recovery time	25% load step change	500uS	
Over load protection	% of FL at nominal input	180% typ	
Short circuit protection	Continuous, automatic recovery		
GENERAL SPECIFICATIONS			
Efficiency	See table		
Isolation voltage	Input to Output	Standard	1600VDC, min
		Suffix " H "	3000VDC, min
Isolation resistance	10 <sup>9</sup> ohms, min		
Isolation capacitance	300pF, max		
Switching frequency	100KHz, min		
Approvals and standard	IEC60950-1, UL60950-1, EN60950-1		
Case material	Non-conductive black plastic		
Base material	Non-conductive black plastic		
Potting material	Epoxy (UL94-V0)		
Dimensions	1.25 X 0.80 X 0.40 Inch (31.8 X 20.3 X 10.2 mm)		
Weight	DIP	14g (0.48oz)	
	SMD	15g (0.52oz)	
MTBF (Note 1)	BELLCORE TR-NWT-000332	3.731 x 10 <sup>6</sup> hrs	
	MIL-HDBK-217F	2.591 x 10 <sup>6</sup> hrs	

INPUT SPECIFICATIONS			
Input voltage range	12V nominal input	9 – 18VDC	
	24V nominal input	18 – 36VDC	
	48V nominal input	36 – 75VDC	
Input filter	Pi type		
Input surge voltage 100mS max	12V input	36VDC	
	24V input	50VDC	
	48V input	100VDC	
Input reflected ripple current	Nominal Vin and full load	150mA <sub>p-p</sub>	
Start up time	Nominal Vin and constant resistive load	Power up	30mS typ
ENVIRONMENTAL SPECIFICATIONS			
Operating temperature range	-25°C ~ +71°C(non derating)		
Storage temperature range	-55°C ~ +105°C		
Thermal shock	MIL-STD-810F		
Vibration	10~55Hz, 10G, 30minutes along X,Y and Z		
Relative humidity	5% to 95% RH		
EMC CHARACTERISTICS			
EMI	EN55022	Class A	
ESD	EN61000-4-2	Air	± 8KV
		Contact	± 6KV
Radiated immunity	EN61000-4-3	10 V/m	Perf. Criteria A
Fast transient	EN61000-4-4	± 2KV	Perf. Criteria B
Surge (Note 6)	EN61000-4-5	± 1KV	Perf. Criteria B
Conducted immunity	EN61000-4-6	10 Vr.m.s	Perf. Criteria A



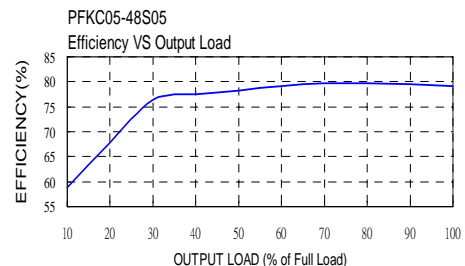
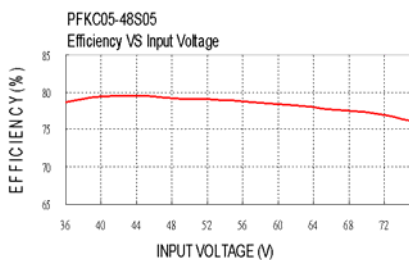
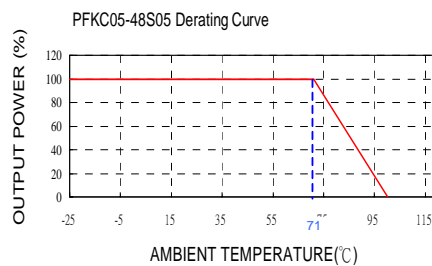


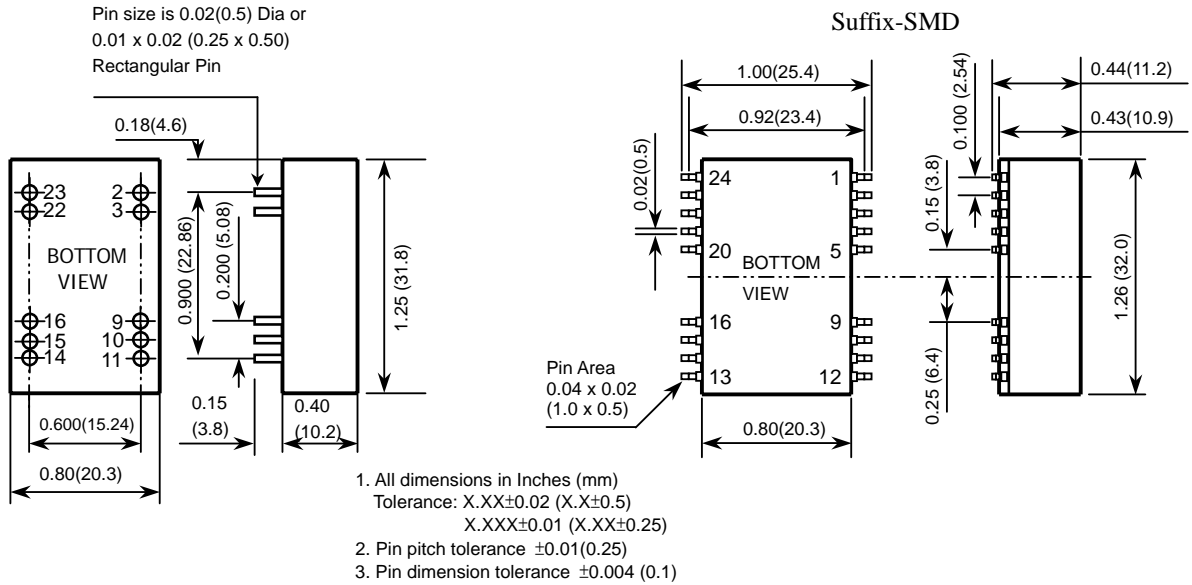
**5 WATTS  
DC-DC CONVERTER**

Model Number	Input Range	Output Voltage	Output Current		Output <sup>(4)</sup> Ripple & Noise	Input Current		Eff <sup>(4)</sup> (%)	Capacitor <sup>(5)</sup> Load max
			Min. load	Full load		No load <sup>(3)</sup>	Full load <sup>(2)</sup>		
PFKC05-12S33	9 – 18 VDC	3.3 VDC	100mA	1000mA	75mVp-p	25mA	404mA	72	2200uF
PFKC05-12S05	9 – 18 VDC	5 VDC	100mA	1000mA	75mVp-p	10mA	579mA	76	1000uF
PFKC05-12S12	9 – 18 VDC	12 VDC	47mA	470mA	120mVp-p	30mA	618mA	80	220uF
PFKC05-12S15	9 – 18 VDC	15 VDC	40mA	400mA	150mVp-p	20mA	658mA	80	150uF
PFKC05-12D05	9 – 18 VDC	± 5 VDC	±50mA	± 500mA	75mVp-p	20mA	571mA	77	± 680uF
PFKC05-12D12	9 – 18 VDC	± 12 VDC	±20mA	± 230mA	120mVp-p	50mA	605mA	80	± 100uF
PFKC05-12D15	9 – 18 VDC	± 15 VDC	±19mA	± 190mA	150mVp-p	30mA	625mA	80	± 68uF
PFKC05-24S33	18 – 36 VDC	3.3 VDC	100mA	1000mA	75mVp-p	15mA	202mA	72	2200uF
PFKC05-24S05	18 – 36 VDC	5 VDC	100mA	1000mA	75mVp-p	10mA	278mA	79	1000uF
PFKC05-24S12	18 – 36 VDC	12 VDC	47mA	470mA	120mVp-p	10mA	306mA	81	220uF
PFKC05-24S15	18 – 36 VDC	15 VDC	40mA	400mA	150mVp-p	10mA	325mA	81	150uF
PFKC05-24D05	18 – 36 VDC	± 5 VDC	±50mA	± 500mA	75mVp-p	10mA	282mA	78	± 680uF
PFKC05-24D12	18 – 36 VDC	± 12 VDC	±23mA	± 230mA	120mVp-p	40mA	299mA	81	± 100uF
PFKC05-24D15	18 – 36 VDC	± 15 VDC	±19mA	± 190mA	150mVp-p	10mA	309mA	81	± 68uF
PFKC05-48S33	36 – 75 VDC	3.3 VDC	100mA	1000mA	75mVp-p	5mA	100mA	73	2200uF
PFKC05-48S05	36 – 75 VDC	5 VDC	100mA	1000mA	75mVp-p	5mA	141mA	78	1000uF
PFKC05-48S12	36 – 75 VDC	12 VDC	47mA	470mA	120mVp-p	5mA	153mA	81	220uF
PFKC05-48S15	36 – 75 VDC	15 VDC	40mA	400mA	150mVp-p	5mA	162mA	81	150uF
PFKC05-48D05	36 – 75 VDC	± 5 VDC	±50mA	± 500mA	75mVp-p	10mA	143mA	77	± 680uF
PFKC05-48D12	36 – 75 VDC	± 12 VDC	±23mA	± 230mA	120mVp-p	10mA	149mA	81	± 100uF
PFKC05-48D15	36 – 75 VDC	± 15 VDC	±19mA	± 190mA	150mVp-p	10mA	154mA	81	± 68uF

Note

- 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).
- Maximum value at nominal input voltage and full load.
- Typical value at nominal input voltage and no load.
- Typical value at nominal input voltage and full load.
- Test by minimum Vin and constant resistive load.
- An external filter capacitor is required if the module has to meet EN61000-4-5.  
The filter capacitor Power Mate suggest: Nippon chemi-con KY series, 220 μF/100V, ESR 48mΩ.
- The output requires a minimum loading on the output to maintain specified regulation. Operation under no-load condition will not damage these devices, however they may not meet all listed specification.





DIP PIN CONNECTION					
PIN	SINGLE	DUAL	PIN	SINGLE	DUAL
2	- INPUT	- INPUT	23	+ INPUT	+ INPUT
3	- INPUT	- INPUT	22	+ INPUT	+ INPUT
9	NC	COMMON	16	- OUTPUT	COMMON
10	NC	NC	15	NC	NC
11	NC	- OUTPUT	14	+ OUTPUT	+ OUTPUT

SMD PIN CONNECTION					
PIN	SINGLE	DUAL	PIN	SINGLE	DUAL
2	- INPUT	- INPUT	23	+ INPUT	+ INPUT
3	- INPUT	- INPUT	22	+ INPUT	+ INPUT
9	NC	COMMON	16	- OUTPUT	COMMON
10	NC	NC	15	NC	NC
11	NC	- OUTPUT	14	+ OUTPUT	+ OUTPUT
Others	NC	NC	Others	NC	NC