



APPLICATIONS

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

FEATURES

- 5 WATTS REGULATED OUTPUT POWER
- OUTPUT CURRENT UP TO 1000mA
- STANDARD 1.25 X 0.80 X 0.40 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
- UL60950-1, EN60950-1, & IEC60950-1 SAFETY APPROVALS
- CE MARKED
- COMPLIANT TO RoHS II & REACH

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 s/

OUTPUT SPECIFICATIONS			
Output power	5 Watts, max.		
Voltage accuracy	± 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	500µs	
Over load protection	% of FL at nominal input	180%	
Short circuit protection	Continuous, automatics recovery		
GENERAL SPECIFICATIONS			
Efficiency	See table		
Isolation voltage	Input to Output	Standard	1600VDC, min. 1minute
		Suffix " H "	3000VDC, min. 1minute
Isolation resistance	500VDC	10 ⁹ ohms, min.	
Isolation capacitance	300pF, max.		
Switching frequency	100kHz, min.		
Safety approvals	IEC60950-1, UL60950-1, & EN60950-1		
Case material	Non-conductive black plastic		
Base material	Non-conductive black plastic		
Potting material	Epoxy (UL94 V-0)		
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)	MIL-HDBK-217F	5.953 x 10 ⁶ hrs	

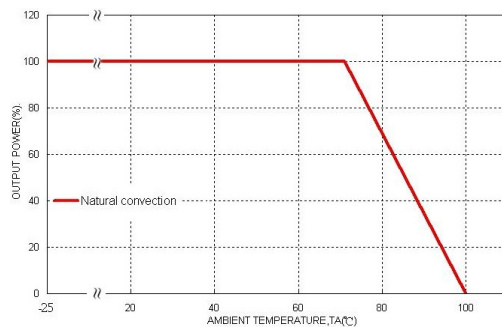
INPUT SPECIFICATIONS			
Input voltage range	12VDC nominal input	9 ~ 18VDC	
	24VDC nominal input	18 ~ 36VDC	
	48VDC nominal input	36 ~75VDC	
Input filter	Pi type		
Input surge voltage	12VDC input	36VDC 100ms, max.	
	24VDC input	50VDC 100ms, max.	
	48VDC input	100VDC 100ms, max.	
Input reflected ripple current	150mA _{p-p}		
Start up time	Nominal input and constant resistive load	Power up	30ms
ENVIRONMENTAL SPECIFICATIONS			
Operating ambient temperature	-25°C ~ +71°C(non derating)		
Storage temperature range	-55°C ~ +125°C		
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 Contact	± 8kV Perf. Criteria A
			± 6kV Perf. Criteria A
Radiated immunity	EN61000-4-3	10 V/m	Perf. Criteria A
Fast transient (Note 6)	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

Model Number	Input Range	Output Voltage	Output Current		Output ⁽²⁾ Ripple & Noise	No load ⁽³⁾ Input Current	Eff ⁽⁴⁾ (%)	Capacitor ⁽⁵⁾ Load max
			Min. load	Full load				
PFKC05-12S33	9 ~ 18 VDC	3.3 VDC	100mA	1000mA	75mVp-p	25mA	72	2200μF
PFKC05-12S05	9 ~ 18 VDC	5 VDC	100mA	1000mA	75mVp-p	10mA	76	1000μF
PFKC05-12S12	9 ~ 18 VDC	12 VDC	47mA	470mA	120mVp-p	30mA	80	220μF
PFKC05-12S15	9 ~ 18 VDC	15 VDC	40mA	400mA	150mVp-p	20mA	80	150μF
PFKC05-12D05	9 ~ 18 VDC	± 5 VDC	±50mA	± 500mA	75mVp-p	20mA	77	± 680μF
PFKC05-12D12	9 ~ 18 VDC	± 12 VDC	±20mA	± 230mA	120mVp-p	50mA	80	± 100μF
PFKC05-12D15	9 ~ 18 VDC	± 15 VDC	±19mA	± 190mA	150mVp-p	30mA	80	± 68μF
PFKC05-24S33	18 ~ 36 VDC	3.3 VDC	100mA	1000mA	75mVp-p	15mA	72	2200μF
PFKC05-24S05	18 ~ 36 VDC	5 VDC	100mA	1000mA	75mVp-p	10mA	79	1000μF
PFKC05-24S12	18 ~ 36 VDC	12 VDC	47mA	470mA	120mVp-p	10mA	81	220μF
PFKC05-24S15	18 ~ 36 VDC	15 VDC	40mA	400mA	150mVp-p	10mA	81	150μF
PFKC05-24D05	18 ~ 36 VDC	± 5 VDC	±50mA	± 500mA	75mVp-p	10mA	78	± 680μF
PFKC05-24D12	18 ~ 36 VDC	± 12 VDC	±23mA	± 230mA	120mVp-p	40mA	81	± 100μF
PFKC05-24D15	18 ~ 36 VDC	± 15 VDC	±19mA	± 190mA	150mVp-p	10mA	81	± 68μF
PFKC05-48S33	36 ~ 75 VDC	3.3 VDC	100mA	1000mA	75mVp-p	5mA	73	2200μF
PFKC05-48S05	36 ~ 75 VDC	5 VDC	100mA	1000mA	75mVp-p	5mA	78	1000μF
PFKC05-48S12	36 ~ 75 VDC	12 VDC	47mA	470mA	120mVp-p	5mA	81	220μF
PFKC05-48S15	36 ~ 75 VDC	15 VDC	40mA	400mA	150mVp-p	5mA	81	150μF
PFKC05-48D05	36 ~ 75 VDC	± 5 VDC	±50mA	± 500mA	75mVp-p	10mA	77	± 680μF
PFKC05-48D12	36 ~ 75 VDC	± 12 VDC	±23mA	± 230mA	120mVp-p	10mA	81	± 100μF
PFKC05-48D15	36 ~ 75 VDC	± 15 VDC	±19mA	± 190mA	150mVp-p	10mA	81	± 68μF

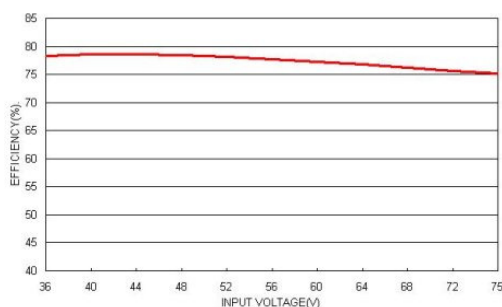
1. MIL-HDBK-217F @Ta=25 °C, Full load.
2. Typical value at nominal input and full load. (20MHz BW.)
3. Typical value at nominal input and no load.
4. Typical value at nominal input and full load.
5. Test by minimum input and constant resistive load.
6. An external input filter capacitor is required if the module has to meet EN61000-4-4, EN61000-4-5.
The filter capacitor Power Mate suggest: Nippon chemi-con KY series, 220μF/100V.
7. 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.

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

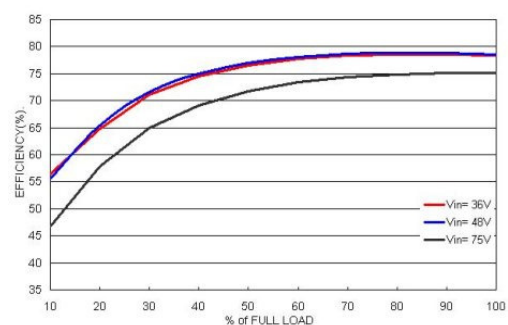
PFKC05-48S05 Derating Curve



PFKC05-48S05 Efficiency VS Input Voltage

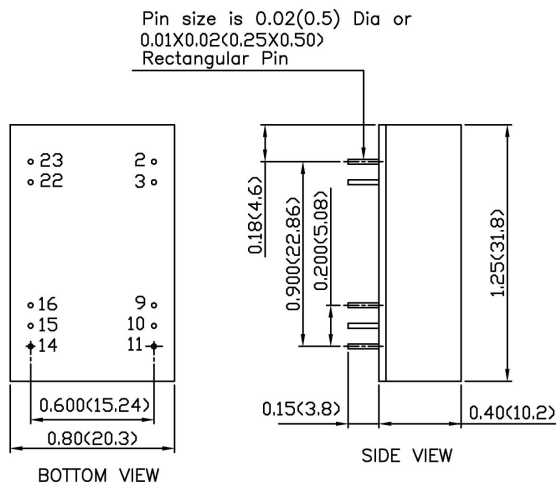


PFKC05-48S05 Efficiency VS Output Current

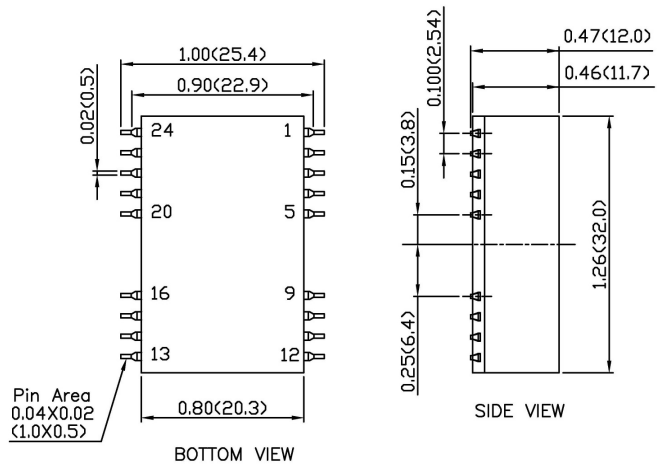


MECHANICAL DRAWING :

DIP TYPE



SMD TYPE



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
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	NCZ
11	NC	-OUTPUT	14	+OUTPUT	+OUTPUT
Others	NC	NC			