POWER MATE TECHNOLOGY CO.,LTD.

PFKC03-SERIES

FEATURES

- 3 WATTS REGULATED OUTPUT POWER
- OUTPUT CURRENT UP TO 600mA
- STANDARD 1.25 X 0.80 X 0.40 INCH
- HIGH EFFICIENCY UP TO 80%
- 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

APPLICATIONS

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

OPTIONS

SMD TYPE

DESCRIPTION

The PFKC03 series offer 3 watts of output power from a package in an IC compatible 24 pin DIP configuration without derating to 71ºC ambient temperature and pin to pin compatible to PFKC05, FKC03, FKC05 series. PFKC03 series have 2:1 wide input voltage of 4.5-6, 9-18, 18-36 and 36-75VDC.

TECHNICAL SPECIFICATION

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

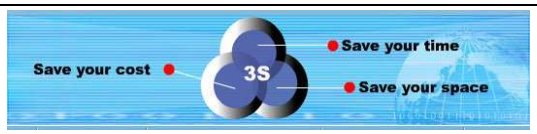
OUTPUT SPECIFICATIONS			
Output power			3 Watts, max.
Voltage accuracy	Full load and nominal Vin		±1%
Minimum load (Note 7)			See table
Line regulation	LL to HL at Full Load		± 0.2%
Load regulation	Min. Load to Full Load	Single 3.3Vout	± 0.3%
		Others	± 0.2%
		Dual	± 2%
Cross regulation (Dual)	Asymmetrical load 25% / 100% FL		± 5%
Ripple and noise	20MHz bandwidth		See table
Temperature coefficient			±0.02% / ºC, max.
Transient response recovery time	25% load step change		500µS
Over load protection	% of FL at nominal input		180%, typ.
Short circuit protection			Continuous, automatics recovery

GENERAL SPECIFICATIONS			
Efficiency			See table
Isolation voltage	Input to Output	Standard	1600VDC, min.
		Suffix " H "	3000VDC, min.
Isolation resistance			10^9 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		3.690×10^6 hrs
	MIL-HDBK-217F		3.082×10^6 hrs

INPUT SPECIFICATIONS		
Input voltage range	5V nominal input	4.5 – 6VDC
	12V nominal input	9 – 18VDC
	24V nominal input	18 – 36VDC
	48V nominal input	36 – 75VDC
Input filter		Pi type
Input surge voltage 100mS max	5V input	15VDC
	12V input	36VDC
	24V input	50VDC
	48V input	100VDC
Input reflected ripple current	Nominal Vin and full load	120mAp-p
Start up time	Nominal Vin and constant resistive load / Power up	30mS, typ.

ENVIRONMENTAL SPECIFICATIONS	
Operating ambient temperature	-25ºC ~ +71ºC(non derating)
Storage temperature range	-55ºC ~ +105ºC
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 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



POWER MATE TECHNOLOGY CO.,LTD.

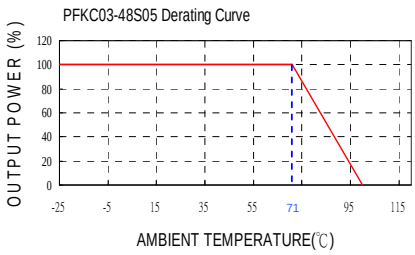
P-DUKE

3 WATTS DC-DC CONVERTER

Model Number	Input Range	Output Voltage	Output Current		Output[4] Ripple & Noise	Input Current		Eff[4] (%)	Capacitor[5] Load max
			Min. load	Full load		No load[3]	Full load[2]		
PFKC03-05S33	4.5 – 6 VDC	3.3 VDC	60mA	600mA	75mVp-p	20mA	649mA	66	2200μF
PFKC03-05S05	4.5 – 6 VDC	5 VDC	60mA	600mA	75mVp-p	20mA	909mA	70	1000μF
PFKC03-05S12	4.5 – 6 VDC	12 VDC	25mA	250mA	120mVp-p	35mA	835mA	76	170μF
PFKC03-05S15	4.5 – 6 VDC	15 VDC	20mA	200mA	150mVp-p	35mA	845mA	75	110μF
PFKC03-05D05	4.5 – 6 VDC	± 5 VDC	±30mA	± 300mA	75mVp-p	20mA	857mA	74	± 500μF
PFKC03-05D12	4.5 – 6 VDC	± 12 VDC	±12mA	± 125mA	120mVp-p	25mA	845mA	75	± 96μF
PFKC03-05D15	4.5 – 6 VDC	± 15 VDC	±10mA	± 100mA	150mVp-p	55mA	870mA	73	± 47μF
PFKC03-12S33	9 – 18 VDC	3.3 VDC	60mA	600mA	75mVp-p	10mA	266mA	70	2200μF
PFKC03-12S05	9 – 18 VDC	5 VDC	60mA	600mA	75mVp-p	10mA	353mA	75	1000μF
PFKC03-12S12	9 – 18 VDC	12 VDC	25mA	250mA	120mVp-p	15mA	333mA	79	170μF
PFKC03-12S15	9 – 18 VDC	15 VDC	20mA	200mA	150mVp-p	15mA	343mA	77	110μF
PFKC03-12D05	9 – 18 VDC	± 5 VDC	±30mA	± 300mA	75mVp-p	15mA	348mA	76	± 500μF
PFKC03-12D12	9 – 18 VDC	± 12 VDC	±12mA	± 125mA	120mVp-p	20mA	338mA	78	± 96μF
PFKC03-12D15	9 – 18 VDC	± 15 VDC	±10mA	± 100mA	150mVp-p	25mA	333mA	79	± 47μF
PFKC03-24S33	18 – 36 VDC	3.3 VDC	60mA	600mA	75mVp-p	10mA	123mA	71	2200μF
PFKC03-24S05	18 – 36 VDC	5 VDC	60mA	600mA	75mVp-p	10mA	174mA	76	1000μF
PFKC03-24S12	18 – 36 VDC	12 VDC	25mA	250mA	120mVp-p	10mA	164mA	80	170μF
PFKC03-24S15	18 – 36 VDC	15 VDC	20mA	200mA	150mVp-p	10mA	164mA	80	110μF
PFKC03-24D05	18 – 36 VDC	± 5 VDC	±30mA	± 300mA	75mVp-p	10mA	172mA	77	± 500μF
PFKC03-24D12	18 – 36 VDC	± 12 VDC	±12mA	± 125mA	120mVp-p	10mA	167mA	79	± 96μF
PFKC03-24D15	18 – 36 VDC	± 15 VDC	±10mA	± 100mA	150mVp-p	10mA	167mA	79	± 47μF
PFKC03-48S33	36 – 75 VDC	3.3 VDC	60mA	600mA	75mVp-p	5mA	61mA	72	2200μF
PFKC03-48S05	36 – 75 VDC	5 VDC	60mA	600mA	75mVp-p	5mA	88mA	75	1000μF
PFKC03-48S12	36 – 75 VDC	12 VDC	25mA	250mA	120mVp-p	5mA	84mA	79	170μF
PFKC03-48S15	36 – 75 VDC	15 VDC	20mA	200mA	150mVp-p	5mA	84mA	79	110μF
PFKC03-48D05	36 – 75 VDC	± 5 VDC	±30mA	± 300mA	75mVp-p	5mA	86mA	77	± 500μF
PFKC03-48D12	36 – 75 VDC	± 12 VDC	±12mA	± 125mA	120mVp-p	5mA	84mA	79	± 96μF
PFKC03-48D15	36 – 75 VDC	± 15 VDC	±10mA	± 100mA	150mVp-p	5mA	84mA	79	± 47μF

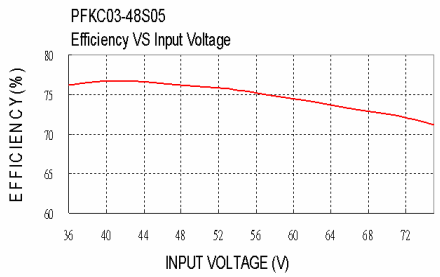
Note

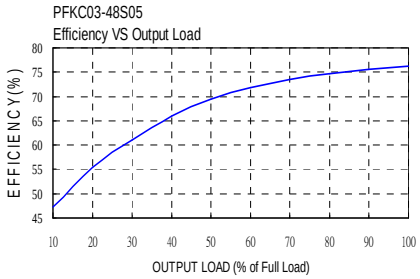
1. BELLCORE TR-NWT-000332. Case 1: 50% Stress, Temperature at 40ºC.
   MIL-HDBK-217F Notice2 @Ta=25 ºC, Full load(Ground, Benign, controlled environment).
2. Maximum value at nominal input voltage and full load.
3. Typical value at nominal input voltage and no load.
4. Typical value at nominal input voltage and full load.
5. Test by minimum Vin 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, ESR 48mΩ.
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.

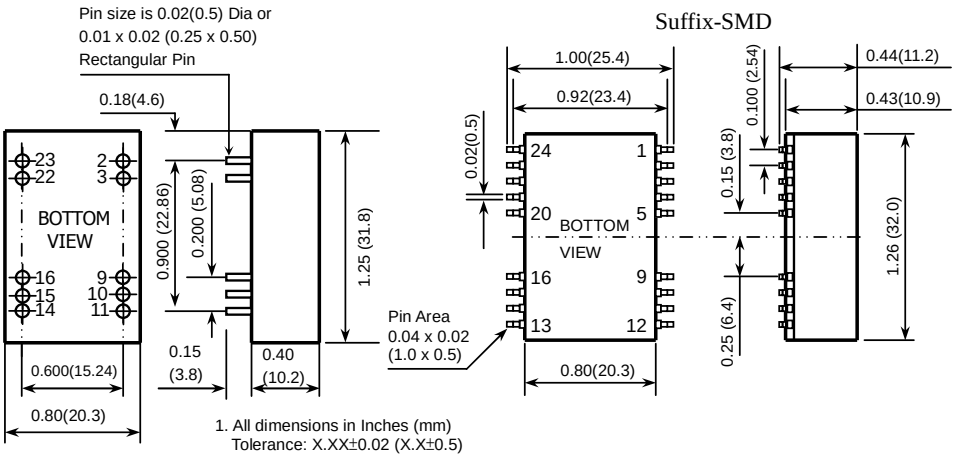


POWER MATE TECHNOLOGY CO.,LTD.

3 WATTS DC-DC CONVERTER







1. All dimensions in Inches (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	NC
11	NC	- OUTPUT	14	+ OUTPUT	+ OUTPUT
Others	NC	NC	Others	NC	NC

PEWATRON
a member of the Angst + Pfister Group

We are here for you. Addresses and Contacts

Sales Switzerland

Postcode 3000 – 9999
Liechtenstein

Matthias Rüegg
Ruhbergstrasse 32
CH-9230 Flawil

Phone + 41 44 877 35 18
Mobile + 41 76 491 66 66
Fax + 41 44 877 35 19

matthias.rueegg@pewatron.com

Postcode 1000 – 2999

Raffael Favaretto
Route d'Oron 124
CH-1673 Promasens

Phone + 41 44 877 35 22
Mobile + 41 76 444 63 14
Fax + 41 44 877 35 23

raffael.favaretto@pewatron.com

Sales Germany

Postcode 60000 – 79999

Dieter Hirthe
Mühlweg 23
D-71554 Weissach i.T.

Phone + 49 719 149 60 58
Mobile + 49 163 762 74 30
Fax + 49 719 193 31 88

dieter.hirthe@pewatron.com

Postcode 10000 – 59999
Postcode 80000 – 99999

Kurt Stritzelberger
Neumarkter Str. 86a
D-81673 Munich

Phone + 49 89 260 38 47
Mobile + 49 171 803 41 35
Fax + 49 89 43 10 91 91

kurt.stritzelberger@pewatron.com

Key Accounts
Aerospace and Defence

Claus Wübbena
Vogelkamp 26
D-26655 Westerstede

Phone + 49 4488 5204 614
Mobile + 49 173 9700 691
Fax + 49 4488 5204 616

claus.wuebbena@pewatron.com

Sales Austria

Kurt Stritzelberger
Neumarkter Str. 86a
D-81673 Munich

Phone + 49 89 260 38 47
Mobile + 49 17 18 03 41 35
Fax + 49 89 43 10 91 91

kurt.stritzelberger@pewatron.com

Sales Other Countries / Product Management

Sensors

Physical Sensors
Data Acquisition

Peter Felder
Phone + 41 44 877 35 05
peter.felder@pewatron.com

Geometrical Sensors

Eric Letsch
Phone + 41 44 877 35 14
eric.letsch@pewatron.com

Power Supplies

DC-DC Converters
Switching Power Supplies
DC-AC Inverters

Sebastiano Leggio
Phone + 41 44 877 35 06
sebastiano.leggio@pewatron.com

E-Components

Current Sensors
Man Machine Interface
Measurement Probes

Sebastiano Leggio
Phone + 41 44 877 35 06
sebastiano.leggio@pewatron.com

PEWATRON AG
Thurgauerstrasse 66
CH-8052 Zurich

Phone + 41 44 877 35 00
Fax + 41 44 877 35 25

www.pewatron.com
info@pewatron.com