



**POWER MATE
TECHNOLOGY CO.,LTD.**

FKC05(W) SERIES

1 / 3



APPLICATIONS

Wireless Network
Telecom/Datacom
Industry Control System
Measurement
Semiconductor Equipment

FEATURES

- 5 WATTS OUTPUT POWER
- OUTPUT CURRENT UP TO 1000mA
- STANDARD 1.25" X 0.8" X 0.4" INCH
- HIGH EFFICIENCY UP TO 84%
- 2:1 AND 4:1 WIDE INPUT VOLTAGE RANGE
- FIVE-SIDED SHIELD
- FIXED SWITCHING FREQUENCY
- 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, M1 TYPE, M2 TYPE

DESCRIPTION

The FKC05 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 FKC03 series. FKC05 series have 2:1 wide input voltage of 9-18, 18-36 and 36-75VDC. FKC05-W series have 4:1 ultra wide input voltage of 9-36 and 18-75VDC.

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		0%	
Line regulation	LL to HL at Full Load	± 0.2%	
Load regulation	No Load to Full Load	Single Dual	± 0.5% ± 1%
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	200uS
Over load protection	% of FL at nominal input		170%, typ
Short circuit protection		Continuous, automatics recovery	
GENERAL SPECIFICATIONS			
Efficiency		See table	
Isolation voltage	Input to Output	1600VDC, min	
	Input (Output) to Case	DIP	1600VDC, min
		SMD	1000VDC, min
Isolation resistance		10 ⁹ ohms, min	
Isolation capacitance		300pF, max	
Switching frequency		300KHz, typ	
Approvals and standard		IEC60950-1, UL60950-1, EN60950-1	
Case material		Nickel-coated copper	
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	16g (0.55oz)	
	SMD	18g (0.62oz)	
MTBF (Note 1)	BELLCORE TR-NWT-000332	3.165 x 10 ⁶ hrs	
	MIL-HDBK-217F	1.631 x 10 ⁶ hrs	

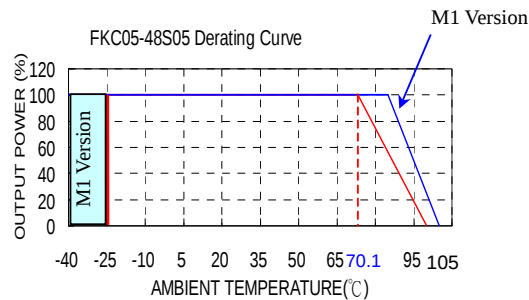
INPUT SPECIFICATIONS			
Input voltage range	FKC05	12V nominal input	9 – 18VDC
		24V nominal input	18 – 36VDC
	FKC05-W	48V nominal input	36 – 75VDC
		24V nominal input	9 – 36VDC
		48V nominal input	18 – 75VDC
Input filter		Pi type	
Input surge voltage 100mS max	12V input		36VDC
	24V input		50VDC
	48V input		100VDC
Input reflected ripple current	Nominal Vin and full load		20mA p-p
Start up time	Nominal Vin and constant resistive load	Power up	450mS, max
ENVIRONMENTAL SPECIFICATIONS			
Operating temperature range	Standard	-25°C~+85°C (with derating)	
	M1 (Note 6)	-40°C~+85°C (non-derating)	
	M2 (W series)	-40°C~+85°C (with derating)	
Maximum case temperature	Standard	+100°C	
	M1	+105°C	
Storage temperature range		-55°C ~ +105°C	
Thermal impedance	Nature convection		20°C/watt
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 7)	EN61000-4-5	± 1KV	Perf. Criteria B
Conducted immunity	EN61000-4-6	10 Vr.m.s	Perf. Criteria A

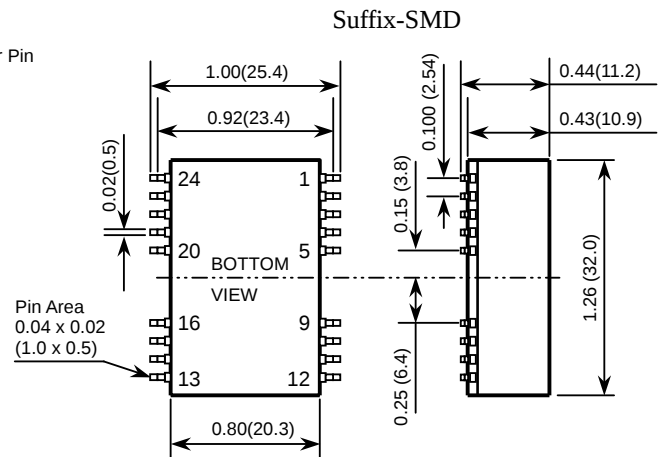
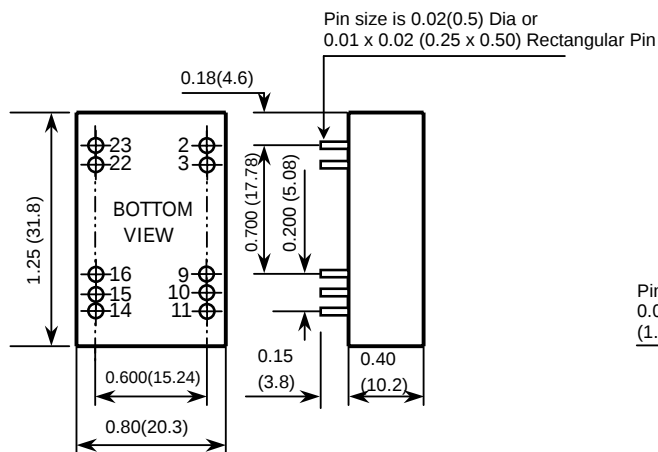
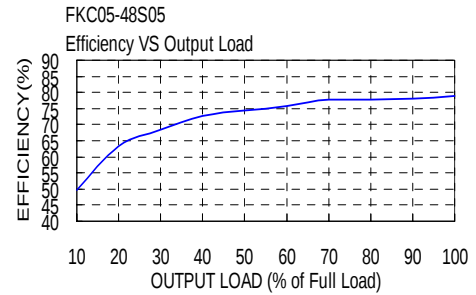
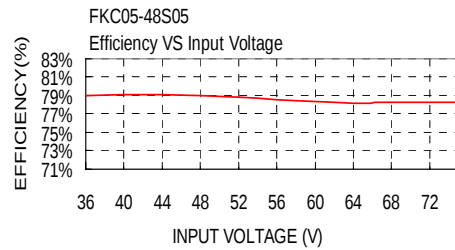


Model Number	Input Range	Output Voltage	Output Current		Output ⁽⁴⁾ Ripple & Noise	Input Current		Eff ⁽⁴⁾ (%)	Capacitor ⁽⁵⁾ Load max
			Min. load	Full load		No load ⁽³⁾	Full load ⁽²⁾		
FKC05-12S33	9 – 18 VDC	3.3 VDC	0mA	1000mA	50mVp-p	10mA	382mA	76	2200uF
FKC05-12S05	9 – 18 VDC	5 VDC	0mA	1000mA	50mVp-p	10mA	563mA	78	1000uF
FKC05-12S12	9 – 18 VDC	12 VDC	0mA	470mA	50mVp-p	10mA	603mA	82	220uF
FKC05-12S15	9 – 18 VDC	15 VDC	0mA	400mA	50mVp-p	10mA	649mA	81	150uF
FKC05-12D05	9 – 18 VDC	± 5 VDC	0mA	± 500mA	50mVp-p	15mA	563mA	78	± 680uF
FKC05-12D12	9 – 18 VDC	± 12 VDC	0mA	± 230mA	50mVp-p	20mA	597mA	81	± 100uF
FKC05-12D15	9 – 18 VDC	± 15 VDC	0mA	± 190mA	50mVp-p	15mA	594mA	84	± 68uF
FKC05-24S33 (W)	18 – 36 (9 – 36) VDC	3.3 VDC	0mA	1000mA	50mVp-p	10mA(5mA)	194mA (191mA)	75 (76)	2200uF
FKC05-24S05 (W)	18 – 36 (9 – 36) VDC	5 VDC	0mA	1000mA	50mVp-p	15mA(10mA)	285mA (278mA)	77 (79)	1000uF
FKC05-24S12 (W)	18 – 36 (9 – 36) VDC	12 VDC	0mA	470mA	50mVp-p	15mA(5mA)	305mA (305mA)	81 (81)	220uF
FKC05-24S15 (W)	18 – 36 (9 – 36) VDC	15 VDC	0mA	400mA	50mVp-p	15mA(10mA)	325mA (312mA)	81 (84)	150uF
FKC05-24D05 (W)	18 – 36 (9 – 36) VDC	± 5 VDC	0mA	± 500mA	50mVp-p	15mA(10mA)	274mA (282mA)	80 (78)	± 680uF
FKC05-24D12 (W)	18 – 36 (9 – 36) VDC	± 12 VDC	0mA	± 230mA	50mVp-p	20mA(10mA)	288mA (295mA)	84 (82)	± 100uF
FKC05-24D15 (W)	18 – 36 (9 – 36) VDC	± 15 VDC	0mA	± 190mA	50mVp-p	20mA(10mA)	308mA (297mA)	81 (84)	± 68uF
FKC05-48S33 (W)	36 – 75 (18 – 75) VDC	3.3 VDC	0mA	1000mA	50mVp-p	10mA(5mA)	98mA (100mA)	74 (73)	2200uF
FKC05-48S05 (W)	36 – 75 (18 – 75) VDC	5 VDC	0mA	1000mA	50mVp-p	10mA(10mA)	143mA (138mA)	77 (79)	1000uF
FKC05-48S12 (W)	36 – 75 (18 – 75) VDC	12 VDC	0mA	470mA	50mVp-p	10mA(10mA)	151mA (155mA)	82 (80)	220uF
FKC05-48S15 (W)	36 – 75 (18 – 75) VDC	15 VDC	0mA	400mA	50mVp-p	10mA(10mA)	162mA (160mA)	81 (82)	150uF
FKC05-48D05 (W)	36 – 75 (18 – 75) VDC	± 5 VDC	0mA	± 500mA	50mVp-p	10mA(10mA)	141mA (145mA)	78 (76)	± 680uF
FKC05-48D12 (W)	36 – 75 (18 – 75) VDC	± 12 VDC	0mA	± 230mA	50mVp-p	5mA(10mA)	147mA (151mA)	82 (80)	± 100uF
FKC05-48D15 (W)	36 – 75 (18 – 75) VDC	± 15 VDC	0mA	± 190mA	50mVp-p	10mA(10mA)	150mA (156mA)	83 (80)	± 68uF

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. Maximum value at nominal input voltage and full load of standard type.
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. M1 version is more efficient, therefore, it can be operated in a more extensive temperature range than standard and M2 version.
7. 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 μ F/100V, ESR 48m Ω
8. There is no pin at PIN10 & PIN15 for FKC05-W series.





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)

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(Note 8)	NC(Note 8)	15	NC(Note 8)	NC(Note 8)
11	NC	- OUTPUT	14	+ OUTPUT	+ OUTPUT

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