



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

FKC05-SERIES



UL E193009
TUV R3-50007936
CB JPTUV-003641
CE MARK

- 5 WATTS OUTPUT POWER
- 2:1 AND 4:1 WIDE INPUT VOLTAGE RANGE
- INTERNATIONAL SAFETY STANDARD APPROVAL
- FIVE-SIDED SHIELD
- HIGH EFFICIENCY UP TO 84%
- STANDARD 24 PIN DIP PACKAGE & SMD TYPE PACKAGE
- FIXED SWITCHING FREQUENCY

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. The FKC05 features 1600VDC of isolation, short-circuit protection and as well as five sided shielding. All models are particularly suited to telecommunications, industrial, mobile telecom and test equipment applications.

TECHNICAL SPECIFICATION

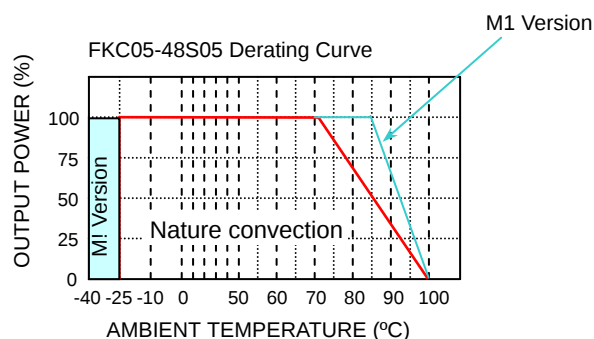
All specifications are typical at nominal input, full load and 25°C otherwise noted

OUTPUT SPECIFICATIONS

Output power	5 Watts max
Voltage accuracy	Full load and nominal Vin ± 2%
Minimum load (Note 1)	10% of FL
Line regulation	LL to HL at Full Load ± 0.2%
Load regulation	25% to 100% FL Single ± 0.5% Dual ± 1%
Cross regulation(Dual)	Asymmetrical load 25% / 100% FL ± 5%
Ripple and noise	20MHz bandwidth 50mVp-p
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

INPUT SPECIFICATIONS

Input voltage range	FKC05	12V nominal input	9 – 18VDC
		24V nominal input	18 – 36VDC
		48V nominal input	36 – 75VDC
	FKC05-W	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 (Note 2)	Nominal Vin and full load		20mAp-p
Start up time	Nominal Vin and constant resistor load		600mS typ



GENERAL SPECIFICATIONS

Efficiency	See table		
Isolation voltage	Input to Output		1600VDC, min
	Input (Output) to Case	DIP SMD	1600VDC, min 1000VDC, min
Isolation resistance	10 ⁹ ohms, min		
Isolation capacitance	300pF, max		
Switching frequency	300KHz, typ		
Approvals and standard	IEC60950, UL1950, EN60950		
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 3)	3.165 x 10 ⁶ hrs		

ENVIRONMENTAL SPECIFICATIONS

Operating temperature range	Standard	-25°C~+85°C (with derating)
	M1 (Note 4)	-40°C~+85°C (non-derating)
	M2 (W series)	-40°C~+85°C (with derating)
Maximum case temperature	+100°C	
Storage temperature range	-55°C ~ +105°C	
Thermal impedance	Nature convection	20°C/watt
Thermal shock	MIL-STD-810D	
Vibration	10~55Hz, 10G, 30minutues along X,Y and Z	
Relative humidity	5% to 95% RH	

EMC CHARACTERISTICS

Conducted emissions	EN55022	Class A
Radiated emissions	EN55022	Class A
ESD	EN61000-4-2	Perf. Criteria2
Radiated immunity	EN61000-4-3	Perf. Criteria2
Fast transient	EN61000-4-4	Perf. Criteria2
Surge	EN61000-4-5	Perf. Criteria2
Conducted immunity	EN61000-4-6	Perf. Criteria2

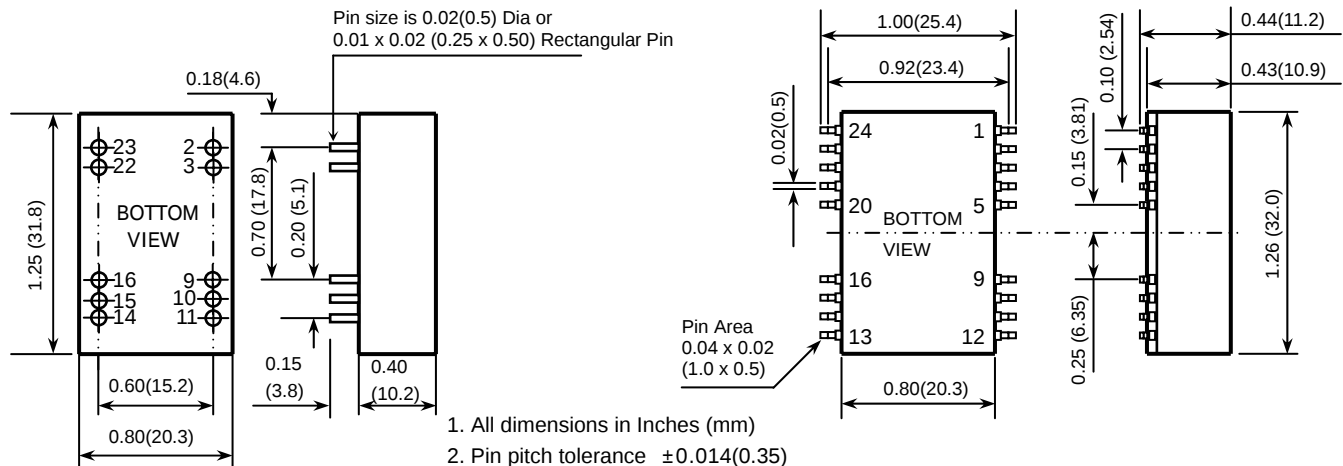


Model Number	Input Range	Output Voltage	Output Current	Input Current ⁽⁵⁾	Eff ⁽⁶⁾ (%)	Capacitor ⁽⁷⁾ Load max
FKC05-12S33	9 – 18 VDC	3.3 VDC	1000mA	382mA	76	2200uF
FKC05-12S05	9 – 18 VDC	5 VDC	1000mA	563mA	78	1000uF
FKC05-12S12	9 – 18 VDC	12 VDC	470mA	603mA	82	220uF
FKC05-12S15	9 – 18 VDC	15 VDC	400mA	649mA	81	150uF
FKC05-12D05	9 – 18 VDC	± 5 VDC	± 500mA	563mA	78	± 680uF
FKC05-12D12	9 – 18 VDC	± 12 VDC	± 230mA	597mA	81	± 100uF
FKC05-12D15	9 – 18 VDC	± 15 VDC	± 190mA	594mA	84	± 68uF
FKC05-24S33 (W)	18 – 36 (9 – 36) VDC	3.3 VDC	1000mA	194mA (191mA)	75 (76)	2200uF
FKC05-24S05 (W)	18 – 36 (9 – 36) VDC	5 VDC	1000mA	285mA (278mA)	77 (79)	1000uF
FKC05-24S12 (W)	18 – 36 (9 – 36) VDC	12 VDC	470mA	305mA (309mA)	81 (80)	220uF
FKC05-24S15 (W)	18 – 36 (9 – 36) VDC	15 VDC	400mA	325mA (312mA)	81 (84)	150uF
FKC05-24D05 (W)	18 – 36 (9 – 36) VDC	± 5 VDC	± 500mA	274mA (282mA)	80 (78)	± 680uF
FKC05-24D12 (W)	18 – 36 (9 – 36) VDC	± 12 VDC	± 230mA	288mA (295mA)	84 (82)	± 100uF
FKC05-24D15 (W)	18 – 36 (9 – 36) VDC	± 15 VDC	± 190mA	308mA (297mA)	81 (84)	± 68uF
FKC05-48S33 (W)	36 – 75 (18 – 75) VDC	3.3 VDC	1000mA	98mA (100mA)	74 (73)	2200uF
FKC05-48S05 (W)	36 – 75 (18 – 75) VDC	5 VDC	1000mA	143mA (138mA)	77 (79)	1000uF
FKC05-48S12 (W)	36 – 75 (18 – 75) VDC	12 VDC	470mA	151mA (155mA)	82 (80)	220uF
FKC05-48S15 (W)	36 – 75 (18 – 75) VDC	15 VDC	400mA	162mA (160mA)	81 (82)	150uF
FKC05-48D05 (W)	36 – 75 (18 – 75) VDC	± 5 VDC	± 500mA	141mA (145mA)	78 (76)	± 680uF
FKC05-48D12 (W)	36 – 75 (18 – 75) VDC	± 12 VDC	± 230mA	147mA (151mA)	82 (80)	± 100uF
FKC05-48D15 (W)	36 – 75 (18 – 75) VDC	± 15 VDC	± 190mA	154mA (159mA)	81 (79)	± 68uF

Note

1. The FKC05 (W) series required a minimum 10% 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.
2. Simulated source impedance of 12uH. 12uH inductor on series with + Vin.
3. BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40°C. (Ground fixed and controlled environment)
4. M1 version is more efficient, therefore, it can be operated in a more extensive temperature range than standard and M2 version
5. Maximum value at nominal input voltage and full load of standard type.
6. Typical value at nominal input voltage and full load
7. Test by minimum Vin and constant resistor load.
8. There is no pin at PIN10 & PIN15 for FKC05-W series

Suffix-SMD



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(Note 8)	NC(Note 8)	15	NC(Note 8)	NC(Note 8)
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