POWER MATE TECHNOLOGY CO.,LTD.

FKC03-SERIES

- 3 WATTS REGULATED OUTPUT POWER
- 2:1 WIDE INPUT VOLTAGE RANGE
- INTERNATIONAL SAFETY STANDARD APPROVAL
- FIVE-SIDED SHIELD
- HIGH EFFICIENCY UP TO 82%
- STANDARD 24 PIN DIP PACKAGE & SMD TYPE PACKAGE
- OVER CURRENT PROTECTION

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

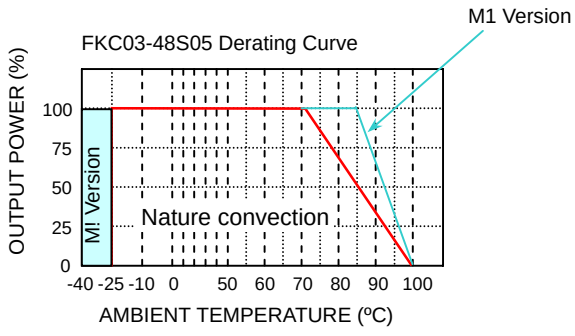
UL E193009
TUV
CB
CE MARK

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 1)			10% of FL
Line regulation	LL to HL at Full Load		± 0.2%
Load regulation	25% to 100% FL	Single Dual	± 0.2% ± 1%
Cross regulation(Dual)	Asymmetrical load 25% / 100% FL		± 5%
Ripple and noise	20MHz bandwidth		50mVp-p
Temperature coefficient			±0.02% / ºC, max
Transient response recovery time	25% load step change		200uS
Over load protection	% of FL at nominal input		180%, typ
Short circuit protection			Continuous, automatics recovery

INPUT SPECIFICATIONS			
Input voltage range		12V nominal input 24V nominal input 48V nominal input	9 – 18VDC 18 – 36VDC 36 – 75VDC
Input filter			Pi type
Input surge voltage 100mS max		12V input 24V input 48V input	36VDC 50VDC 100VDC
Input reflected ripple (Note 2)		Nominal Vin and full load	20mAp-p
Start up time	Nominal Vin and constant resistive load	Power up	350mS, max



GENERAL SPECIFICATIONS			
Efficiency			See table
Isolation voltage	Input to Output Input(Output) to Case	DIP SMD	1600VDC, min 1600VDC, min 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 SMD		16g (0.55oz) 18g (0.62oz)
MTBF (Note 3)			3.155 x 10^6 hrs

ENVIRONMENTAL SPECIFICATIONS		
Operating temperature range	Standard M1 (Note 4)	-25ºC~+85ºC (with derating) -40ºC~+85ºC (non-derating)
Maximum case temperature		+100ºC
Storage temperature range		-55ºC ~ +105ºC
Thermal impedance	Nature convection	20ºC/watt
Thermal shock		MIL-STD-810D
Vibration		10~55Hz, 10G, 30minutes 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. CriteriaB
Radiated immunity	EN61000-4-3	Perf. CriteriaA
Fast transient	EN61000-4-4	Perf. CriteriaB
Surge	EN61000-4-5	Perf. CriteriaB
Conducted immunity	EN61000-4-6	Perf. CriteriaA

Model Number	Input Range	Output Voltage	Output Current	Input Current (5)	Eff (6) (%)	Capacitor(7) Load max
FKC03-12S33	9 – 18 VDC	3.3 VDC	500mA	194mA	75	2200uF
FKC03-12S05	9 – 18 VDC	5 VDC	500mA	289mA	76	1000uF
FKC03-12S12	9 – 18 VDC	12 VDC	250mA	329mA	80	220uF
FKC03-12S15	9 – 18 VDC	15 VDC	200mA	325mA	81	150uF
FKC03-12D05	9 – 18 VDC	± 5 VDC	± 250mA	282mA	78	± 470uF
FKC03-12D12	9 – 18 VDC	± 12 VDC	± 125mA	329mA	80	± 100uF
FKC03-12D15	9 – 18 VDC	± 15 VDC	± 100mA	321mA	82	± 68uF
FKC03-24S33	18 – 36 VDC	3.3 VDC	500mA	101mA	72	2200uF
FKC03-24S05	18 – 36 VDC	5 VDC	500mA	149mA	74	1000uF
FKC03-24S12	18 – 36 VDC	12 VDC	250mA	169mA	78	220uF
FKC03-24S15	18 – 36 VDC	15 VDC	200mA	169mA	78	150uF
FKC03-24D05	18 – 36 VDC	± 5 VDC	± 250mA	149mA	74	± 470uF
FKC03-24D12	18 – 36 VDC	± 12 VDC	± 125mA	171mA	77	± 100uF
FKC03-24D15	18 – 36 VDC	± 15 VDC	± 100mA	171mA	77	± 68uF
FKC03-48S33	36 – 75 VDC	3.3 VDC	500mA	49mA	74	2200uF
FKC03-48S05	36 – 75 VDC	5 VDC	500mA	75mA	74	1000uF
FKC03-48S12	36 – 75 VDC	12 VDC	250mA	83mA	79	220uF
FKC03-48S15	36 – 75 VDC	15 VDC	200mA	84mA	78	150uF
FKC03-48D05	36 – 75 VDC	± 5 VDC	± 250mA	76mA	73	± 470uF
FKC03-48D12	36 – 75 VDC	± 12 VDC	± 125mA	83mA	79	± 100uF
FKC03-48D15	36 – 75 VDC	± 15 VDC	± 100mA	86mA	77	± 68uF

Note

1. The FKC03 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. Please add an external filter at converter input terminals when measuring input reflected ripple, as figure1.
   L：Simulated source impedance of 12 uH C：Nippon chemi-con KMF series 47uF/100V
3. BELLCORE TR-NWT-000332. Case 1：
   50% Stress, Temperature at 40ºC. (Ground fixed and controlled environment)
4. M1 version is more efficient, therefore, it can be operated in a more extensive temperature range than standard.
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 resistive load.

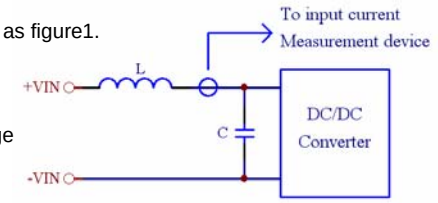
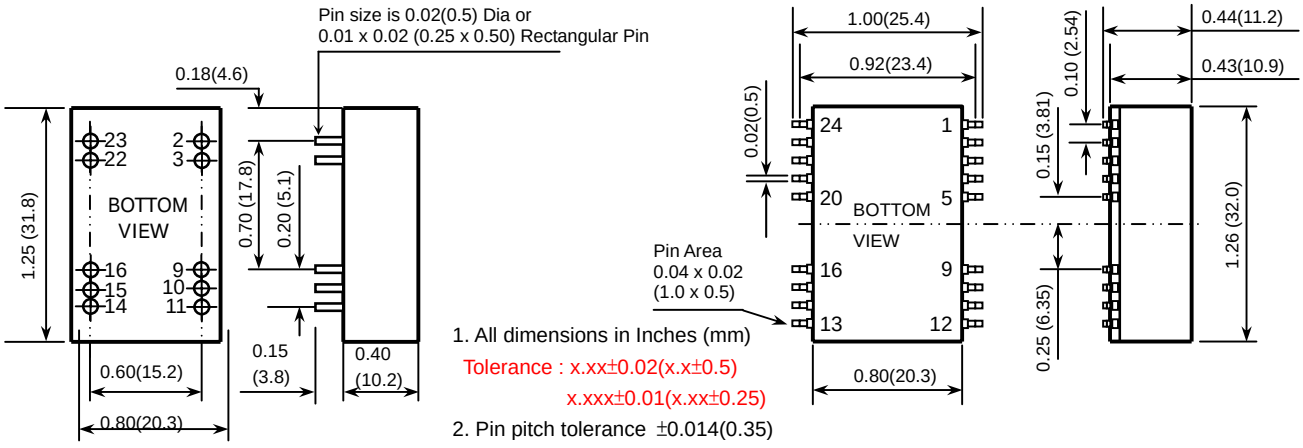


Figure 1

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