



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

FKC12W SERIES



- 12 WATTS OUTPUT POWER
- 4:1 ULTRA WIDE INPUT VOLTAGE RANGE
- FIVE-SIDED CONTINUOUS SHIELD
- HIGH EFFICIENCY UP TO **88%**
- STANDARD 24 PIN DIP PACKAGE
- FIXED SWITCHING FREQUENCY
- RoHS DIRECTIVE COMPLIANT



The FKC12W series offer 12 watts of output power from a package in an IC compatible 24pin DIP configuration. FKC12W series have 4:1 ultra wide input voltage of 9-36 and 18-75VDC. The FKC12W 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			12 Watts max
Voltage accuracy	Full load and nominal Vin		±1.2%
Line regulation	LL to HL at Full Load		± 0.2%
Load regulation	0% to 100% Load	Single	±0.5%
		Dual	± 1 %
Cross regulation (Dual)	Asymmetrical load 25% / 100% FL		± 5%
Ripple and noise	20MHz bandwidth		85mVp-p
Temperature coefficient			±0.02% / °C, max
Transient response recovery time	25% load step change		250uS
Over voltage protection (only single)	3.3V output		3.9V
	5.1V output		6.2V
	12V output		15V
	15V output		18V
Over load protection	% of FL at nominal input		150% typ
Short circuit protection	Continuous, automatic recovery		
INPUT SPECIFICATIONS			
Input voltage range	24V nominal input		9 – 36VDC
	48V nominal input		18 – 75VDC
Under voltage lockout	24V input	DC-DC ON	9VDC
		DC-DC OFF	8VDC
	48V input	DC-DC ON	18VDC
		DC-DC OFF	16VDC
Input filter	PI type		
Input voltage variation	dv/dt		5V/ms,max (Complies with ETS300 132 part 4.4)
Input surge voltage 100mS max	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,typ
		Remote ON/OFF	5mS,max
Remote ON/OFF (Note1)	DC-DC ON	Open or 3.0V < Vr < 12V	
		DC-DC OFF	Short or 0V < Vr < 1.2V
Remote off input current	Nominal Vin		2.5mA

GENERAL SPECIFICATIONS			
Efficiency			See table
Isolation voltage	Input to Output		1600VDC, min
	Input(Output) to Case		1600VDC, min
Isolation resistance			10 ⁹ ohms, min
Isolation capacitance			1500pF, max
Switching frequency			400KHz, typ
Safety standard pending	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	18g (0.63oz)		
MTBF (Note 2)	BELLCORE-TR-NWT-000332		2.35 x 10 ⁵ hrs
	MIL-STD-217F		8.745 x 10 ⁵ hrs
ENVIRONMENTAL SPECIFICATIONS			
Operating ambient temperature	Vo:5.1V,12V,15V, ±12V,±15V	-40°C to +65°C (without derating)	
		+65°C to +105°C (with derating)	
	Vo:3.3V,±5V	-40°C to +61°C (without derating)	
		+61°C to +105°C (with derating)	
Maximum case temperature	105°C		
Storage temperature range	-55°C to +125°C		
Thermal impedance	Nature convection		20°C/Watt
Thermal shock	MIL-STD-810D		
Vibration	10~55Hz, 10G, 30minutes along X,Y and Z		
Relative humidity	5% to 95% RH		
EMC CHARACTERISTICS(Note 3)			
Conducted emissions	EN55022		CLASS A
Radiated emissions	EN55022		CLASS A
ESD	EN61000-4-2		Perf. Criteria B
Radiated immunity	EN61000-4-3		Perf. Criteria A
Fast transient	EN61000-4-4		Perf. Criteria B
Surge	EN61000-4-5		Perf. Criteria B
Conducted immunity	EN61000-4-6		Perf. Criteria A

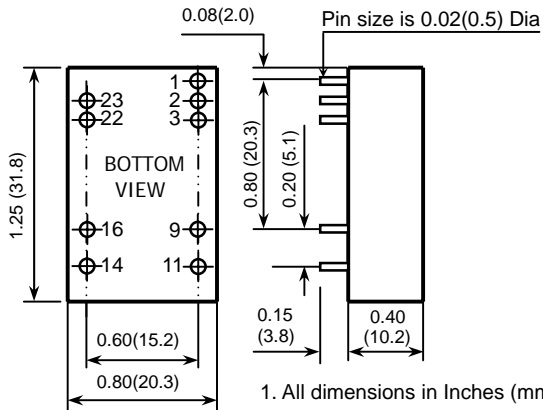
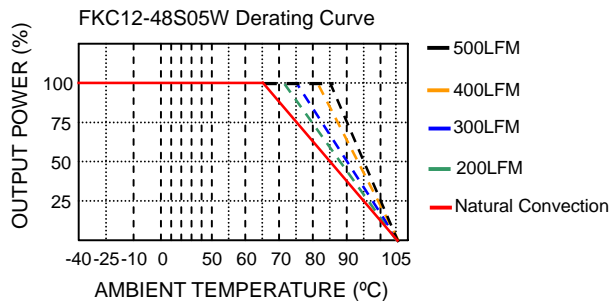
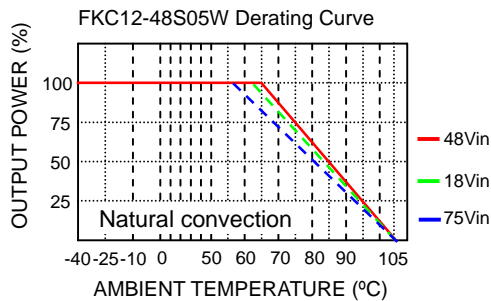


12WATTS OUTPUT DC-DC CONVERTER

Model Number	Input Range	Output Voltage	Output Current		Input Current		Eff ⁽⁶⁾ (%)	Capacitor ⁽⁷⁾ Load max
			Min. Load	Max. Load	No load ⁽⁴⁾	Full Load ⁽⁵⁾		
FKC12-24S3P3W	9 – 36 VDC	3.3 VDC	0mA	3500mA	55mA	602mA	84	2000uF
FKC12-24S05W	9 – 36 VDC	5.1 VDC	0mA	2400mA	55mA	614mA	87	2000uF
FKC12-24S12W	9 – 36 VDC	12 VDC	0mA	1000mA	25mA	610mA	86	430uF
FKC12-24S15W	9 – 36 VDC	15 VDC	0mA	800mA	25mA	610mA	86	300uF
FKC12-24D05W	9 – 36 VDC	± 5 VDC	0mA	± 1200mA	20mA	625mA	84	± 1250uF
FKC12-24D12W	9 – 36 VDC	± 12 VDC	0mA	± 500mA	25mA	610mA	86	± 200uF
FKC12-24D15W	9 – 36 VDC	± 15 VDC	0mA	± 400mA	25mA	610mA	86	± 120uF
FKC12-48S3P3W	18 – 75 VDC	3.3 VDC	0mA	3500mA	20mA	301mA	84	2000uF
FKC12-48S05W	18 – 75 VDC	5.1 VDC	0mA	2400mA	20mA	307mA	87	2000uF
FKC12-48S12W	18 – 75 VDC	12 VDC	0mA	1000mA	13mA	302mA	87	430uF
FKC12-48S15W	18 – 75 VDC	15 VDC	0mA	800mA	13mA	298mA	88	300uF
FKC12-48D05W	18 – 75 VDC	± 5 VDC	0mA	± 1200mA	10mA	309mA	85	± 1250uF
FKC12-48D12W	18 – 75 VDC	± 12 VDC	0mA	± 500mA	13mA	301mA	87	± 200uF
FKC12-48D15W	18 – 75 VDC	± 15 VDC	0mA	± 400mA	13mA	301mA	87	± 120uF

Note

1. The ON/OFF control pin voltage is referenced to negative input.
2. BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40°C. (Ground fixed and controlled environment) MIL-STD-217F Notice2 @Ta=25 °C, Full load(Ground, Benign, controlled environment)
3. The FKC12W series series required external filter to meets EN55022 class A (TBD).
4. Typical value at nominal input voltage and no load.
5. Maximum value at nominal input voltage .
6. Typical value at nominal input voltage and full load.
7. Test by minimum Vin and constant resistive load.



1. All dimensions in Inches (mm)
Tolerance X.XX±0.02(X.X±0.5)
2. Pin pitch tolerance ±0.014(0.35)

DIP PIN CONNECTION					
PIN	SINGLE	DUAL	PIN	SINGLE	DUAL
1	CTRL	CTRL			
2	- INPUT	- INPUT	23	+ INPUT	+ INPUT
3	- INPUT	- INPUT	22	+ INPUT	+ INPUT
9	NC	COMMON	16	- OUTPUT	COMMON
11	NC	- OUTPUT	14	+ OUTPUT	+ OUTPUT