



FEATURES

- 8 WATTS OUTPUT POWER
- OUTPUT CURRENT UP TO 2A
- STANDARD 1.25 X 0.80 X 0.40 INCH
- HIGH EFFICIENCY UP TO 88%
- 2:1 WIDE INPUT VOLTAGE RANGE
- FIVE-SIDED CONTINUOUS SHIELD
- FIXED SWITCHING FREQUENCY (300KHz)
- 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 FKC08 series offer 8 watts of output power from a package in an IC compatible 24pin DIP configuration. FKC08 series have 2:1 wide input voltage of 9-18, 18-36 and 36-75VDC. The FKC08 have features 1600VDC of isolation, short circuit protection and as well as five sided shielding.

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

OUTPUT SPECIFICATIONS			
Output power		8 Watts, max.	
Voltage accuracy		± 1%	
Minimum load		0%	
Line regulation	LL to HL at Full Load		± 0.2%
Load regulation	No Load to Full Load	Single (DIP)	± 0.5%
		Single (SMD)	± 1%
		Dual (SMD,DIP)	± 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	200µS
Over load protection	% of FL at nominal input		150%
Short circuit protection		Continuous, automatics recovery	
GENERAL SPECIFICATIONS			
Efficiency		See table	
Isolation voltage	Input to Output	1600VDC, min. 1minute	
	Input(Output) to Case	DIP	1600VDC, min. 1minute
		SMD	1600VDC, min. 1minute
Isolation resistance		10 ⁹ ohms, min.	
Isolation capacitance		300pF, max.	
Switching frequency		300KHz±10%.	
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		3.053 x 10 ⁶ hrs
	MIL-HDBK-217F		1.213 x 10 ⁶ hrs

INPUT SPECIFICATIONS			
Input voltage range	12VDC nominal input	9 ~ 18VDC	
	24VDC nominal input	18 ~ 36VDC	
	48VDC nominal input	36 ~ 75VDC	
Input filter		Pi type	
Input surge voltage	12VDC input	36VDC 100mS,max.	
	24VDC input	50VDC 100mS,max.	
	48VDC input	100VDC 100mS,max.	
Input reflected ripple current		20mA _{p-p}	
Start up time	Nominal input and constant resistive load	Power up	700mS
Remote ON/OFF (Note 5)			
(Positive logic)	DC-DC ON	Open or 3.5V < Vr < 12V	
	DC-DC OFF	Short or 0V < Vr < 1.2V	
Input current of remote control pin	Nominal input	-0.5mA ~ 0.5mA	
Remote off state input current	Nominal input	2.5mA	
ENVIRONMENTAL SPECIFICATIONS			
Operating ambient temperature		-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-810F	
Vibration		MIL-STD-810F	
Relative humidity		5% to 95% RH	
EMC CHARACTERISTICS			
EMI (Note 6)	EN55022		Class A
ESD	EN61000-4-2	Air Contact	± 8KV ± 6KV Perf. Criteria A
Radiated immunity	EN61000-4-3	10 V/m	Perf. Criteria A
Fast transient (Note 7)	EN61000-4-4	± 2KV	Perf. Criteria A
Surge (Note 7)	EN61000-4-5	± 1KV	Perf. Criteria A
Conducted immunity	EN61000-4-6	10 Vr.m.s	Perf. Criteria A

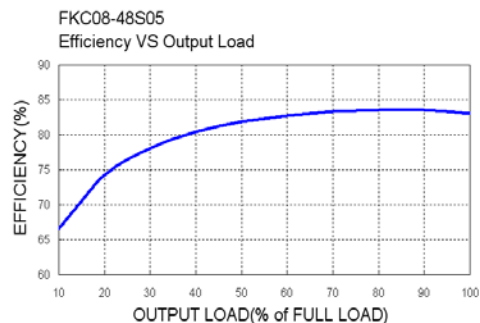
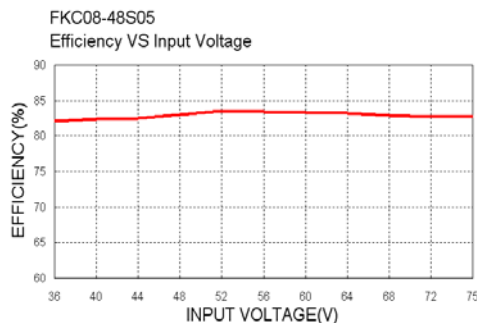
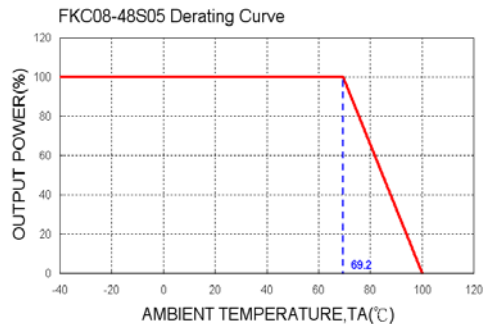


Model Number	Input Range	Output Voltage	Output Current		Output Ripple & Noise	No load ⁽²⁾ Input Current	Eff ⁽³⁾ (%)	Capacitor ⁽⁴⁾ Load max
			Min. load	Full load				
FKC08-12S33	9 ~ 18 VDC	3.3 VDC	0mA	2000mA	50mVp-p	10mA	80	3300μF
FKC08-12S05	9 ~ 18 VDC	5 VDC	0mA	1500mA	50mVp-p	15mA	83	1600μF
FKC08-12S12	9 ~ 18 VDC	12 VDC	0mA	666mA	50mVp-p	13mA	88	350μF
FKC08-12S15	9 ~ 18 VDC	15 VDC	0mA	533mA	50mVp-p	20mA	87	240μF
FKC08-12D05	9 ~ 18 VDC	± 5 VDC	0mA	± 800mA	50mVp-p	15mA	83	± 1000μF
FKC08-12D12	9 ~ 18 VDC	± 12 VDC	0mA	± 333mA	50mVp-p	20mA	87	± 160μF
FKC08-12D15	9 ~ 18 VDC	± 15 VDC	0mA	± 267mA	50mVp-p	20mA	85	± 100μF
FKC08-24S33	18 ~ 36 VDC	3.3 VDC	0mA	2000mA	50mVp-p	10mA	80	3300μF
FKC08-24S05	18 ~ 36 VDC	5 VDC	0mA	1500mA	50mVp-p	30mA	83	1600μF
FKC08-24S12	18 ~ 36 VDC	12 VDC	0mA	666mA	50mVp-p	13mA	86	350μF
FKC08-24S15	18 ~ 36 VDC	15 VDC	0mA	533mA	50mVp-p	15mA	85	240μF
FKC08-24D05	18 ~ 36 VDC	± 5 VDC	0mA	± 800mA	50mVp-p	15mA	82	± 1000μF
FKC08-24D12	18 ~ 36 VDC	± 12 VDC	0mA	± 333mA	50mVp-p	15mA	86	± 160μF
FKC08-24D15	18 ~ 36 VDC	± 15 VDC	0mA	± 267mA	50mVp-p	13mA	85	± 100μF
FKC08-48S33	36 ~ 75 VDC	3.3 VDC	0mA	2000mA	50mVp-p	7mA	80	3300μF
FKC08-48S05	36 ~ 75 VDC	5 VDC	0mA	1500mA	50mVp-p	8mA	83	1600μF
FKC08-48S12	36 ~ 75 VDC	12 VDC	0mA	666mA	50mVp-p	10mA	86	350μF
FKC08-48S15	36 ~ 75 VDC	15 VDC	0mA	533mA	50mVp-p	10mA	86	240μF
FKC08-48D05	36 ~ 75 VDC	± 5 VDC	0mA	± 800mA	50mVp-p	8mA	85	± 1000μF
FKC08-48D12	36 ~ 75 VDC	± 12 VDC	0mA	± 333mA	50mVp-p	8mA	87	± 160μF
FKC08-48D15	36 ~ 75 VDC	± 15 VDC	0mA	± 267mA	50mVp-p	7mA	87	± 100μF

Note

- 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).
- Typical value at nominal input voltage and no load.
- Typical value at nominal input voltage and full load.
- Test by minimum input and constant resistive load.
- The ON/OFF control pin voltage is referenced to -INPUT.
- The FKC08 series can meet EN55022 Class A with parallel an external capacitor to the input pins.
Recommend: 12Vin: 4.7μF/25V 1210 MLCC . 24Vin : N/A . 48Vin : N/A.
- 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.

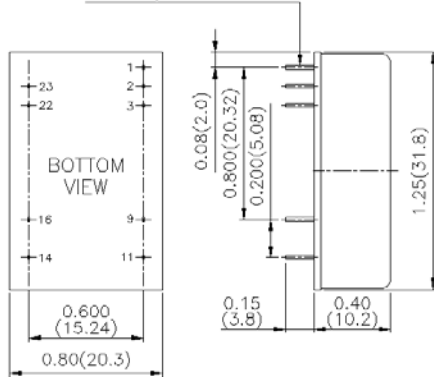
CAUTION: This power module is not internally fused. An input line fuse must always be used.



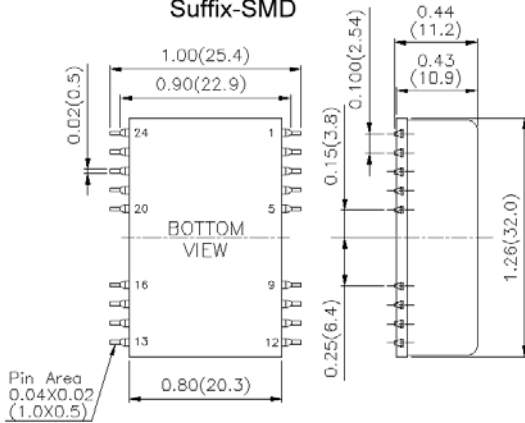


Mechanical Drawing:

... Size is 0.02(0.5) Dia or
0.01X0.02(0.25X0.50)
Rectangular Pin

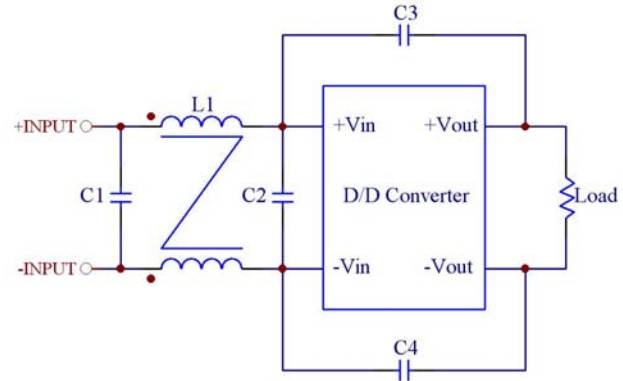


Suffix-SMD



1. All dimensions in Inch (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)

Recommended EMI Filter:



Recommended Filter for EN55022 Class B Compliance

The components used in the above figure, together with the manufacturers' part numbers for these components, are as follows:

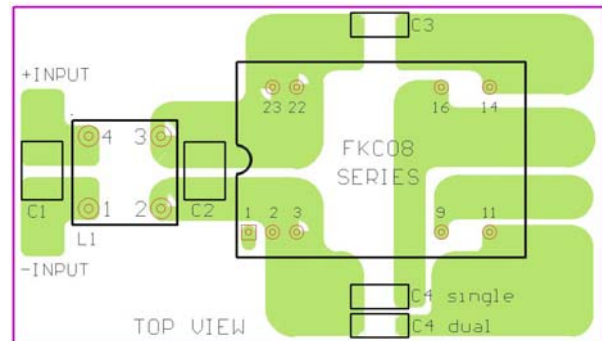
	C1	C2	C3	C4	L1
FKC08-12xxx	4.7µF/50V 1812 MLCC	N/A	1000pF/2KV MLCC	1000pF/2KV MLCC	325µH Common Choke PMT-050
FKC08-24xxx	6.8µF/50V 1812 MLCC	N/A	1000pF/2KV MLCC	1000pF/2KV MLCC	325µH Common Choke PMT-050
FKC08-48xxx	2.2µF/100V 1812 MLCC	2.2µF/100V 1812 MLCC	1000pF/2KV MLCC	1000pF/2KV MLCC	325µH Common Choke PMT-050

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

SMD 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
Others	NC	NC	Others	NC	NC



Recommended EN55022 Class B Filter Circuit Layout

