



APPLICATIONS

Wireless Network
Telecom/Datacom
Industry Control System
Measurement
Semiconductor Equipment

FEATURES

- 8 WATTS OUTPUT POWER
- OUTPUT CURRENT UP TO 2.4A
- STANDARD 1.25 X 0.80 X 0.40 INCH
- HIGH EFFICIENCY UP TO 88%
- 4:1 ULTRA WIDE INPUT VOLTAGE RANGE
- FIVE-SIDED CONTINUOUS SHIELD
- FIXED SWITCHING FREQUENCY (300KHz)
- STANDARD 24 PIN DIP 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

DESCRIPTION

The FKC08W series offer 8 watts of output power from a package in an IC compatible 24pin DIP configuration. FKC08W series have 4:1 ultra wide input voltage of 9-36, 18-75VDC. The FKC08W 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	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 (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	250µs
Over voltage protection (only single)	3.3V output	3.9V
	5.0V output	6.2V
	12V output	15V
	15V output	18V
Over load protection	% of FL at nominal input	150% 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		1500pF, 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	18g (0.63oz)	
MTBF (Note 1)	BELLCORE-TR-NWT-000332	2.350 x 10 ⁶ hrs
	MIL-HDBK-217F	1.078 x 10 ⁶ hrs

INPUT SPECIFICATIONS		
Input voltage range	24V nominal input	9 – 36VDC
	48V nominal input	18 – 75VDC
Input filter	Pi type	
Input voltage variation	dv/dt	5V/ms,max (Complies with ETS300 132 part 4.4)
Input surge voltage	24V input	50VDC
	100mS max	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
Start-up voltage	24V input	9VDC
	48V input	18VDC
Shutdown voltage	24V input	8VDC
	48V input	16VDC
Remote ON/OFF (Note 6)	DC-DC ON	Open or 3.0V < Vr < 12V
	DC-DC OFF	Short or 0V < Vr < 1.2V
	Input current of Remote control pin	Nominal Vin -0.5mA ~ 0.5mA
Remote off state input current	Nominal Vin 2.5mA	

ENVIRONMENTAL SPECIFICATIONS		
Operating ambient temperature	Vo:5V,12V,15V ±12V,±15V	-40°C to +81°C (without derating)
		+81°C to +105°C (with derating)
	Vo:3.3V;±5V	-40°C to +74°C (without derating)
		+74°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-810F	
Vibration	10~55Hz, 10G, 30minutes along X,Y and Z	
Relative humidity	5% to 95% RH	

EMC CHARACTERISTICS			
EMI (Note 7)	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 8)	EN61000-4-5	± 1KV	Perf. Criteria B
Conducted immunity	EN61000-4-6	10 Vr.m.s	Perf. Criteria A

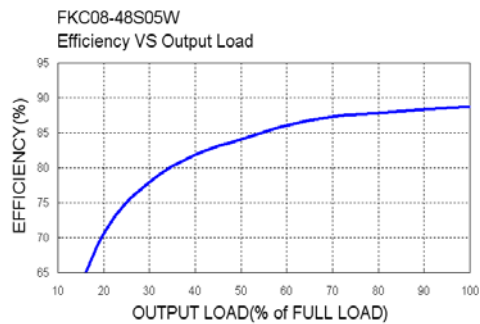
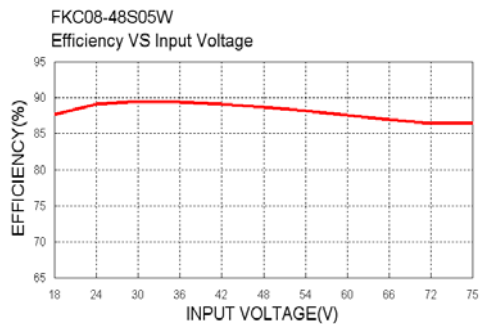
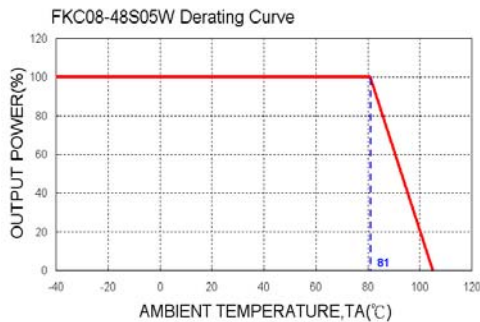


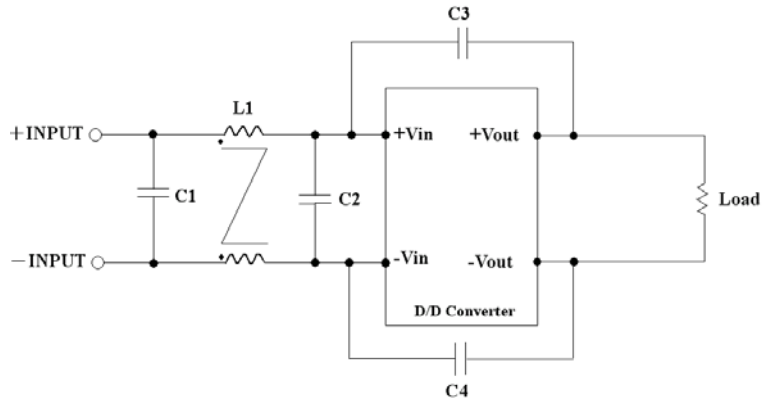
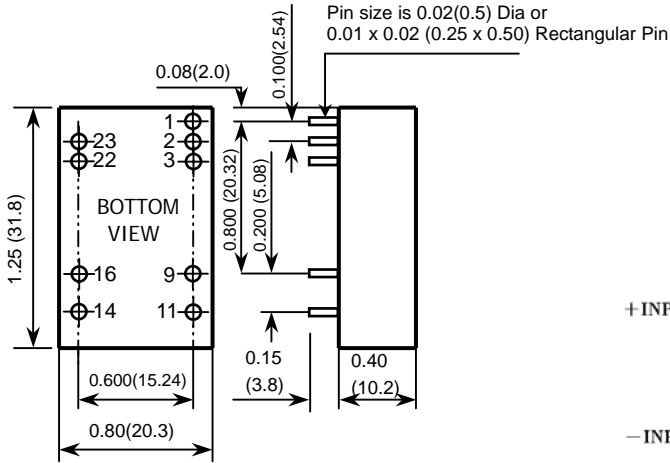


Model Number	Input Range	Output Voltage	Output Current		Output ⁽⁴⁾ Ripple & Noise	Input Current		Eff ⁽⁴⁾ (%)	Capacitor ⁽⁵⁾ Load max
			Min. Load	Max. Load		No load ⁽³⁾	Full Load ⁽²⁾		
FKC08-24S3P3W	9 – 36 VDC	3.3 VDC	0mA	2400mA	50mVp-p	40mA	407mA	85	1330uF
FKC08-24S05W	9 – 36 VDC	5 VDC	0mA	1600mA	50mVp-p	40mA	402mA	87	1330uF
FKC08-24S12W	9 – 36 VDC	12 VDC	0mA	666mA	50mVp-p	25mA	407mA	86	288uF
FKC08-24S15W	9 – 36 VDC	15 VDC	0mA	533mA	50mVp-p	25mA	407mA	86	200uF
FKC08-24D05W	9 – 36 VDC	± 5 VDC	0mA	± 800mA	50mVp-p	20mA	417mA	84	± 900uF
FKC08-24D12W	9 – 36 VDC	± 12 VDC	0mA	± 333mA	50mVp-p	25mA	407mA	86	± 133uF
FKC08-24D15W	9 – 36 VDC	± 15 VDC	0mA	± 267mA	50mVp-p	25mA	407mA	86	± 90uF
FKC08-48S3P3W	18 – 75 VDC	3.3 VDC	0mA	2400mA	50mVp-p	20mA	204mA	85	1330uF
FKC08-48S05W	18 – 75 VDC	5 VDC	0mA	1600mA	50mVp-p	20mA	201mA	87	1330uF
FKC08-48S12W	18 – 75 VDC	12 VDC	0mA	666mA	50mVp-p	13mA	201mA	87	288uF
FKC08-48S15W	18 – 75 VDC	15 VDC	0mA	533mA	50mVp-p	13mA	198mA	88	200uF
FKC08-48D05W	18 – 75 VDC	± 5 VDC	0mA	± 800mA	50mVp-p	10mA	208mA	84	± 900uF
FKC08-48D12W	18 – 75 VDC	± 12 VDC	0mA	± 333mA	50mVp-p	13mA	201mA	87	± 133uF
FKC08-48D15W	18 – 75 VDC	± 15 VDC	0mA	± 267mA	50mVp-p	13mA	201mA	87	± 90uF

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)
- Maximum value at nominal input voltage and full load.
- Typical value at nominal input voltage and no load.
- Typical value at nominal input voltage and full load.
- Test by minimum Vin and constant resistive load.
- The ON/OFF control pin voltage is referenced to -Vin.
- The FKC08W series can meet EN55022 Class A with parallel an external capacitor to the input pins.
Recommend : 24Vin : 1μF/50V 1210 MLCC .
48Vin : 0.47μF/100V 1812 MLCC.
- 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 μF/100V, ESR 48mΩ.





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
FKC08-24xxxW	4.7uF/50V 1812 MLCC	N/A	1000pF/2KV MLCC	1000pF/2KV MLCC	325uH Common Choke PMT-050
FKC08-48xxxW	1.5uF/100V 1812 MLCC	1.5uF/100V 1812 MLCC	1000pF/2KV MLCC	1000pF/2KV MLCC	325uH Common Choke PMT-050

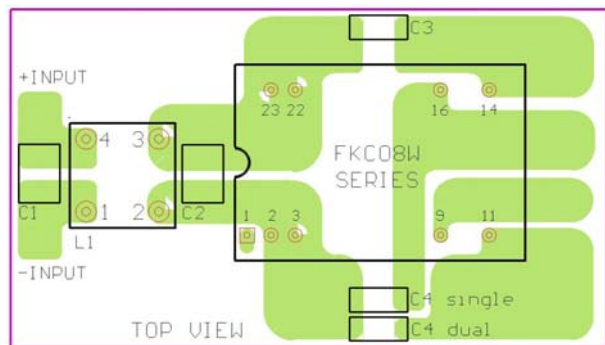
- All dimensions in Inches (mm)
Tolerance: X.XX±0.02 (X.X±0.5)
X.XXX±0.01 (X.XX±0.25)
- Pin pitch tolerance ±0.01(0.25)
- Pin dimension tolerance ±0.004 (0.1)

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