



APPLICATIONS

Wireless Network
Telecom/Datacom
Industry Control System
Measurement Equipment
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 3.9VDC
	5.0V output 6.2VDC
	12V output 15VDC
	15V output 18VDC
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 (0.62oz)
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 surge voltage	24V input 50VDC
	100mS max 48V input 100VDC
Input reflected ripple current	Nominal Vin and full load 20mAp-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	MIL-STD-810F
Relative humidity	5% to 95% RH

EMC CHARACTERISTICS	
EMI (Note 7)	EN55022 Class A
ESD	Air ± 8KV Perf. Criteria B
	Contact ± 6KV Perf. Criteria B
Radiated immunity	EN61000-4-3 10 V/m Perf. Criteria A
Fast transient (Note 8)	EN61000-4-4 ± 2KV Perf. Criteria A
Surge (Note 8)	EN61000-4-5 ± 1KV Perf. Criteria A
Conducted immunity	EN61000-4-6 10 Vr.m.s Perf. Criteria A

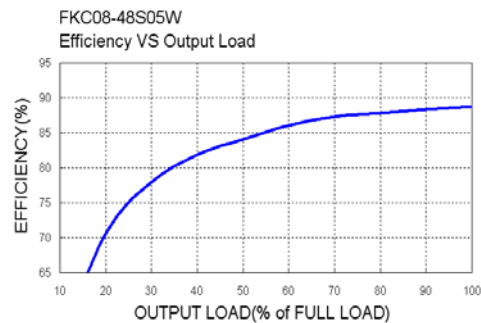
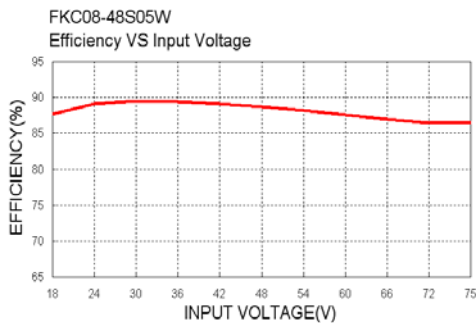
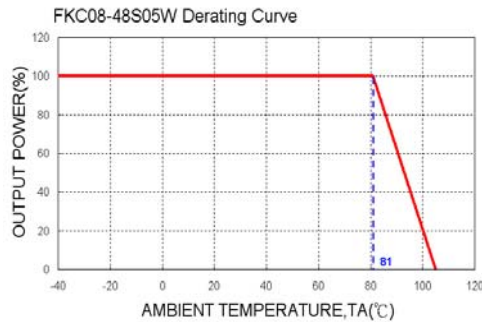


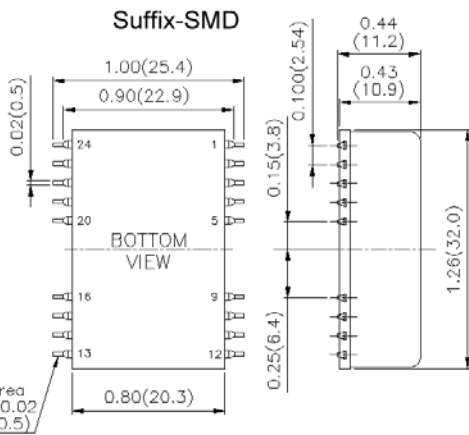
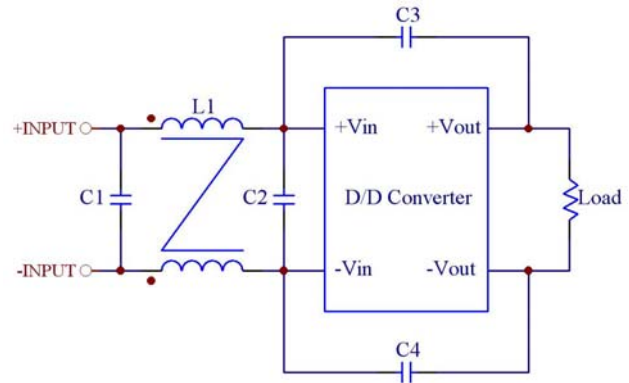
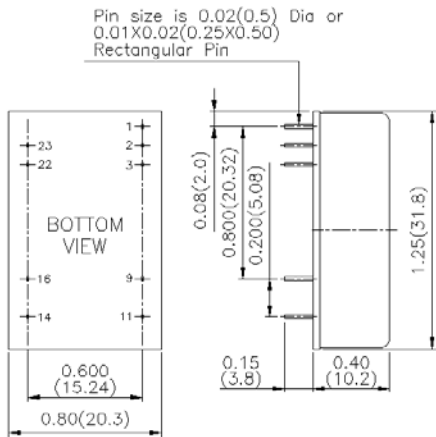


Model Number	Input Range	Output Voltage	Output Current		Output ⁽⁴⁾ Ripple & Noise	Input Current		Eff ⁽⁴⁾ (%)	Capacitor ⁽⁵⁾ Load max
			Min. Load	Max. Load		No load ⁽³⁾	Full Load ⁽²⁾		
FKC08-24S3P3W	9 – 36 VDC	3.3 VDC	0mA	2400mA	50mVp-p	40mA	407mA	85	1330μF
FKC08-24S05W	9 – 36 VDC	5 VDC	0mA	1600mA	50mVp-p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

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 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 .





- 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)

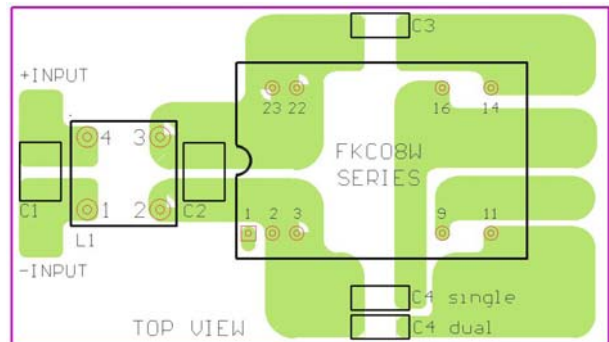
Recommended Filter for EN55022 Class B Compliance

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