



APPLICATIONS

Wireless Network
Telecom/Datacom
Industry Control System
Measurement Equipment
Semiconductor Equipment

FEATURES

- 15 WATTS OUTPUT POWER
- OUTPUT CURRENT UP TO 3A
- STANDARD 2.00 X 1.60 X 0.40 INCH PACKAGE
- HIGH EFFICIENCY UP TO 82%
- 4:1 WIDE INPUT VOLTAGE RANGE
- SIX-SIDED CONTINUOUS SHIELD
- FIXED SWITCHING FREQUENCY
- CE MARK MEETS 2006/95/EC, 2011/95/EC AND 2004/108/EC
- SAFETY MEETS UL60950-1, EN60950-1 AND IEC60950-1
- ISO9001 CERTIFIED MANUFACTURING FACILITIES
- COMPLIANT TO RoHS EU DIRECTIVE 2011/65/EU

DESCRIPTION

The FDC15 series offer 15 watts of output power from a 2.00 x 1.60 x 0.40 inch package. The FDC15 series have 4:1 wide input voltage of 9~36VDC and 18~75VDC. The FDC15 features 1600VDC of isolation, short-circuit and over-voltage protection.

TECHNICAL SPECIFICATION

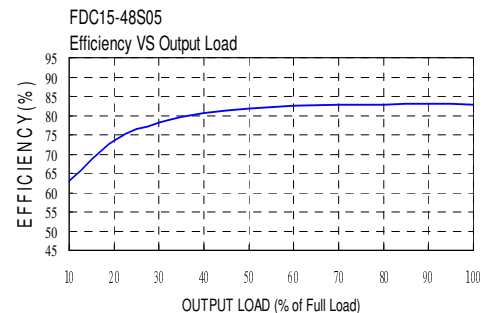
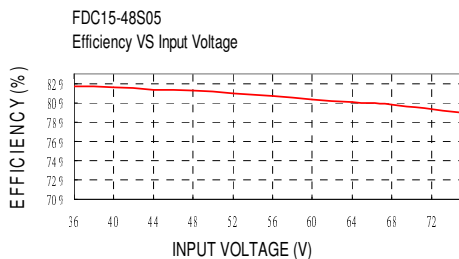
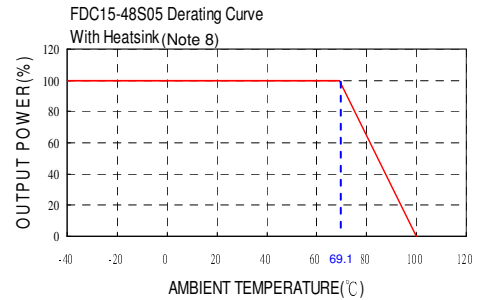
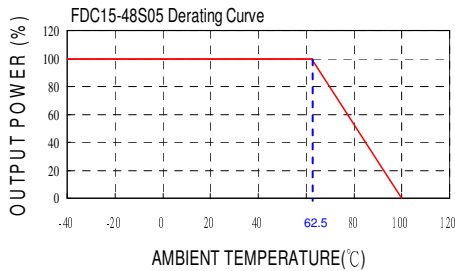
All specifications are typical at nominal input, full load and 25°C otherwise noted

OUTPUT SPECIFICATIONS			
Output power	15 Watts, max.		
Voltage accuracy	± 1%		
Minimum load (Note 6)	See Table		
Voltage adjustability	± 10%		
Line regulation	LL to HL at Full Load	± 0.2%	
Load regulation	Min. load to Full load	Single Dual	± 0.5% ± 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	5VDC output	6.2VDC	
Zener diode clamp	12VDC output	15VDC	
	15VDC output	18VDC	
Over load protection	% of FL at nominal input	150%, max.	
Short circuit protection	Continuous, automatic recovery		
GENERAL SPECIFICATIONS			
Efficiency	See table		
Isolation voltage	Input to Output	1600VDC, min. 1minute	
	Input(Output) to Case	1600VDC, min. 1minute	
Isolation resistance	500VDC	10 ⁹ ohms, min.	
Isolation capacitance	300pF, max.		
Switching frequency	270kHz±10%		
Design meet safety standard	IEC60950-1, UL60950-1, EN60950-1		
Case material	Nickel-coated copper		
Base material	Non-conductive black plastic		
Potting material	Epoxy (UL94-V0)		
Dimensions	2.00 X 1.60 X 0.40 Inch (50.8 X 40.6 X 10.2 mm)		
Weight	48g (1.69oz)		
MTBF (Note 1)	BELLCORE TR-NWT-000332	2.041 x 10 ⁶ hrs	
	MIL-HDBK-217F	9.140 x 10 ⁵ hrs	
INPUT SPECIFICATIONS			
Input voltage range	24VDC nominal input	9 ~ 36VDC	
	48VDC nominal input	18 ~ 75VDC	
Input filter	Pi type		
Input surge voltage	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	20ms
Remote ON/OFF (Note 7)			
(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	20mA	
ENVIRONMENTAL SPECIFICATIONS			
Operating ambient temperature	-40°C ~ +85°C (with derating)		
Maximum case temperature	100°C		
Storage temperature range	-55°C ~ +125°C		
Thermal impedance (Note 8)	Natural convection	10°C/Watt	
	Natural convection with heat-sink	8.24°C/Watt	
Thermal shock	MIL-STD-810F		
Vibration	MIL-STD-810F		
Relative humidity	5% to 95% RH		
EMC CHARACTERISTICS			
EMI	EN55022	Class A, Class B	
ESD	EN61000-4-2	Air	± 8kV
		Contact	± 6kV
Radiated immunity	EN61000-4-3	10 V/m	Perf. Criteria A
Fast transient (Note 9)	EN61000-4-4	± 2kV	Perf. Criteria B
Surge (Note 9)	EN61000-4-5	± 1kV	Perf. Criteria B
Conducted immunity	EN61000-4-6	10 Vr.m.s	Perf. Criteria A

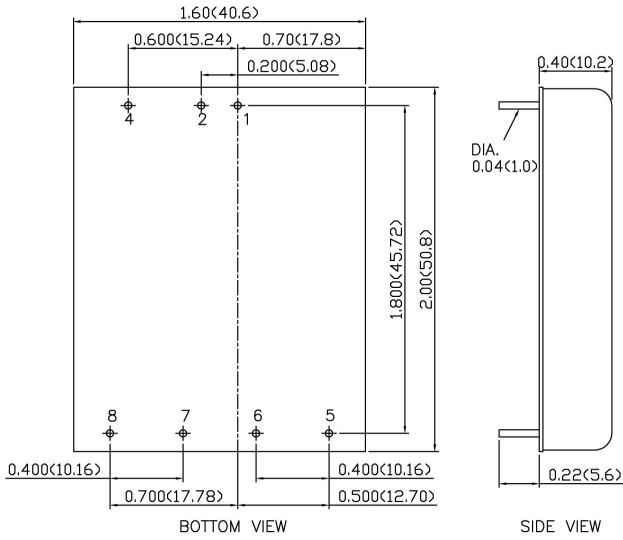
Model Number	Input Range	Output Voltage	Output Current		Output (2) Ripple & Noise	No load(3) Input Current	Eff (4) (%)	Capacitor Load max(5)
			Min. load	Full load				
FDC15-24S05	9 ~ 36 VDC	5 VDC	210mA	3000mA	75mVp-p	20mA	80	6800μF
FDC15-24S12	9 ~ 36 VDC	12 VDC	100mA	1250mA	75mVp-p	10mA	82	890μF
FDC15-24S15	9 ~ 36 VDC	15 VDC	80mA	1000mA	75mVp-p	20mA	82	570μF
FDC15-24D05	9 ~ 36 VDC	± 5 VDC	± 105mA	± 1500mA	75mVp-p	20mA	80	± 1700μF
FDC15-24D12	9 ~ 36 VDC	± 12 VDC	± 50mA	± 625mA	75mVp-p	20mA	82	± 300μF
FDC15-24D15	9 ~ 36 VDC	± 15 VDC	± 40mA	± 500mA	75mVp-p	20mA	82	± 200μF
FDC15-48S05	18 ~ 75 VDC	5 VDC	210mA	3000mA	75mVp-p	15mA	80	6800μF
FDC15-48S12	18 ~ 75 VDC	12 VDC	100mA	1250mA	75mVp-p	15mA	82	890μF
FDC15-48S15	18 ~ 75 VDC	15 VDC	80mA	1000mA	75mVp-p	10mA	82	570μF
FDC15-48D05	18 ~ 75 VDC	± 5 VDC	± 105mA	± 1500mA	75mVp-p	10mA	80	± 1700μF
FDC15-48D12	18 ~ 75 VDC	± 12 VDC	± 50mA	± 625mA	75mVp-p	20mA	82	± 300μF
FDC15-48D15	18 ~ 75 VDC	± 15 VDC	± 40mA	± 500mA	75mVp-p	15mA	82	± 200μF

- 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 and full load. (20MHZ BW.)
 - Typical value at nominal input and no load.
 - Typical value at nominal input and full load.
 - Test by minimum input and constant resistive load.
 - The output requires a minimum 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.
 - The CTRL pin voltage is reference to -INPUT.
 - Heat-sink is optional and P/N: 7G-0011C-F.
 - 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.

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



MECHANICAL DRAWING



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)

PIN CONNECTION		
PIN	SINGLE	DUAL
1	+INPUT	+INPUT
2	-INPUT	-INPUT
4	CTRL	CTRL
5	NO PIN	+OUTPUT
6	+OUTPUT	COMMON
7	-OUTPUT	-OUTPUT
8	TRIM	TRIM

