



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

FDC15-SERIES



- 15 WATTS OUTPUT POWER
- 4:1 WIDE INPUT VOLTAGE RANGE
- INTERNATIONAL SAFETY STANDARD APPROVAL
- SIX-SIDED CONTINUOUS SHIELD
- HIGH EFFICIENCY UP TO 82%
- STANDARD 2" X 1.6" X 0.4" PACKAGE
- FIXED SWITCHING FREQUENCY

The FDC15 series offer 15 watts of output power from a 2 x 1.6 x 0.4 inch package. The FDC15 series have 4:1 wide input voltage of 9-36 and 18-75VDC. The FDC15 features 1600VDC of isolation, short-circuit and over-voltage protection, as well as six sided shielding. A safety approval to EN60950 and UL1950. All models are particularly suited to telecommunications, industrial, mobile telecom and test equipment applications.



UL E193009
TUV R2054633
CB JPTUV-001402
CE MARK

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	Full load and nominal Vin	± 2%
Voltage adjustability		± 10%
Minimum load (Note 1)		10% of FL
Line regulation	LL to HL at Full Load	± 0.5%
Load regulation	10% to 100% FL Single	± 1%
	Dual	± 5%
Cross regulation (Dual)	Asymmetrical load 25% / 100% FL	± 5%
Ripple and noise	20MHz bandwidth	75mVp-p
Temperature coefficient		±0.02% / °C, max
Transient response recovery time	25% load step change	500uS
Over voltage protection	5V output	6.2V
	12V output	15V
	Zener diode clamp	15V output
Over load protection	% of FL at nominal input	150%, max
Short circuit protection		Hiccup, automatics recovery
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
Input reflected ripple (Note 2)	Nominal Vin and full load	20mAp-p
Start up time	Nominal Vin and constant resistor load	20mS typ
Remote ON/OFF (Note 3)	DC-DC ON	Open or 3.5V < Vr < 12V
	DC-DC OFF	Short or 0V < Vr < 1.2V
	Remote off input current	Nominal Vin

GENERAL SPECIFICATIONS		
Efficiency		See table
Isolation voltage		1600VDC, min
Isolation resistance		10 ⁹ ohms, min
Isolation capacitance		300pF, max
Switching frequency		270KHz, typ
Approvals and standard		IEC60950, UL1950, EN60950
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 4)		2.041 x 10 ⁶ hrs
ENVIRONMENTAL SPECIFICATIONS		
Operating temperature		-40°C ~ +85°C (with derating)
Maximum case temperature		100°C
Storage temperature range		-55°C ~ +105°C
Thermal impedance (Note 5)	Nature convection	10°C/Watt
	Nature convection with heat-sink	8.24°C/Watt
Thermal shock		MIL-STD-810D
Vibration		10~55Hz, 2G, 30minutes along X,Y and Z
Relative humidity		5% to 95% RH
EMC CHARACTERISTICS		
Conducted emissions	EN55022	Level A
Radiated emissions	EN55022	Level A
ESD	EN61000-4-2	Perf. Criteria2
Radiated immunity	EN61000-4-3	Perf. Criteria2
Fast transient	EN61000-4-4	Perf. Criteria2
Surge	EN61000-4-5	Perf. Criteria2
Conducted immunity	EN61000-4-6	Perf. Criteria2

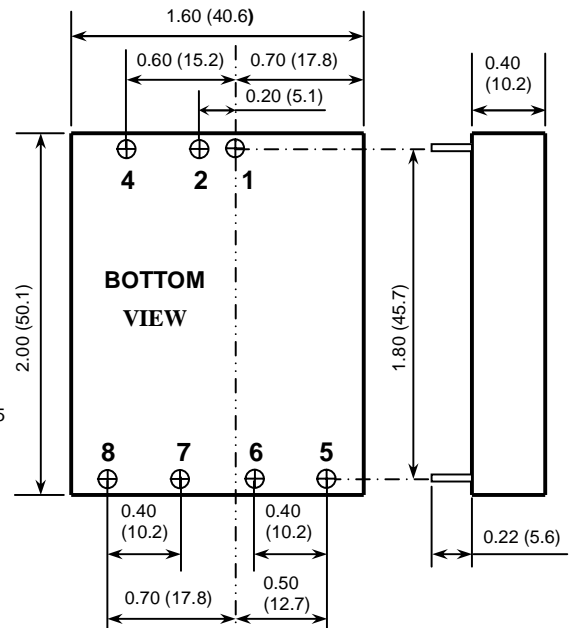
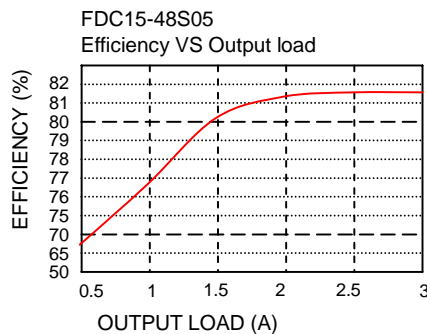
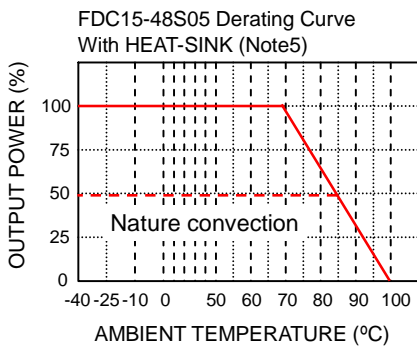
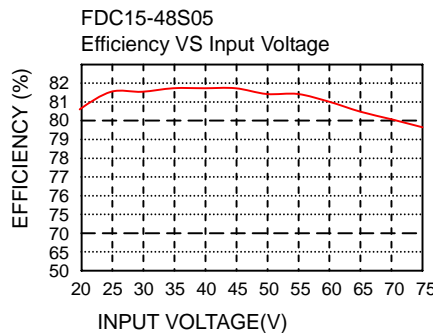
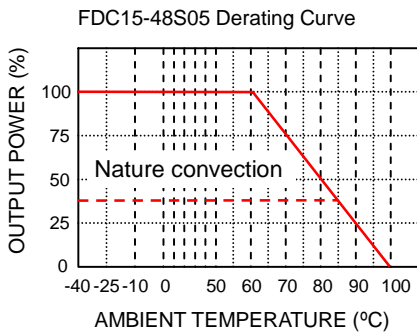


Model Number	Input Range	Output Voltage	Output Current	Input Current ⁽⁶⁾	Eff ⁽⁷⁾ (%)	Capacitor Load max ⁽⁸⁾
FDC15-24S05	9 – 36 VDC	5 VDC	3000mA	822mA	79	6800uF
FDC15-24S12	9 – 36 VDC	12 VDC	1250mA	801mA	82	890uF
FDC15-24S15	9 – 36 VDC	15 VDC	1000mA	801mA	82	570uF
FDC15-24D05	9 – 36 VDC	± 5 VDC	± 1500mA	822mA	80	± 1700uF
FDC15-24D12	9 – 36 VDC	± 12 VDC	± 625mA	801mA	82	± 300uF
FDC15-24D15	9 – 36 VDC	± 15 VDC	± 500mA	801mA	82	± 200uF
FDC15-48S05	18 – 75 VDC	5 VDC	3000mA	411mA	80	6800uF
FDC15-48S12	18 – 75 VDC	12 VDC	1250mA	401mA	82	890uF
FDC15-48S15	18 – 75 VDC	15 VDC	1000mA	401mA	82	570uF
FDC15-48D05	18 – 75 VDC	± 5 VDC	± 1500mA	411mA	80	± 1700uF
FDC15-48D12	18 – 75 VDC	± 12 VDC	± 625mA	401mA	82	± 300uF
FDC15-48D15	18 – 75 VDC	± 15 VDC	± 500mA	401mA	82	± 200uF

Note

- The FDC15 series required a minimum 10% 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.
- Simulated source impedance of 12uH. 12uH inductor in series with +Vin.
- The ON/OFF control voltage is reference to negative input.
- BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40°C. (Ground fixed and controlled environment).
- Heat-sink option, Thermal impedance is 8.24°C/Watt for natural convection and the P/N is 7G-0011A.
- Maximum value at nominal input voltage and full load.
- Typical value at nominal input voltage and full load.
- Test by minimum Vin and constant resistor load.

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



- All dimensions in Inches (mm)
- Pin pitch tolerance ±0.014(0.35)

EXTERNAL OUTPUT TRIMMING

Output can be externally trimmed by using the method shown below.
() for dual output trim