



APPLICATIONS

Wireless Network
Telecom/Datacom
Industry Control System
Measurement
Semiconductor Equipment

FEATURES

- 30 WATTS OUTPUT POWER
- TRIPLE OUTPUTS
- 4:1 ULTRA WIDE INPUT VOLTAGE RANGE
- HIGH EFFICIENCY UP TO 88%
- STANDARD 2.0 X 1.0 X 0.4 INCH PACKAGE
- SIX-SIDED CONTINUOUS SHIELD
- FIXED SWITCHING FREQUENCY
- CE MARK MEETS 2006/95/EC, 93/68/EEC AND 89/336 EEC
- DESIGN MEETS UL60950-1, EN60950-1 AND IEC60950-1
- ISO9001 CERTIFIED MANUFACTURING FACILITIES
- COMPLIANT TO RoHS EU DIRECTIVE 2002/95/EC

OPTIONS

Negative logic Remote On/Off

DESCRIPTION

The FED30TW series offer 30 watts of output power from a 2 x 1 x 0.4 inch package. FED30TW series have 4:1 wide input voltage of 9-36 and 18-75VDC. The FED30TW series have features 1600VDC of isolation, short circuit protection, over-current protection, over-voltage protection, over-temperature protection and as well as six sided shielding.

TECHNICAL SPECIFICATION

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

OUTPUT SPECIFICATIONS			
Output power			30 Watts max.
Voltage accuracy	Full load and nominal Vin	Main	±1%
		Auxiliary	±5%
Minimum load (Note 7)			See Table
Line regulation	LL to HL at Full Load	Main	±1%
		Auxiliary	±5%
Load regulation	Min. Load to Full load	Main	±1%
		Auxiliary	±5%
Ripple and noise	20MHz bandwidth (Measured with a 0.1µF/50V MLCC)		See Table
Temperature coefficient			±0.02% / °C, max.
Transient response recovery time	25% load step change		250µS
Over voltage protection	3.3V	Output	3.9V
	5V	Output	6.2V
Zener diode clamp	12V	Output	15V
	15V	Output	18V
Over load protection	% of FL at nominal input		150% typ.
Short circuit protection			Hiccup, automatics recovery

GENERAL SPECIFICATIONS			
Efficiency			See table
Isolation voltage	Input to Output		1600VDC, min.
	Input(Output) to Case		1600VDC, min.
Isolation resistance			10 ⁹ ohms, min.
Isolation capacitance			1500pF, max.
Switching frequency			400KHz, typ.
Design meets safety standard			IEC60950-1, UL60950-1, EN60950-1
Case material			Nickel-coated copper
Base material			FR4 PCB
Potting material			Epoxy (UL94-V0)
Dimensions			2.00 X 1.00 X 0.40 Inch (50.8X 25.4 X 10.2 mm)
Weight			30.5g(1.07oz)
MTBF (Note 1)	BELLCORE-TR-NWT-000332	2.904 x 10 ⁵ hrs	
	MIL-HDBK-217F	3.184 x 10 ⁵ 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		20mA _{p-p}
Start up time	Nominal Vin and constant resistive load	Power up	30mS, typ.
		Remote ON/OFF	30mS, typ.
Start-up voltage	24V input		9VDC
	48V input		18VDC
Shutdown voltage	24V input		8VDC
	48V input		16VDC
Remote ON/OFF (Note 6)	(Positive logic)(Standard)	DC-DC ON	Open or 3V < Vr < 12V
		DC-DC OFF	Short or 0V < Vr < 1.2V
	(Negative logic)(Option)	DC-DC ON	Short or 0V < Vr < 1.2V
		DC-DC OFF	Open or 3V < Vr < 12V
Input current of Remote control pin	Nominal Vin		-0.5mA ~ +0.5mA
Remote off state input current	Nominal Vin		3mA

ENVIRONMENTAL SPECIFICATIONS			
Operating ambient temperature			-40°C to +50°C (without derating)
			+50°C to +85°C(with derating)
Maximum case temperature			105°C
Storage temperature range			-55°C to +125°C
Over temperature protection			115°C, typ.
Thermal impedance (Note 8)	Nature convection		12°C/Watt
		Nature convection with heat-sink	10°C/Watt
Thermal shock			MIL-STD-810F
Vibration			MIL-STD-810F
Relative humidity			5% to 95% RH

EMC CHARACTERISTICS			
EMI (Note 9)	EN55022		Class A
ESD	EN61000-4-2	Air	± 8KV
		Contact	± 6KV
Radiated immunity	EN61000-4-3		10 V/m Perf. Criteria A
Fast transient(Note 10)	EN61000-4-4		± 2KV Perf. Criteria A
Surge (Note 10)	EN61000-4-5		± 1KV Perf. Criteria A
Conducted immunity	EN61000-4-6		10 Vr.m.s Perf. Criteria A



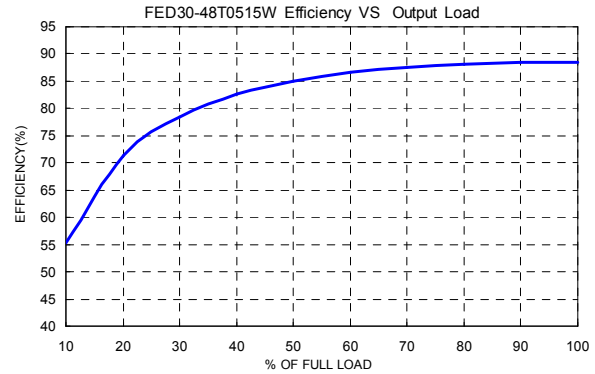
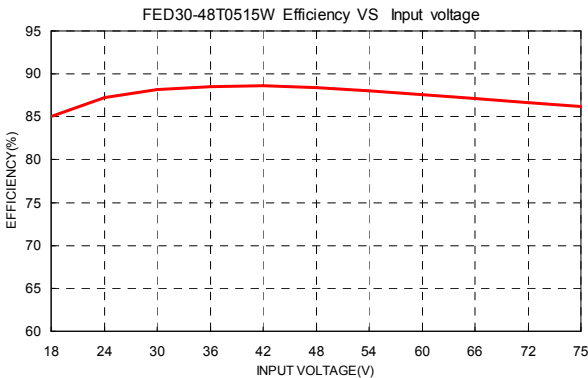
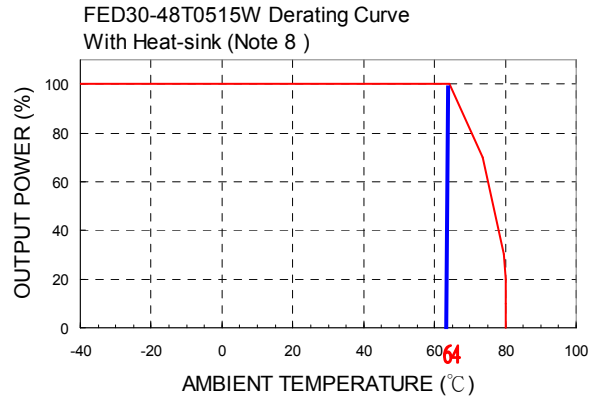
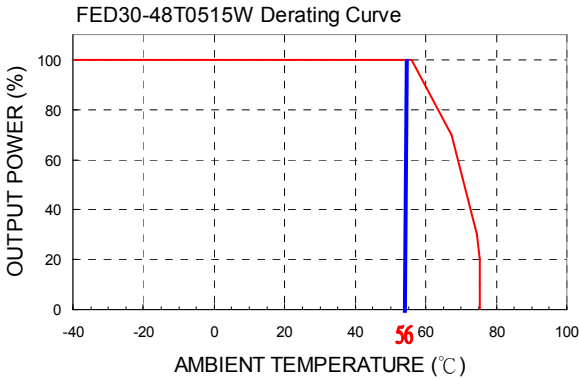


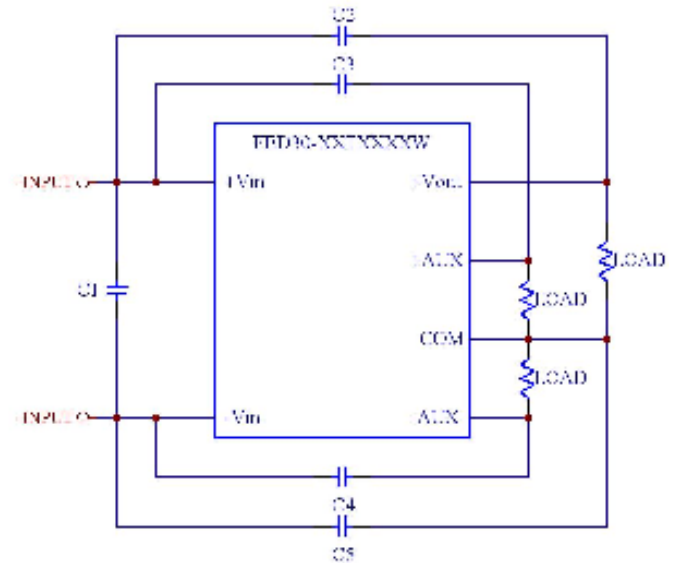
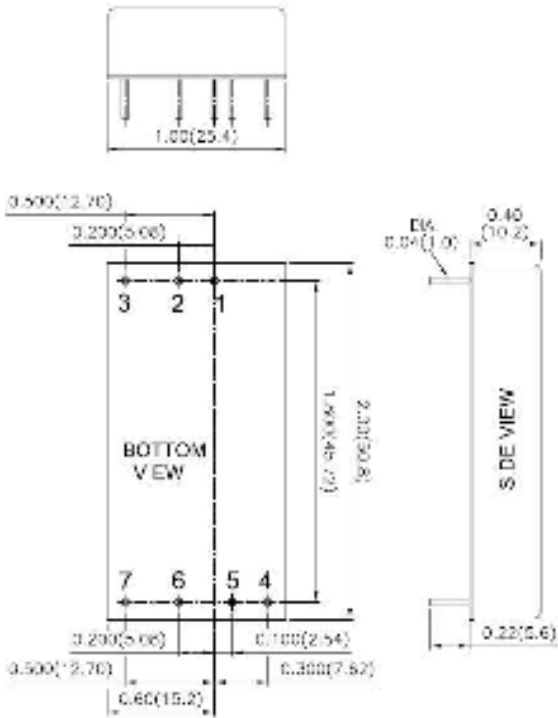
Model Number	Input Range	Output Voltage	Output Current		Output (4) Ripple & Noise	Input Current		Eff (4) (%)	Capacitor(5) Load max
			Min. Load	Max. Load		No load(3)	Full Load(2)		
FED30-24T3312W	9 – 36 VDC	3.3 / ±12 VDC	500mA / ±42mA	5000mA / ±416mA	50 / 75 mVp-p	105mA	1330mA	87	15000µF /±340µF
FED30-24T3315W	9 – 36 VDC	3.3 / ±15 VDC	500mA / ±33mA	5000mA / ±333mA	50 / 75 mVp-p	105mA	1330mA	87	15000µF /±220µF
FED30-24T0512W	9 – 36 VDC	5 / ±12 VDC	400mA / ±42mA	4000mA / ±416mA	50 / 75 mVp-p	105mA	1488mA	88	8000µF /±340µF
FED30-24T0515W	9 – 36 VDC	5 / ±15 VDC	400mA / ±33mA	4000mA / ±333mA	50 / 75 mVp-p	105mA	1488mA	88	8000µF /±220µF
FED30-48T3312W	18 – 75 VDC	3.3 / ±12 VDC	500mA / ±42mA	5000mA / ±416mA	50 / 75 mVp-p	55mA	665mA	87	15000µF /±340µF
FED30-48T3315W	18 – 75 VDC	3.3 / ±15 VDC	500mA / ±33mA	5000mA / ±333mA	50 / 75 mVp-p	55mA	665mA	87	15000µF /±220µF
FED30-48T0512W	18 – 75 VDC	5 / ±12 VDC	400mA / ±42mA	4000mA / ±416mA	50 / 75 mVp-p	55mA	744mA	88	8000µF /±340µF
FED30-48T0515W	18 – 75 VDC	5 / ±15 VDC	400mA / ±33mA	4000mA / ±333mA	50 / 75 mVp-p	55mA	744mA	88	8000µF /±220µF

Note

- BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40°C. (Ground fixed and controlled environment)
MIL-STD-217F Notice2 @Ta=25 °C, Full load (Ground, Benign, controlled environment)
- Maximum value at nominal input voltage.
- 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 output requires minimum loading on the output to maintain specified regulation. Operation in no-load condition will not damage these devices, however they may not meet all listed specification.
- Heat sink is optional and P/N: 7G-0020C-F
- The FED30-TW series can meet EN55022 Class A with parallel an external capacitor to the input pins.
Recommend: 24Vin :4.7µF/50V X7R 1812 MLCC.
48Vin : 2.2µF/100V X7R 1812 MLCC.
- An external filter capacitor is required if the module has to meet EN61000-4-4, EN61000-4-5.
The filter capacitor Power Mate suggest: 24Vin Nippon chemi-con KY series, 330 µ F/50V, ESR 55mΩ
48Vin Nippon chemi-con KY series, 220 µ F/100V, ESR 48mΩ.

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





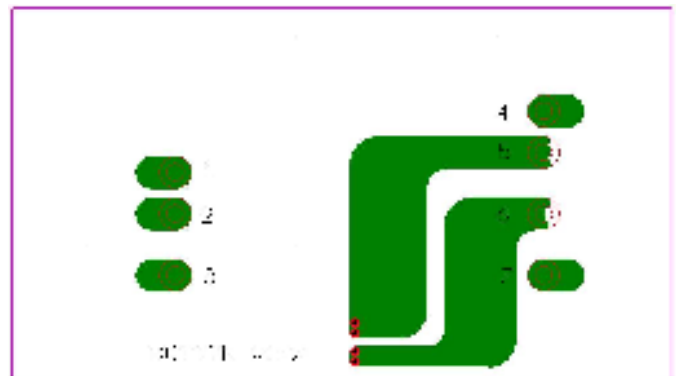
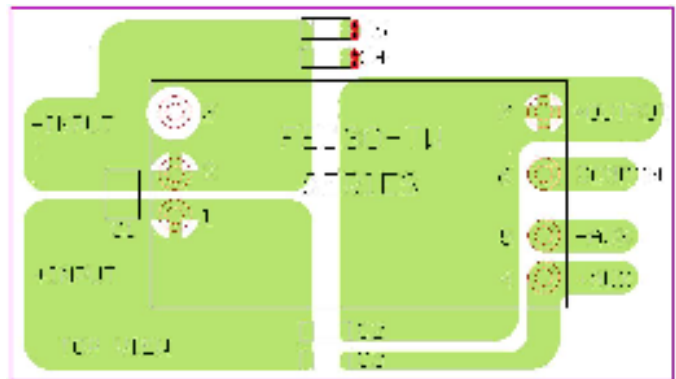
Recommended Filter for EN55022 Class A Compliance

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

- 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)

Triple Output	C1	C2 & C3 & C5	C4
FED30-24TXXXX W	4.7µF/50V 1812 MLCC	150pF/2KV 1206 MLCC	1000pF/3KV 1808 MLCC
FED30-48TXXXX W	2.2µF/100V 1812 MLCC	150pF/2KV 1206 MLCC	1000pF/3KV 1808 MLCC

PIN CONNECTION	
PIN	TRIPLE
1	+INPUT
2	-INPUT
3	CTRL
4	+AUX
5	-AUX
6	COMMON
7	+OUTPUT



Recommended EN55022 Class A Filter Circuit Layout



