



FEATURES

- 30 WATTS MAXIMUM OUTPUT POWER
- OUTPUT CURRENT UP TO 8.5A
- STANDARD 2.00 X 1.00 X 0.40 INCH
- HIGH EFFICIENCY UP TO 91%
- 4:1 ULTRA 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

OPTIONS

NEGATIVE LOGIC REMOTE ON/OFF

APPLICATIONS

Wireless Network
Telecom/Datacom
Industry Control System
Measurement
Semiconductor Equipment

DESCRIPTION

The FED30W series offer 30 watts of output power from a 2 x 1 x 0.4 inch package. FED30W series have 4:1 ultra wide input voltage of 9~36 and 18~75VDC. The FED30W have features 1600VDC of isolation, short circuit protection, over-current protection, over-voltage protection, over-temperature protection and 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 | | | ±1% |
| Voltage adjustability | Single output | | ± 10% |
| Minimum load | | | 0% |
| Line regulation | LL to HL at Full Load | | ± 0.2% |
| Load regulation | No load to Full load | Single Dual | ± 0.5% ± 1% |
| Cross regulation (Dual) | Asymmetrical load 25% / 100% FL | | ± 5% |
| Ripple and noise | 20MHz bandwidth (Measured with a 1uF/50V MLCC) | 1.5-5.1Vo 12-15Vo | 100mVp-p 150mVp-p |
| Temperature coefficient | | | ±0.02% / °C, max. |
| Transient response recovery time | 25% load step change | | 250µs |
| Over voltage protection Zener diode clamp | 1.5V | Output | 2.0V |
| | 2.5V | Output | 3.3V |
| | 3.3V | Output | 3.9V |
| | 5.0V & 5.1V & ±5V | Output | 6.2V |
| | 12V & ±12V 15V & ±15V | Output Output | 15V 18V |
| Over load protection | % of FL at nominal input | | 150% |
| 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 |
| Case grounding | | Connect case to -input with decoupling Y Cap | |
| Isolation resistance | 500VDC | | 10 ⁹ ohms, min. |
| Isolation capacitance | | | 1500pF, max. |
| Switching frequency | | | 430kHz± 10% |
| 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 | | 3.163 x 10 ⁶ hrs. |
| | MIL-HDBK-217F | | 4.347 x 10 ⁵ hrs. |

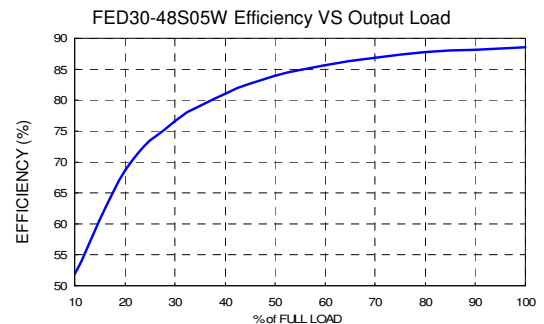
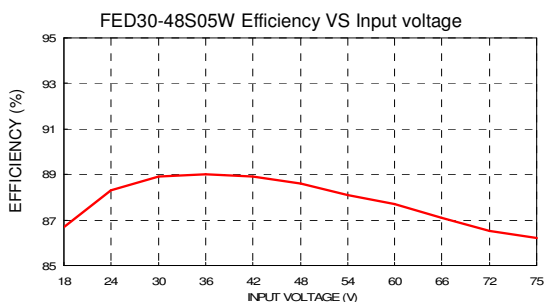
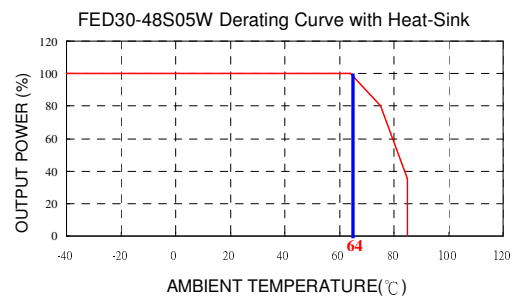
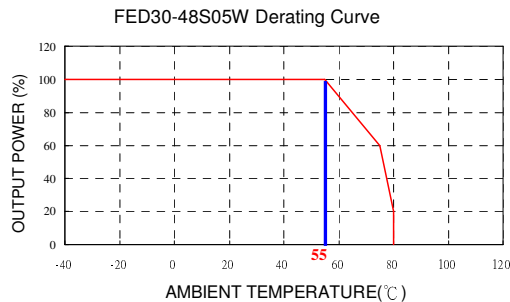
| INPUT SPECIFICATIONS | | | |
|-------------------------------------|---|----------------------------------|-----------------------------------|
| Input voltage range | 24VDC nominal input | | 9 ~ 36VDC |
| | 48VDC nominal input | | 18 ~ 75VDC |
| Input filter | | | Pi type |
| Input surge voltage | 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 | 30ms |
| | | Remote ON/OFF | 30ms |
| Start-up voltage | 24VDC input | | 9VDC, max. |
| | 48VDC input | | 18VDC, max. |
| Shutdown voltage | 24VDC input | | 8VDC |
| | 48VDC input | | 16VDC |
| Remote ON/OFF (Note 5) | (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 Input | | -0.5mA ~ +0.5mA |
| Remote off state input current | Nominal Input | | 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 |
| Thermal impedance | (Note 6) | 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 7) | EN55022 | | Class A |
| ESD | EN61000-4-2 | Air ± 8kV | Perf. Criteria A |
| | | Contact ± 6kV | |
| 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 ⁽³⁾ Ripple & Noise | No load ⁽²⁾ Input Current | Eff ⁽³⁾ (%) | Capacitor ⁽⁴⁾ Load max. |
|---------------|-------------|----------------|----------------|-----------|---|---|---------------------------|---------------------------------------|
| | | | Min. Load | Max. Load | | | | |
| FED30-24S1P5W | 9 ~ 36 VDC | 1.5 VDC | 0mA | 8500mA | 100mVp-p | 70mA | 80 | 20000μF |
| FED30-24S2P5W | 9 ~ 36 VDC | 2.5 VDC | 0mA | 8000mA | 100mVp-p | 70mA | 83 | 20000μF |
| FED30-24S3P3W | 9 ~ 36 VDC | 3.3 VDC | 0mA | 7500mA | 100mVp-p | 70mA | 86 | 20000μF |
| FED30-24S05W | 9 ~ 36 VDC | 5.0 VDC | 0mA | 6000mA | 100mVp-p | 105mA | 88 | 14400μF |
| FED30-24S5P1W | 9 ~ 36 VDC | 5.1 VDC | 0mA | 6000mA | 100mVp-p | 105mA | 88 | 14400μF |
| FED30-24S12W | 9 ~ 36 VDC | 12 VDC | 0mA | 2500mA | 150mVp-p | 20mA | 89 | 3000μF |
| FED30-24S15W | 9 ~ 36 VDC | 15 VDC | 0mA | 2000mA | 150mVp-p | 30mA | 89 | 2000μF |
| FED30-24D05W | 9 ~ 36 VDC | ±5VDC | 0mA | ±3000mA | 100mVp-p | 90mA | 88 | ± 3000μF |
| FED30-24D12W | 9 ~ 36 VDC | ±12VDC | 0mA | ±1250mA | 150mVp-p | 25mA | 87 | ± 2000μF |
| FED30-24D15W | 9 ~ 36 VDC | ±15VDC | 0mA | ±1000mA | 150mVp-p | 25mA | 87 | ± 1300μF |
| FED30-48S1P5W | 18 ~ 75 VDC | 1.5 VDC | 0mA | 8500mA | 100mVp-p | 30mA | 80 | 20000μF |
| FED30-48S2P5W | 18 ~ 75 VDC | 2.5 VDC | 0mA | 8000mA | 100mVp-p | 45mA | 84 | 20000μF |
| FED30-48S3P3W | 18 ~ 75 VDC | 3.3 VDC | 0mA | 7500mA | 100mVp-p | 45mA | 86 | 20000μF |
| FED30-48S05W | 18 ~ 75 VDC | 5.0 VDC | 0mA | 6000mA | 100mVp-p | 65mA | 88 | 14400μF |
| FED30-48S5P1W | 18 ~ 75 VDC | 5.1 VDC | 0mA | 6000mA | 100mVp-p | 65mA | 88 | 14400μF |
| FED30-48S12W | 18 ~ 75 VDC | 12 VDC | 0mA | 2500mA | 150mVp-p | 60mA | 90 | 3000μF |
| FED30-48S15W | 18 ~ 75 VDC | 15 VDC | 0mA | 2000mA | 150mVp-p | 50mA | 91 | 2000μF |
| FED30-48D05W | 18 ~ 75 VDC | ±5VDC | 0mA | ±3000mA | 100mVp-p | 50mA | 88 | ± 3000μF |
| FED30-48D12W | 18 ~ 75 VDC | ±12VDC | 0mA | ±1250mA | 150mVp-p | 15mA | 88 | ± 2000μF |
| FED30-48D15W | 18 ~ 75 VDC | ±15VDC | 0mA | ±1000mA | 150mVp-p | 15mA | 88 | ± 1300μF |

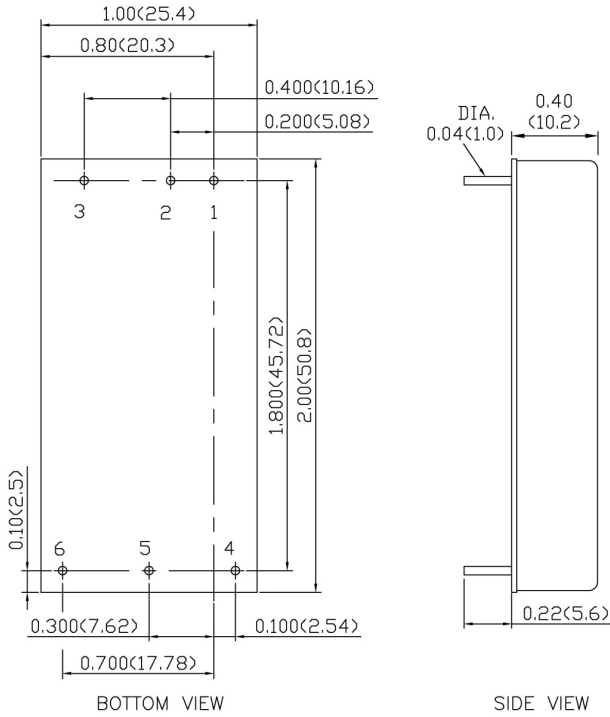
Note

- 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)
- Typical value at nominal input voltage and no load.
- Typical value at nominal input voltage and full load.
- Test by minimum input and constant resistive load.
- The CTRL pin voltage is referenced to -INPUT.
- Heat-sink is optional and P/N: 7G-0020C-F.
- The FED30W series standard module meets EN55022 Class A and Class B with external components.
For more detail information, please contact with P-DUKE.
- An external filter capacitor is required if the module has to meet EN61000-4-4, EN61000-4-5.
The filter capacitor Power Mate suggest: 24 VDC INPUT : Nippon chemi-con KY series, 330μF/50V.
48 VDC INPUT : 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 |
| 3 | CTRL | CTRL |
| 4 | + OUTPUT | + OUTPUT |
| 5 | - OUTPUT | COMMON |
| 6 | TRIM | - OUTPUT |

