



### APPLICATIONS

Wireless Network  
Telecom/Datacom  
Industry Control System  
Measurement  
Semiconductor Equipment

### 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
- UL60950-1, EN60950-1, & IEC60950-1 SAFETY APPROVALS
- CE MARKED
- COMPLIANT TO RoHS II & REACH

### OPTIONS

NEGATIVE LOGIC REMOTE ON/OFF

### 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

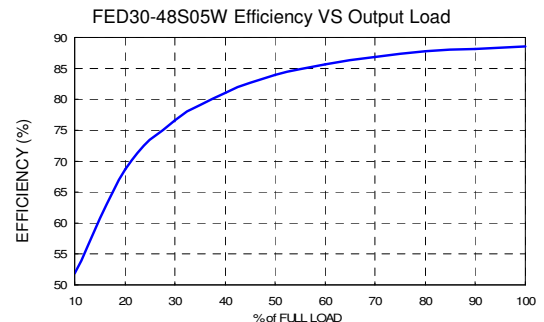
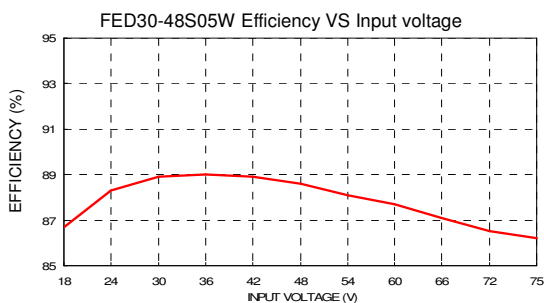
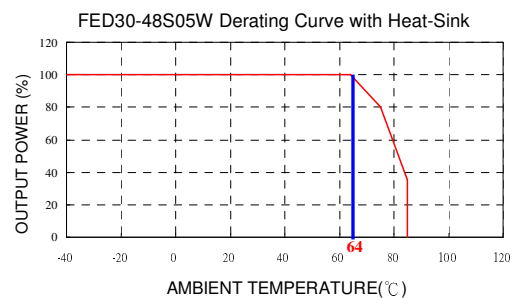
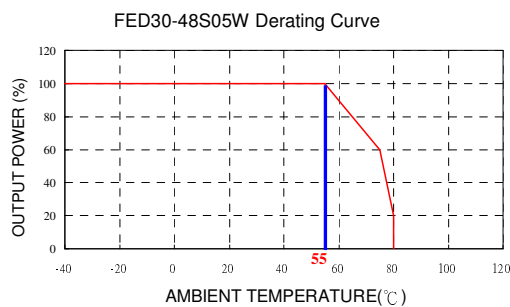
OUTPUT SPECIFICATIONS			
Output power			30 Watts max.
Voltage accuracy			±1%
Voltage adjustability	Single output		± 10%
Minimum load			0%
Line regulation	LL to HL at Full Load		± 0.2%
Load regulation	No load to Full load	Single Dual	± 0.5% ± 1%
Cross regulation (Dual)	Asymmetrical load 25% / 100% FL		± 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 Input (Output) to Case		1600VDC min. 1minute 1600VDC min. 1minute
Case grounding			Connect case to -input with decoupling Y Cap
Isolation resistance	500VDC		10 <sup>9</sup> ohms, min.
Isolation capacitance			1500pF, max.
Switching frequency			430kHz± 10%
Safety approvals			IEC60950-1, UL60950-1, & EN60950-1
Case material			Nickel-coated copper
Base material			FR4 PCB
Potting material			Epoxy (UL94 V-0)
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)	MIL-HDBK-217F		1.288 x 10 <sup>6</sup> hrs.

INPUT SPECIFICATIONS			
Input voltage range	24VDC nominal input 48VDC nominal input		9 ~ 36VDC 18 ~ 75VDC
Input filter			Pi type
Input surge voltage	24VDC input 48VDC input		50VDC 100ms, max. 100VDC 100ms, max.
Input reflected ripple current			20mA <sub>p-p</sub>
Start up time	Nominal input and constant resistive load	Power up Remote ON/OFF	30ms 30ms
Start-up voltage	24VDC input 48VDC input		9VDC, max. 18VDC, max.
Shutdown voltage	24VDC input 48VDC input		8VDC 16VDC
Remote ON/OFF (Note 5)	(Positive logic)(Standard)	DC-DC ON DC-DC OFF	Open or 3V < Vr < 12V Short or 0V < Vr < 1.2V
	(Negative logic)(Option)	DC-DC ON DC-DC OFF	Short or 0V < Vr < 1.2V 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		Nature convection (Note 6) Nature convection with heat-sink	12°C/Watt 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 Contact ± 6kV	Perf. Criteria A
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

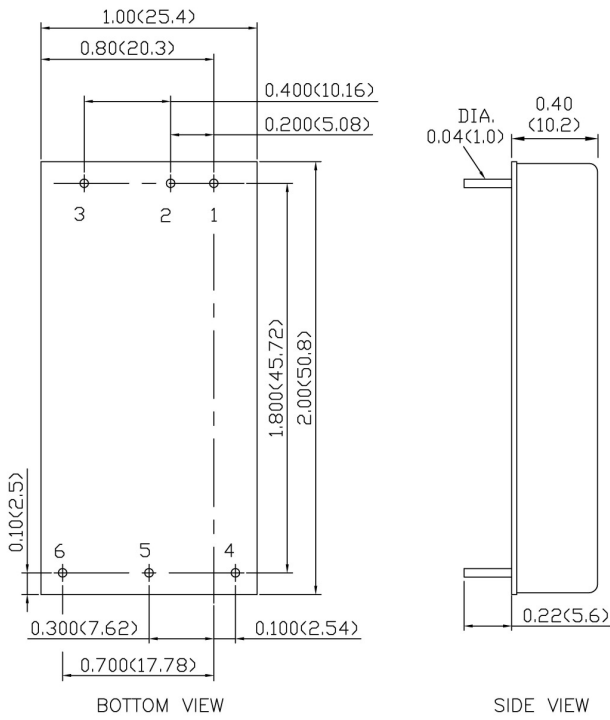
Model Number	Input Range	Output Voltage	Output Current		Output (3) Ripple & Noise	No load(2) Input Current	Eff (3) (%)	Capacitor(4) Load max.
			Min. Load	Max. Load				
FED30-24S1P5W	9 ~ 36 VDC	1.5 VDC	0mA	8500mA	100mVp-p	70mA	80	20000μF
FED30-24S2P5W	9 ~ 36 VDC	2.5 VDC	0mA	8000mA	100mVp-p	70mA	83	20000μF
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
- MIL-HDBK-217F @Tc=70 °C, Full load.
  - 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

