



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%
- 2:1 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 FED30 series offer 30 watts of output power from a 2 x 1 x 0.4 inch package. FED30 series have 2:1 wide input voltage of 9~18VDC, 18~36 and 36~75VDC. The FED30 series 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 ⁹ 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	1.453 x 10 ⁶ hrs.	

INPUT SPECIFICATIONS				
Input voltage range	12VDC nominal input	9 ~ 18VDC		
	24VDC nominal input	18 ~ 36VDC		
	48VDC nominal input	36 ~ 75VDC		
Input filter	Pi type			
Input surge voltage	12VDC input	25VDC 100ms, max.		
	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	12VDC input	9VDC, max.		
	24VDC input	18VDC, max.		
	48VDC input	36VDC, max.		
Shutdown voltage	12VDC input	8VDC		
	24VDC input	16VDC		
	48VDC input	32VDC		
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, Class B	
ESD	EN61000-4-2	Air	± 8kV Perf. Criteria A
		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

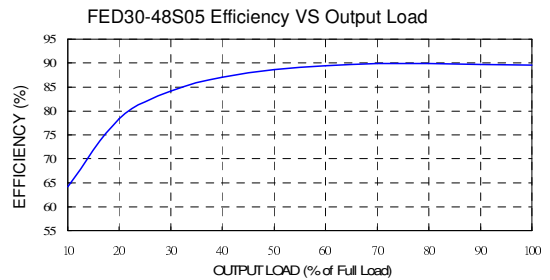
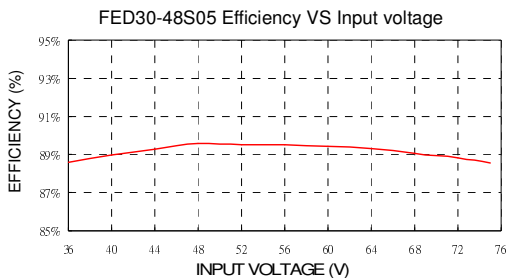
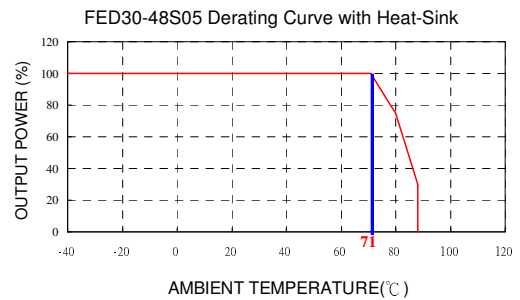
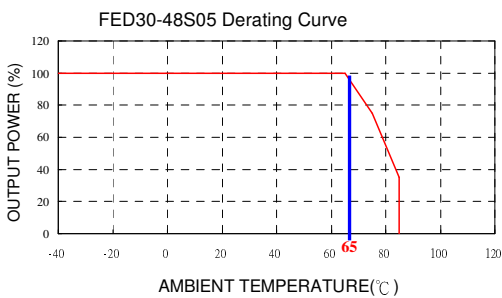


Model Number	Input Range	Output Voltage	Output Current		Output ⁽³⁾ Ripple & Noise	No load ⁽²⁾ Input Current	Eff ⁽³⁾ (%)	Capacitor ⁽⁴⁾ Load max
			Min. Load	Max. Load				
FED30-12S1P5	9 ~ 18 VDC	1.5 VDC	0mA	8500mA	100mVp-p	70mA	79	20000μF
FED30-12S2P5	9 ~ 18 VDC	2.5 VDC	0mA	8000mA	100mVp-p	100mA	84	20000μF
FED30-12S3P3	9 ~ 18 VDC	3.3 VDC	0mA	8000mA	100mVp-p	90mA	85	20000μF
FED30-12S05	9 ~ 18 VDC	5.0 VDC	0mA	6000mA	100mVp-p	130mA	87	14400μF
FED30-12S5P1	9 ~ 18 VDC	5.1 VDC	0mA	6000mA	100mVp-p	130mA	87	14400μF
FED30-12S12	9 ~ 18 VDC	12 VDC	0mA	2500mA	150mVp-p	90mA	89	3000μF
FED30-12S15	9 ~ 18 VDC	15 VDC	0mA	2000mA	150mVp-p	80mA	89	2000μF
FED30-12D05	9 ~ 18 VDC	±5VDC	0mA	±3000mA	100mVp-p	90mA	87	± 3000μF
FED30-12D12	9 ~ 18 VDC	±12VDC	0mA	±1250mA	150mVp-p	50mA	87	± 2000μF
FED30-12D15	9 ~ 18 VDC	±15VDC	0mA	±1000mA	150mVp-p	40mA	87	± 1300μF
FED30-24S1P5	18 ~ 36 VDC	1.5 VDC	0mA	8500mA	100mVp-p	50mA	80	20000μF
FED30-24S2P5	18 ~ 36 VDC	2.5 VDC	0mA	8000mA	100mVp-p	50mA	85	20000μF
FED30-24S3P3	18 ~ 36 VDC	3.3 VDC	0mA	8000mA	100mVp-p	50mA	87	20000μF
FED30-24S05	18 ~ 36 VDC	5.0 VDC	0mA	6000mA	100mVp-p	75mA	90	14400μF
FED30-24S5P1	18 ~ 36 VDC	5.1 VDC	0mA	6000mA	100mVp-p	75mA	90	14400μF
FED30-24S12	18 ~ 36 VDC	12 VDC	0mA	2500mA	150mVp-p	40mA	91	3000μF
FED30-24S15	18 ~ 36 VDC	15 VDC	0mA	2000mA	150mVp-p	30mA	91	2000μF
FED30-24D05	18 ~ 36 VDC	±5VDC	0mA	±3000mA	100mVp-p	70mA	90	± 3000μF
FED30-24D12	18 ~ 36 VDC	±12VDC	0mA	±1250mA	150mVp-p	30mA	89	± 2000μF
FED30-24D15	18 ~ 36 VDC	±15VDC	0mA	±1000mA	150mVp-p	30mA	90	± 1300μF
FED30-48S1P5	36 ~ 75 VDC	1.5 VDC	0mA	8500mA	100mVp-p	45mA	80	20000μF
FED30-48S2P5	36 ~ 75 VDC	2.5 VDC	0mA	8000mA	100mVp-p	45mA	85	20000μF
FED30-48S3P3	36 ~ 75 VDC	3.3 VDC	0mA	8000mA	100mVp-p	30mA	87	20000μF
FED30-48S05	36 ~ 75 VDC	5.0 VDC	0mA	6000mA	100mVp-p	45mA	90	14400μF
FED30-48S5P1	36 ~ 75 VDC	5.1 VDC	0mA	6000mA	100mVp-p	45mA	89	14400μF
FED30-48S12	36 ~ 75 VDC	12 VDC	0mA	2500mA	150mVp-p	40mA	91	3000μF
FED30-48S15	36 ~ 75 VDC	15 VDC	0mA	2000mA	150mVp-p	40mA	91	2000μF
FED30-48D05	36 ~ 75 VDC	±5VDC	0mA	±3000mA	100mVp-p	35mA	90	± 3000μF
FED30-48D12	36 ~ 75 VDC	±12VDC	0mA	±1250mA	100mVp-p	30mA	88	± 2000μF
FED30-48D15	36 ~ 75 VDC	±15VDC	0mA	±1000mA	150mVp-p	20mA	89	± 1300μF

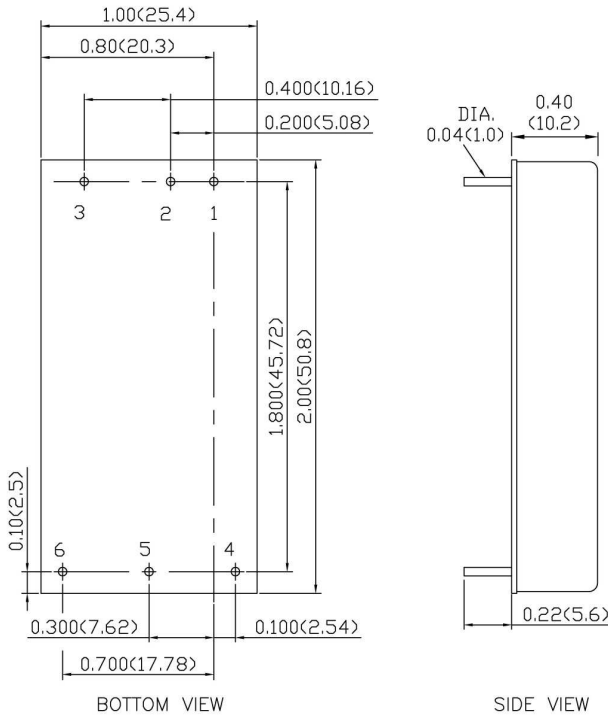
Note

- MIL-HDBK-217F @Ta=25 °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-0020A-F.
- The FED30 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: 12 VDC INPUT & 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



- All dimensions in Inch (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)

PIN CONNECTION		
PIN	SINGLE	DUAL
1	+ INPUT	+ INPUT
2	- INPUT	- INPUT
3	CTRL	CTRL
4	+ OUTPUT	+ OUTPUT
5	- OUTPUT	COMMON
6	TRIM	- OUTPUT

