



- OFFER SINGLE AND DUAL OUTPUT
- OUTPUT CURRENT UP TO 8A
- 30 WATTS MAXIMUM OUTPUT POWER
- 4:1 WIDE INPUT VOLTAGE RANGE
- INTERNATIONAL SAFETY STANDARD APPROVAL
- SIX-SIDED CONTINUOUS SHIELD
- HIGH EFFICIENCY UP TO 88%
- STANDARD 2" x 1.6" x 0.4" PACKAGE
- FIXED SWITCHING FREQUENCY



**UL E193009
TUV
CB
CE MARK**

The FEC30W series offer 30 watts of output power from a 2 x 1.6 x 0.4 inch package .The FEC30W series with 4:1 wide input voltage of 10-40VDC and 18-75VDC and features 1600VDC of isolation, short-circuit and over-voltage protection, as well as six sided shielding. A safety Approval to EN60950-1 and UL60950-1. All models are particularly suited to telecommunications, industrial, mobile telecom and test equipment applications.

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		± 1%
Voltage adjustability			± 10%
Minimum load (Note 1)	Single		0%
	Dual		10% of FL
Line regulation	LL to HL at Full Load		± 0.5%
Load regulation	10% to 100% FL	Single	± 0.5%
		Dual	± 1%
Cross regulation (Dual)	Asymmetrical load 25% / 100% FL		± 5%
Ripple and noise	20MHz bandwidth (Measured with a 104pF/50V MLCC)		See table
Temperature coefficient			± 0.02% / °C, max
Transient response recovery time	25% load step change		250uS
Over voltage protection Zener diode clamp	1.5V output		3.9V
	1.8V output		3.9V
	2.5V output		3.9V
	3.3V output		3.9V
	5V output		6.2V
	12V output		15V
15V output		18V	
Over load protection	% of FL at nominal input		150% max
Short circuit protection			Hiccup, automatics recovery
INPUT SPECIFICATIONS			
Input voltage range	24V nominal input		10 – 40VDC
	48V nominal input		18 – 75VDC
Under voltage lockout	24V input	DC-DC ON	10VDC
		DC-DC OFF	8VDC
	48V input	DC-DC ON	18VDC
		DC-DC OFF	16VDC
Input filter			L-C type
Input voltage variation	dv/dt		5V/ms,max (Complies with ETS300 132 part4.4)
Input surge voltage 100mS max	24V input		50VDC
	48V input		100VDC
Input reflected ripple (Note2)	Nominal Vin and full load		20mA _{p-p}
Start up time	Nominal Vin and constant resistive load	Power up	10mS typ
		Remote ON/OFF	10mS typ
Remote ON/OFF (Note 3) (Positive logic)	DC-DC ON	Open or 3V < Vr < 12V	
	DC-DC OFF	Short or 0V < Vr < 1.2V	
Remote off input current	Nominal Vin		3mA

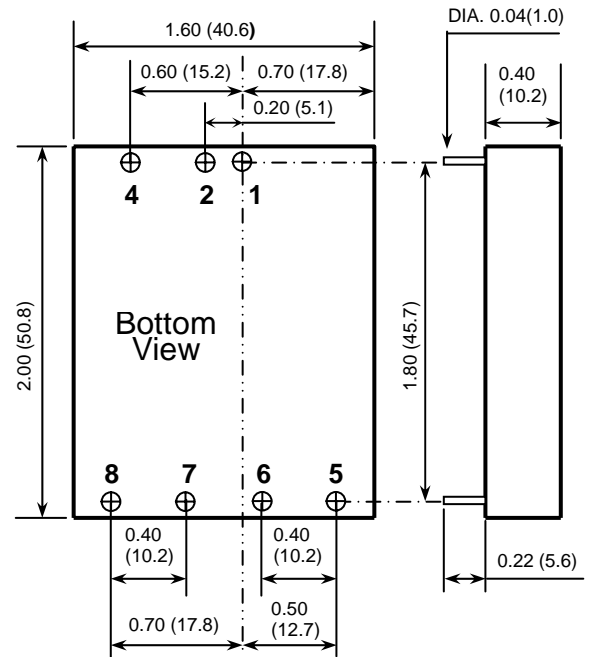
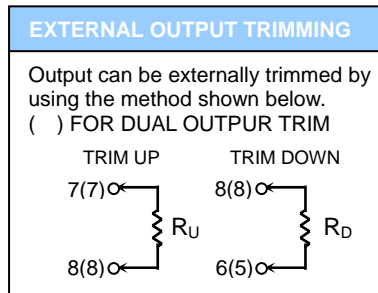
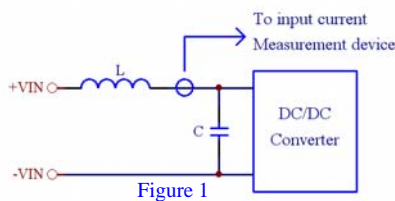
GENERAL SPECIFICATIONS		
Efficiency		See table
Isolation voltage	Input to Output	1600VDC, min
	Input (Output) to Case	1600VDC, min
Isolation resistance		10 ⁹ ohms, min
Isolation capacitance		1000pF, max
Switching frequency		300KHz, typ
Approvals and standard		IEC60950-1, UL60950-1, EN60950-1
Case material		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)		1.315 x 10 ⁶ hrs
ENVIRONMENTAL SPECIFICATIONS		
Operating temperature range		-40°C ~ +85°C (with derating)
Maximum case temperature		100°C
Over temperature protection		115°C, typ
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, 10G, 30minutes along X,Y and Z
Relative humidity		5% to 95% RH
EMC CHARACTERISTICS (Note 6)		
Conducted emissions	EN55022	Class A
Radiated emissions	EN55022	Class A
ESD	EN61000-4-2	Perf. Criteria B
Radiated immunity	EN61000-4-3	Perf. Criteria A
Fast transient	EN61000-4-4	Perf. Criteria B
Surge	EN61000-4-5	Perf. Criteria B
Conducted immunity	EN61000-4-6	Perf. Criteria A



Model Number	Input Range	Output Voltage	Output Current	Output Ripple & Noise	Input Current ⁽⁷⁾	Eff ⁽⁸⁾ (%)	Capacitor ⁽⁹⁾ Load max
FEC30-24S1P5W	10 – 40 VDC	1.5 VDC	8000mA	60mVp-p	658mA	80	65000uF
FEC30-24S1P8W	10 – 40 VDC	1.8 VDC	8000mA	60mVp-p	759mA	83	65000uF
FEC30-24S2P5W	10 – 40 VDC	2.5 VDC	8000mA	60mVp-p	1029mA	85	33000uF
FEC30-24S3P3W	10 – 40 VDC	3.3 VDC	6000mA	60mVp-p	994mA	87	19500uF
FEC30-24S05W	10 – 40 VDC	5 VDC	6000mA	75mVp-p	1506mA	87	10200uF
FEC30-24S12W	10 – 40 VDC	12 VDC	2500mA	100mVp-p	1506mA	87	3300uF
FEC30-24S15W	10 – 40 VDC	15 VDC	2000mA	100mVp-p	1488mA	88	1100uF
FEC30-24D12W	10 – 40 VDC	±12VDC	±1250mA	100mVp-p	1563mA	84	±1000uF
FEC30-24D15W	10 – 40 VDC	±15VDC	±1000mA	100mVp-p	1543mA	85	±680uF
FEC30-48S1P5W	18 – 75 VDC	1.5 VDC	8000mA	60mVp-p	329mA	80	65000uF
FEC30-48S1P8W	18 – 75 VDC	1.8 VDC	8000mA	60mVp-p	380mA	83	65000uF
FEC30-48S2P5W	18 – 75 VDC	2.5 VDC	8000mA	60mVp-p	508mA	86	33000uF
FEC30-48S3P3W	18 – 75 VDC	3.3 VDC	6000mA	60mVp-p	497mA	87	19500uF
FEC30-48S05W	18 – 75 VDC	5 VDC	6000mA	75mVp-p	744mA	88	10200uF
FEC30-48S12W	18 – 75 VDC	12 VDC	2500mA	100mVp-p	753mA	87	3300uF
FEC30-48S15W	18 – 75 VDC	15 VDC	2000mA	100mVp-p	744mA	88	1100uF
FEC30-48D12W	18 – 75 VDC	±12VDC	±1250mA	100mVp-p	772mA	85	±1000uF
FEC30-48D15W	18 – 75 VDC	±15VDC	±1000mA	100mVp-p	762mA	86	±680uF

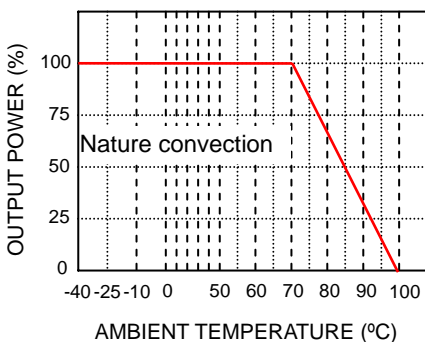
Note

- The dual output 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
- Please add an external filter at converter input terminals when measuring input reflected ripple, as figure 1. L: Simulated source impedance of 12 μH
C: Nippon chemi-con KMF series 220 μF/100V
- The ON/OFF control function. There are positive logic (standard) and negative logic (option). The pin voltage is referenced to negative input
To order negative logic ON/OFF control add the suffix-N (Ex: FEC30-24S05W-N).
- BELLCORE TR-NWT-000332. Case 1: 50% Stress, Temperature at 40°C.
(Ground fixed and controlled environment).
- Heat sink is optional and P/N: 7G-0011A.
- An external filter capacitor is required for EMC testing. The capacitor should be capable of handling 1A ripple current for 12V/24V/48V models. Power mate suggest: Nippon chemi-con KMF series, 220 μF/100V, ESR 90mΩ.
- Maximum value at nominal input voltage and full load.
- Typical value at nominal input voltage and full load.
- Test by minimum Vin and constant resistive load.

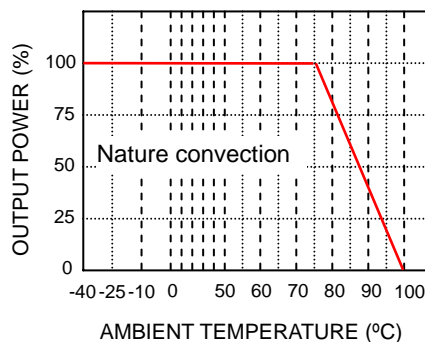


- All dimensions in Inches (mm)
Tolerance x.xx±0.02(x.xx±0.5)
- Pin pitch tolerance ±0.014(0.35)

FEC30-24S3P3W
Derating Curve without Heat-Sink



FEC30-24S3P3W (Note 5)
Derating Curve with Heat-Sink



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