POWER MATE TECHNOLOGY CO.,LTD.

FEC30W-SERIES

- 30WATTS MAXIMUM OUTPUT POWER
- 4:1 WIDE INPUT VOLTAGE RANGE
- INTERNATIONAL SAFETY STANDARD DESIGNE
- SIX-SIDED CONTINUOUS SHIELD
- HIGH EFFICIENCY UP TO 89%
- STANDARD 2" X 1.6" X 0.4" PACKAGE
- FIXED SWITCHING FREQUENCY

SAFETY APPROVAL PENDING

The FEC30-W offer 30 Watts of output power from a 2 x 1.6 x 0.4 inch package without derating to 60ºC. The FEC30-W 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. The safety designed meet to EN60950 and UL1950. 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 25ºC otherwise noted

OUTPUT SPECIFICATIONS

Output Power		30 Watts max
Voltage accuracy	Full load and nominal Vin	± 1%
Voltage adjustability		± 10%
Minimum load (Note1)		10% of FL
Line regulation	LL to HL at Full Load	± 0.5%
Load regulation	10% to 100% FL	± 0.5%
Ripple and noise	20MHz bandwidth (Measured with a 104pF/50V MLCC)	75mVp-p
Temperature coefficient		± 0.02% / ºC, max
Transient response recovery time	25% load step change	300uS
Over voltage Zener diode clamp	1.8V output 2.5V output 3.3V output 5V output	TBD 3.6V 3.9V 6.2V
Over load protection	% of full load at nominal Vin	150% typ
Short circuit protection		Hiccup, automatics recovery

INPUT SPECIFICATIONS

Input voltage range	24V nominal input 48V nominal input	10 – 40VDC 18 – 75VDC
Input filter		L-C type
Input surge voltage 100mS max	24V input 48V input	50VDC 100VDC
Input reflected ripple current	Nominal Vin and full load	150mA
Start up time	Nominal Vin and constant resistor load	25mS
Remote ON/OFF (Note2) (Positive logic)	DC-DC ON DC-DC OFF	Open or 3.5V < Vr < 12V Short or 0V < Vr < 1.2V
Remote off input current	Nominal Vin	2.5mA

GENERAL SPECIFICATIONS

Efficiency		See table
Isolation Voltage		1600VDC
Isolation resistance		10^9 ohms
Isolation capacitance		1000pF
Switching frequency		300 KHz
Design meet safety standard		UL1950, EN60950
Case material		Nickel-coated copper
Base material		Non-conducted black plastic
Potting material		Epoxy (UL94-V0)
Weight		48g (1.69 oz)
Dimensions		2.00 x 1.60 x 0.40 Inches (50.8 x 40.6 x 10.2 mm)
MTBF	MIL-HDBK-217F, TA=25ºC full load	2.135 x 10^5 hrs

ENVIRONMENTAL SPECIFICATIONS

Operation temperature range		-40ºC to +85ºC (with derating)
Maximum case temperature		+100ºC
Storage temperature range		-55ºC to +105ºC
Thermal impedance (Note3)	Nature convection Nature convection with heat-sink	10ºC/Watt 8.24 ºC/Watt
Thermal shock		MIL-STD-810D
Vibration	10~55Hz, 2G, 3minitues period, 30minitues along X,Y and Z	
Relative humidity		5% to 95% RH

EMC CHARACTERISTICS

Conducted emissions	EN55022	Level A
Radiated emissions	EN55022	Level A
Conducted immunity	EN61000-4-6	Perf. Criteria2
Radiated immunity	EN61000-4-3	Perf. Criteria2
Surge	EN61000-4-5	Perf. Criteria2
Fast transient	EN61000-4-4	Perf. Criteria2
ESD air	EN61000-4-2	Perf. Criteria2

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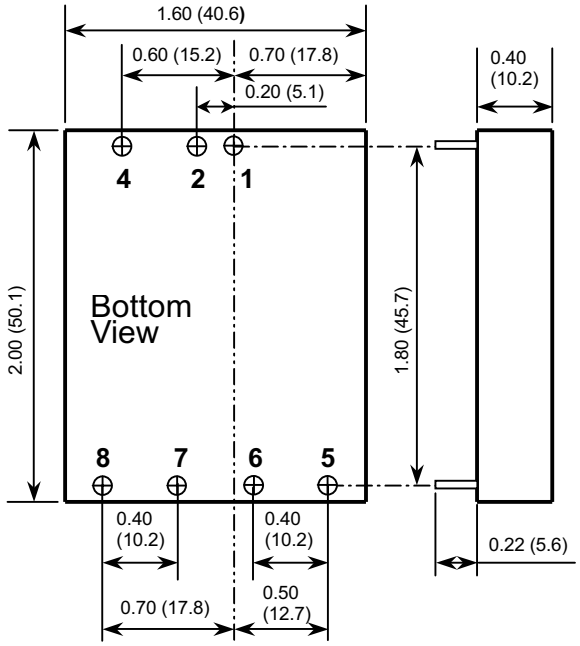
30 WATTS DC-DC CONVERTER

Model Number	Input Range	Output Voltage	Output Current	Input Current(4)	Eff (5) (%)	Capacitor Load max.
FEC30-24S1P8W	10 – 40 VDC	1.8 VDC	8000mA	0.789A	80	65000uF
FEC30-24S2P5W	10 – 40 VDC	2.5 VDC	8000mA	1.068A	82	33000uF
FEC30-24S3P3W	10 – 40 VDC	3.3 VDC	6000mA	1.006A	86	19500uF
FEC30-24S05W	10 – 40 VDC	5 VDC	6000mA	1.488A	88	10200uF
FEC30-48S1P8W	18 – 75 VDC	1.8 VDC	8000mA	0.390A	81	65000uF
FEC30-48S2P5W	18 – 75 VDC	2.5 VDC	8000mA	0.527A	83	33000uF
FEC30-48S3P3W	18 – 75 VDC	3.3 VDC	6000mA	0.497A	87	19500uF
FEC30-48S05W	18 – 75 VDC	5 VDC	6000mA	0.735A	89	10200uF

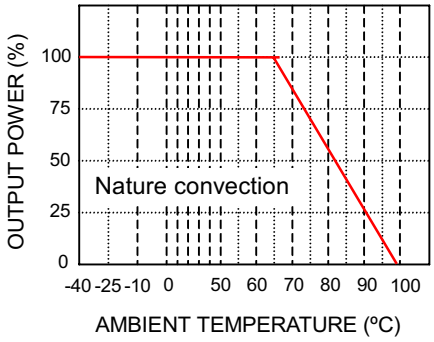
Note

1. The FEC30W series 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
2. 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: FEC30-24S05WN)
3. Heat sink is optional and P/N: 7G-0011
4. Maximum value at nominal input voltage and full load
5. Typical value at nominal input voltage and full load

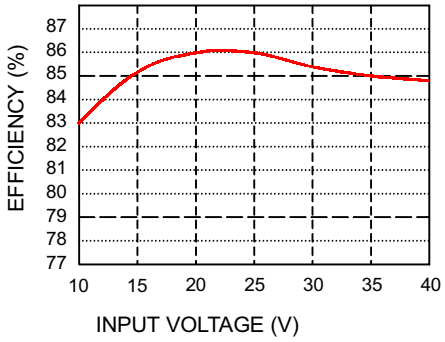


1. All dimensions in Inches (mm)
2. Pin pitch tolerance ±0.014(0.35)

FEC30-24S3P3W
Derating Curve without Heat-Sink

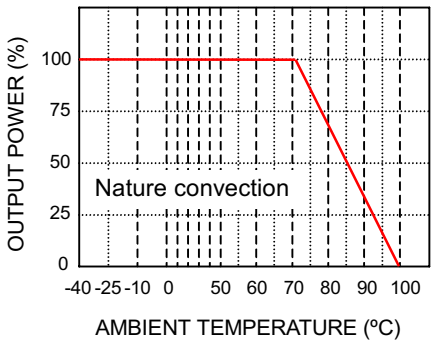


FEC30-24S3P3W
Efficiency VS Input voltage

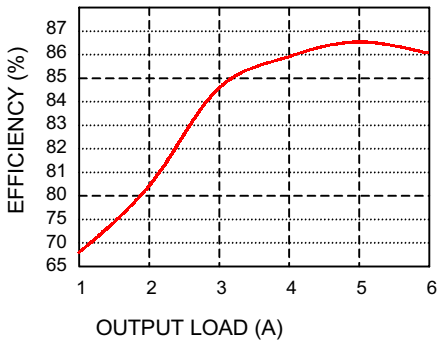


PIN CONNECTION	
PIN	DEFINE
1	+ INPUT
2	- INPUT
4	CTRL
5	NO PIN
6	+ OUTPUT
7	- OUTPUT
8	TRIM

FEC30-24S3P3W (Note3)
Derating Curve with Heat-Sink



FEC30-24S3P3W
Efficiency VS Output load



EXTERNAL OUTPUT TEIMMING