

FES SERIES - 300 WATT

DESCRIPTION

FES single output DC/DC converters provide up to 300 Watts of output power and up to 60 Amperes of output current in a full brick package. The FES converters feature open-frame packaging, along with planar magnetics and a high efficiency topology, to provide maximum useable power density. The FES converters use 100% surface-mount construction and are fully compatible with production board washing processes.

TECHNICAL SPECIFICATIONS

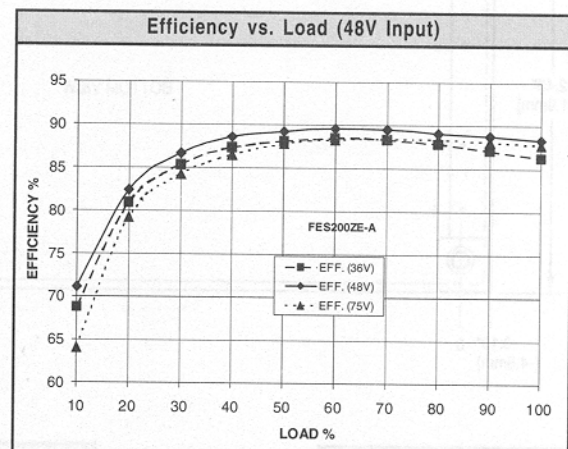
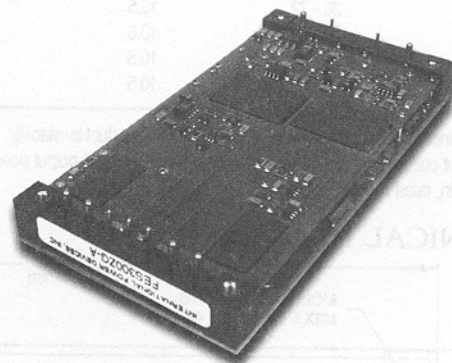
Input	
Voltage Range	
48 VDC Nominal	36 - 75 VDC
Undervoltage Lockout - Turn on / Turn off	34 / 32 VDC

Output	
Setpoint Accuracy	±1%
Line Regulation V_{in} Min. - V_{in} Max., I_{out} Rated	0.2% V_{out}
Load Regulation I_{out} Min. - I_{out} Max., V_{in} Nom.	0.2% V_{out}
Remote Sense Headroom	0.5 VDC
Minimum Output Current	10 % I_{out} Rated
Dynamic Regulation, Loadstep	25% I_{out}
Pk Deviation	4% V_{out}
Settling Time	500 μ s
Voltage Trim Range	±10%
Current Limit Threshold Range, % of I_{out} Rated	110 - 140%
OVP Trip Range	120 - 140% V_{out} Nom.
OVP Type	Self Recovering
Short Circuit/Over Current Protection	Shutdown/Hiccup

General	
Turn-On Time	10 ms
Remote Shutdown	Positive Logic
Remote Shutdown Reference	V_{in} Negative
Switching Frequency	200 or 300 kHz
Isolation	
Input - Output	1500 VDC
Input - Case	1050 VDC
Output - Case	500 VDC
Temperature Coefficient	0.03%/°C
Case Temperature	
Operating Range	-40 To +100°C
Storage Range	-40 To +125°C
Thermal Shutdown Range	105 To 125°C
Vibration, 3 Axes, 5 Min Each	5 g, 10 - 55 Hz
MTBF ¹ (Bellcore TR-NWT-000332)	Consult Factory
Safety	UL, CUL, TUV
Weight (Approx.)	4.4 oz

FEATURES

- 60A "Full Brick"
- Very High Efficiency
- Open-Frame Packaging
- 100°C Baseplate Operation
- Planar Magnetics
- Excellent Transient Response
- 1500V Isolation
- Synchronous Rectification



Notes

¹ MTBF predictions may vary slightly from model to model.

Specifications typically at 25°C, normal line, and full load, unless otherwise stated.

Soldering Conditions: I/O pins, 260°C, ten seconds; fully compatible with commercial wave-soldering equipment.

Safety: Agency approvals may vary from model to model. Please consult factory for specific model information.

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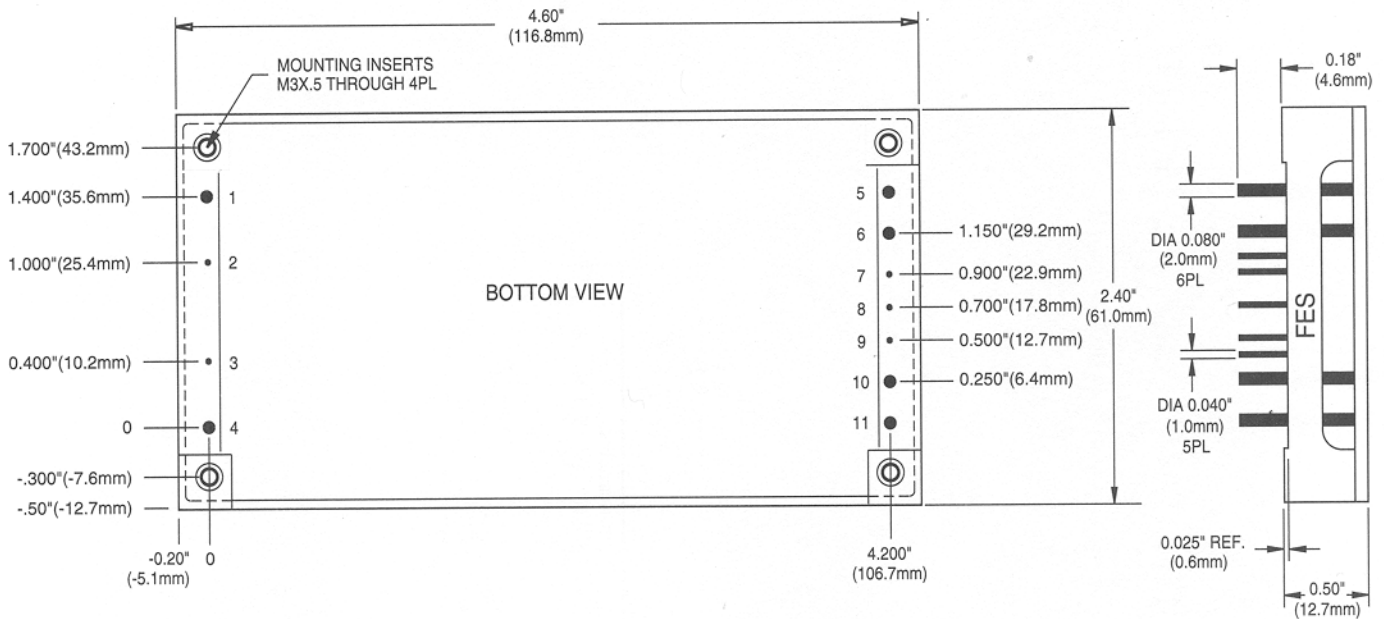
MODELS - (See the last page of Section C for options.)

Vin (Volts)	Vin Range (Volts)	Iin Max* (Amps)	Vout (Volts)	Iout Rated (Amps)	Ripple & Noise Pk-Pk (mV)	Efficiency Typ. **	Model
48	36 - 75	3.5	2.5	40	100	85%	FES100ZD-A
48	36 - 75	4.5	3.3	40	100	87%	FES132ZE-A
48	36 - 75	6.5	5.0	40	100	80%	FES200ZG-A
48	36 - 75	5.0	2.5	60	100	79%	FES150ZD-A
48	36 - 75	7.0	3.3	60	100	81%	FES200ZE-A
48	36 - 75	10.5	5.0	60	100	84%	FES300ZG-A

* Maximum input current at minimum input voltage, maximum rated output power.

** At nominal Vin, rated output.

MECHANICAL DRAWING



Thermal Impedance	
Natural Convection	5.4 °C/W
100 LFM	3.8 °C/W
200 LFM	2.5 °C/W
300 LFM	1.7 °C/W
400 LFM	1.6 °C/W

Note:
Thermal impedance data is dependent on many environmental factors. The exact thermal performance should be validated for specific application.

Pin	Function
1	-V _{in}
2	Case
3	Enable
4	+V _{in}
5	-V _{out}
6	-V _{out}
7	-Sense
8	Trim
9	+Sense
10	+V _{out}
11	+V _{out}

Tolerances	
Inches:	(Millimeters)
.XX ± 0.020	.X ± 0.5
.XXX ± .010	.XX ± 0.25
Pin:	
± 0.002	± 0.05

(Dimensions as listed unless otherwise specified.)