



Unit measures 1"W x 2"L x 0.4"H

- Wide 4 : 1 Input Range
- High Efficiency to 89%
- Regulated Outputs
- 1600V Isolation
- 6 Sided Shielding
- Standard Pinouts

Model Number	Output Volts	Output Amps	Input Range	Input Amps (NL/FL)	Ripple & Noise	Efficiency	Capacitive Load
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SINGLE OUTPUT

FED20-24S3P3W	3.3 VDC	5.5	9-36 VDC	50 / 934 mA	60mV p-p	85%	18000uF max.
FED20-48S3P3W		5.5	18-75 VDC	35 / 467 mA	60mV p-p	85%	18000uF max.
FED20-24S05W	5 VDC	4	9-36 VDC	65 / 922 mA	75mV p-p	88%	9600uF max.
FED20-48S05W		4	18-75 VDC	35 / 496 mA	75mV p-p	88%	9600uF max.
FED20-24S12W	12 VDC	1.67	9-36 VDC	22 / 1018 mA	75mV p-p	86%	1650uF max.
FED20-48S12W		1.67	18-75 VDC	15 / 503 mA	75mV p-p	87%	1650uF max.
FED20-24S15W	15 VDC	1.33	9-36 VDC	22 / 1014 mA	75mV p-p	86%	1050uF max.
FED20-48S15W		1.33	18-75 VDC	15 / 501 mA	75mV p-p	87%	1050uF max.

DUAL OUTPUT

FED20-24D05W	±5 VDC	±2	9-36 VDC	55 / 992 mA	100mV p-p	88%	±4800uF max.
FED20-48D05W		±2	18-75 VDC	35 / 490 mA	100mV p-p	89%	±4800uF max.
FED20-24D12W	±12 VDC	±0.833	9-36 VDC	30 / 1004 mA	100mV p-p	87%	±825uF max.
FED20-48D12W		±0.833	18-75 VDC	17 / 496 mA	100mV p-p	88%	±825uF max.
FED20-24D15W	±15 VDC	±0.667	9-36 VDC	30 / 1005 mA	100mV p-p	87%	±525uF max.
FED20-48D15W		±0.667	18-75 VDC	17 / 496 mA	100mV p-p	88%	±525uF max.

INPUT SPECIFICATIONS

I/P Voltage Range (24/48V Nom.)	9-36 / 18-75VDC
Voltage Surge (100mS max)	24 V: 50 VDC; 48 V: 100 VDC
Under Voltage Lockout	
24 VDC I/P	DC/DC ON: 9 VDC OFF: 7.5 VDC
48 VDC I/P	DC/DC ON: 15 VDC OFF: 18 VDC
Input Filter	Pi Type
Input Voltage Variation (dv/dt)	5V/rms, max. to ETS300 132 part 4.4
Input Reflected Ripple Current	20mA p-p
Start Up Time (Power Up or RC)	20mS, typ.
On/Off Control	Positive Logic: (Ref to - Input) is standard.
	ON = Open or $3V < V_r < 12V$
	OFF = Short or $0V < V_r < 1.2V$
	Negative Logic: (optional)
	ON = Short or $0V < V_r < 1.2V$
	OFF = Open or $3V < V_r < 12V$
Efficiency	See Selection Chart

OUTPUT SPECIFICATIONS

Voltage and Current	See Selection Chart
Load Regulation	NL-FL Singles: $\pm 0.5\%$ Duals: $\pm 1\%$
Cross Regulation (Dual 25%-FL)	$\pm 5\%$
Voltage Adjustability (Single O/P)	$\pm 10\%$
Line Regulation (Single/Dual)	$\pm 0.2\%$ / $\pm 0.5\%$
Temperature Coefficient	$\pm 0.02\%/^{\circ}C$, max.
Ripple/Noise	See Selection Chart
Voltage Accuracy	$\pm 1\%$
Transient Response Recovery	
25% Load Step Change	250 microSeconds
Short Circuit Protection	Continuous Hiccup, self-recovering
Overvoltage Protection, Zener Diode Clamp:	
3.3V Output	3.9Volts
5V Output	6.2Volts
12V Output	15Volts
15V Output	18Volts
Overload Protection	150% of FL Rating, typ.

* These are stress ratings. Exposure of the devices to any of these conditions may adversely affect long term reliability. Proper operation under conditions other than the standard operating conditions is neither warranted nor implied.

GENERAL SPECIFICATIONS

Input-Out Isolation	1600VDC
In/Out Capacitance	1500 pF, max.
Isolation Resistance	10000 M Ohms
Switching Frequency	400Khz, typ

ENVIRONMENTAL SPECIFICATIONS

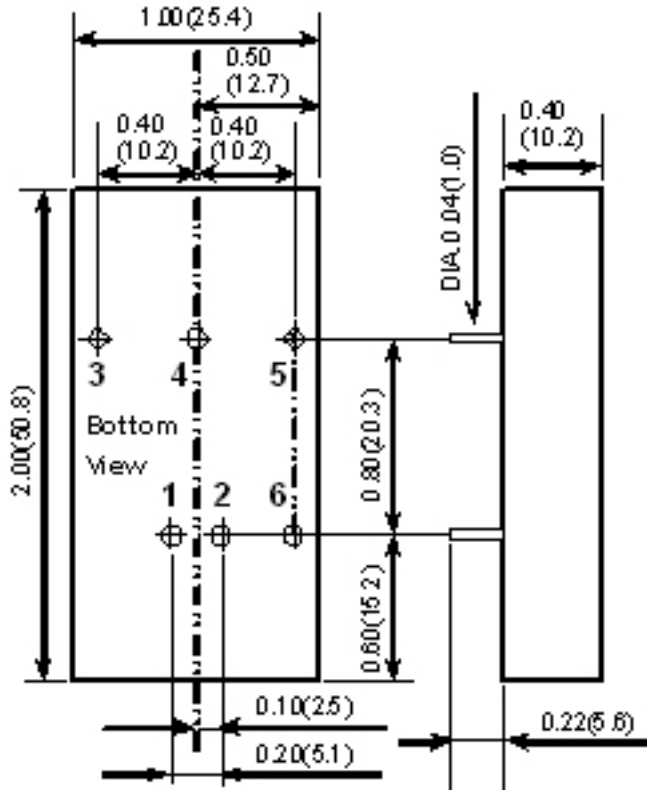
Oper. Temperature	-40 to +105°C (see derate curve)
Relative Humidity	5-95%
Storage Temperature	-55 to +125°C *
Maximum Case Temp	105°C *
Thermal Impedance	Convection: 12°C/Watt Convection w. Heatsink: 10°C/Watt
Thermal Shock	MIL-STD-810D
Vibration	10-55Hz 10G 30 min. on X, Y, Z axes
MTBF	
BELLCORE TR-NWT-000322 Case 1: 50% Stress, Temp. @ 40°C	1.691 MHrs
MIL-HDBK-217F TA=25°C FL, Ground Benign, Controlled Environment	562.9 KHrs
EMI	EN55022A
ESD	EN61000-4-2 Criteria B
Radiated Immunity	EN61000-4-3 Criteria A
EFT	EN61000-4-4B Criteria B
Surge	EN61000-4-5B Criteria B
Conducted Immunity	EN61000-4-6A Criteria A

PHYSICAL SPECIFICATIONS

Case Material	Nickel-Coated Copper w. FR4 Base
Construction	Encapsulated w, UL94-V0 Epoxy
Dimensions	2"L x 1"W x 0.4"H (50.8 x 25.4 x 10.2mm)
Weight	0.95oz (27g)

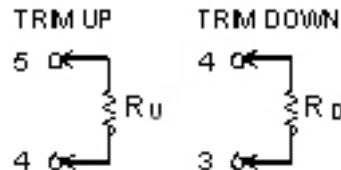
All specifications are typical at nominal input, full load, and 25DegC unless otherwise noted

MECHANICAL DIMENSIONS



Pin #	Single	Dual
1	+ Input	+ Input
2	- Input	- Input
3	+ Output	+ Output
4	Trim	Common
5	- Output	- Output
6	CTRL	CTRL

Output can be externally trimmed by using the method shown below



- All dimensions in Inches (mm)
Tolerance $\times \times \pm 0.02 (\times \pm 0.5)$
- Pin Pitch tolerance $\pm 0.014 (0.35)$

OUTPUT DERATING CURVES

