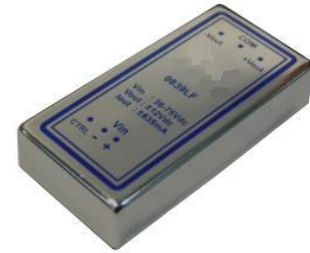


## 20 Watt, ECN Series, DC-DC Converter (Single & Dual Output)

**ALL PSU LTD**  
Electronic Power Solutions

- 4:1 Input Range
- Ultra Compact 2x1" Footprint
- 1600V Isolation
- Over Voltage & Over Current Protection
- Adjustable Output Voltage
- Remote On/Off
- High Efficiency up to 91%
- -40 to +105 °C Operational Temperature Range



### Specification (typical values shown)

Input Ranges.....	9~36 Volts, 18-75 Volts
Outputs.....	Single or dual outputs available (see table below)
Line Regulation.....	+/-0.5%
Load Regulation.....	+/-0.5% for single O/P. Duals are +/-1% max
Efficiency.....	See table for each model
Overload Protection.....	120% of full load typical
Short Circuit Protection.....	Continuous, auto-recovery (hiccup)
Isolation Voltage.....	Input to Output: 1600 VDC Input & Output to case: 1600 VDC
Operating Temperature.....	-40 to +66°C @ full load, derates to zero at 105°C.
Storage Temperature.....	-40 to +125 °C
Case Material.....	Nickel coated copper, non conductive base
Switching Frequency.....	330 kHz typical
Ripple & Noise.....	75 mV pk-pk (20 MHz bandwidth)
Radiated Emissions.....	EN55022 Class A
Conducted Emissions.....	EN55022 Class A
Safety.....	IEC/EN60950-1 (designed to meet)
MTBF.....	>560 khrs (MIL-HDBK-217F) calculated

### Models and Ratings

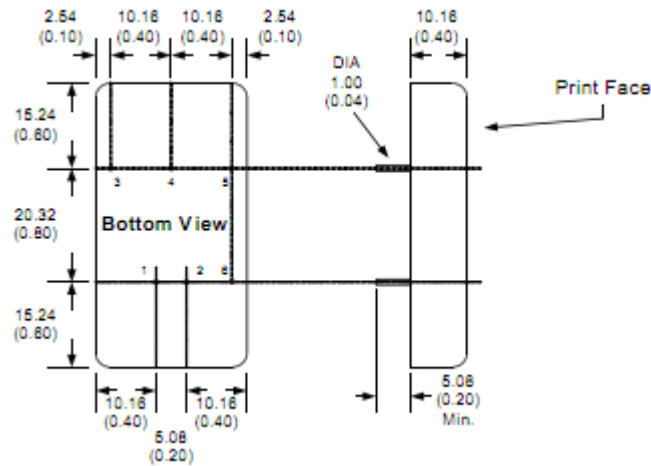
Model (9-36V input)	Model (18-75V input)	Output (VDC)	Output Current	Efficiency
<b>Single Output Units</b>				
ECN20-24S3R3	ECN20-48S3R3	3.3 V	5500 mA	89%
ECN20-24S05	ECN20-48S05	5.0 V	4000 mA	91%
ECN20-24S12	ECN20-48S12	12.0 V	1670 mA	89%
ECN20-24S15	ECN20-48S15	15.0 V	1330 mA	89%
<b>Dual Output Units</b>				
ECN20-24D05	ECN20-48D05	+/-5.0 V	+/-2000 mA	89%
ECN20-24D12	ECN20-48D12	+/-12.0 V	+/-835 mA	88%
ECN20-24D15	ECN20-48D15	+/-15.0 V	+/-665 mA	89%

For mechanical data and pinout, see next page

Specifications may change without notice, E&OE. ALL PSU Terms & Conditions apply.

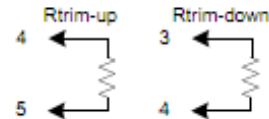
**ALL PSU Ltd, Unit D6 Laser Quay, Culpeper Close, Medway City Estate,  
Rochester, Kent, ME24HU, Tel : 01634 725527, Fax : 01634 739111  
Email: sales@allpsu.co.uk Web: www.allpsu.co.uk**

## Mechanical Details and Pin-Out



Pin	Function	Function
	Single O/P	Dual O/P
1	+V in	+V in
2	-V in	-V in
2	+V out	+V out
4	Trim	Com
5	-V out	-V out
6	CTRL	CTRL

Output voltage can be trimmed by using the method shown below. (Single output models only)

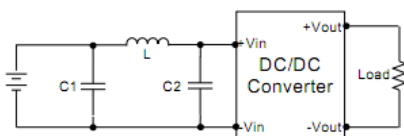


**Remote on/off (CTRL) (6)**  
**On:** >3Vdc or open circuit  
**Off:** <1.2Vdc or short pins 2 & 6  
**OFF idle current, 5 mA typical**

### Notes:

The remote on/off pin is referenced to -V in (Pin 2).  
 The input filter components (C1, C2 & L) are used to help meet conducted emission requirements and should be mounted as close as possible to the module and lead lengths minimised.  
 An external filter capacitor is required if the module has to meet EN61000-4-4 and EN61000-4-5  
**Suggested filter capacitor: Nippon chemi-con KY series 220 uF/100 V**

### Input Filter



Model	C1	C2	L
ECN20-24xxxxx	1210,2.2uF/100V	1210,2.2uF/100V	12 uH
ECN20-48xxxxx	1210,2.2uF/100V	1210,2.2uF/100V	12 uH

Specifications may change without notice, E&OE. ALL PSU Terms & Conditions apply.

**ALL PSU Ltd, Unit D6 Laser Quay, Culpeper Close, Medway City Estate,  
 Rochester, Kent, ME2 4HU, Tel : 01634 725527, Fax : 01634 739111  
 Email: sales@allpsu.co.uk Web: www.allpsu.co.uk**