

AC/DC

20 Watts

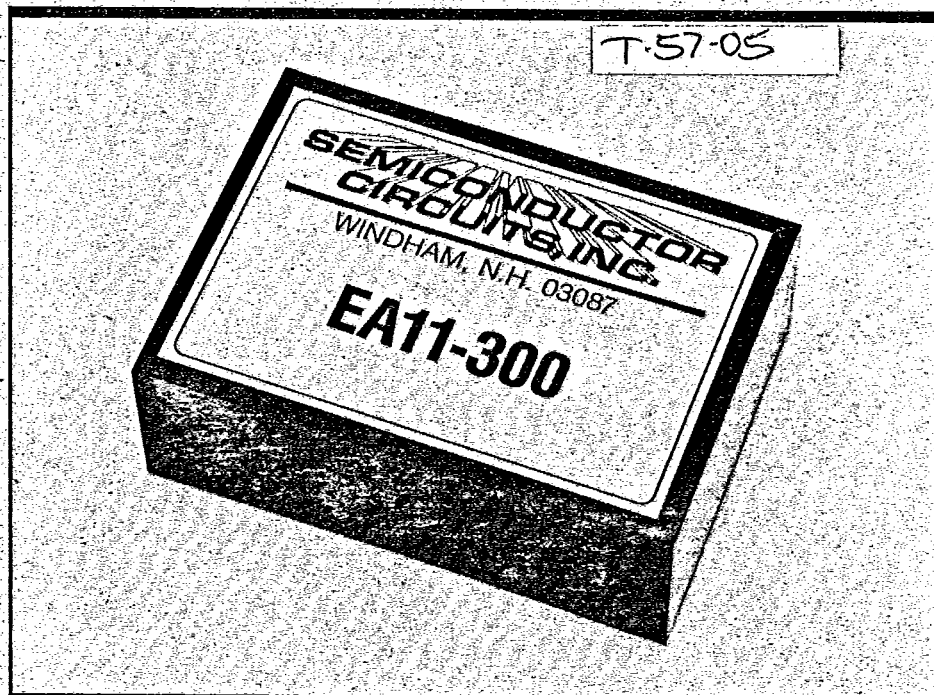
Single/Dual Outputs

EA, ES, EC Series

- 90/110/220 VAC inputs
- Line transient immunities greater than 60 dB
- Efficiency 65% (typ.)
- Chassis or PC mount
- OVP crowbar option
- Isolation to 2500 VAC

The EA, ES and EC Series of line operated power supplies features near constant efficiency over the entire rated input voltage range. These electrically identical families employ a highly efficient, closed loop ripple regulation circuit which contains a low pass filter. Each stage, transformer, filter and regulator is engineered for maximum efficiency. This combination provides cooler operation, higher overall system reliability and greater line transient immunity to 60 dB, all to a degree unmatched by conventional power supply designs. Excellent thermal management permits full power output over the full operation range to +70° with NO DERATING.

The EA and ES Series are plug-in modules offering a choice of two industry-standard pin-outs. The EC Series is a chassis-mount with a top-mounted, five-terminal barrier strip for power entry/exit.



Specifications

INPUT

Voltage and Frequency

105 to 125 Vac - 50 to 440 Hz (standard)
 200 to 252 Vac - 50 to 60 Hz Add Suffix I
 90 to 110 Vac - 50 to 60 Hz Add Suffix N
 105 to 125/210 to 250 Vac Add Suffix K2

NOTE: Suffix I, N and K2 available on selected models - consult factory.

OUTPUT

Voltage Tolerance $\pm 1\%$ (Fixed)
 Ripple and Noise (PARD) 7 mV RMS
 Temperature Coefficient 0.02%/°C (typ)
 Overcurrent Protection Power Foldback

GENERAL

Regulation: Line/Load 0.15%/0.15%
 I/O Isolation Voltage 1500 V RMS
 (Suffix I: 2500 Vac)
 Resistance: 50 Megohms

ENVIRONMENTAL

Operating Temperature Range -25°C to +71°C (No derating)
 Storage Temperature Range -40°C to +85°C
 Cooling Free-air Convection

**SEMICONDUCTOR
CIRCUITS, INC.**

SUBSIDIARY OF EMERSON ELECTRIC CO.

All specifications are typical at nominal line and full load at 25° unless otherwise noted.

EA, ES, EC Series Ordering Information

ASTECH AMERICA/SEMICON

31E D

1013152 0000818 0 AAI T-57-05

Output Voltage (Vdc)	Output Current (mA)	AC Pin Spacing Inches (mm)	Pkg. (Fig.)	Model Number
5V	1500	2.0 (51)	1-B	ES11-150
		2.2 (56)	1-B	EA11-150
		—	2-C	EC11-150
	3000	2.0 (51)	1-C	ES11-300
		2.2 (56)	1-C	EA11-300
		—	2-D	EC11-300
	4000	2.0 (51)	1-D	ES11-400
		2.2 (56)	1-D	EA11-400
		—	2-D	EC11-400
12V	800	2.0 (51)	1-B	ES12-080
		2.2 (56)	1-B	EA12-080
		—	2-C	EC12-080
	1500	2.0 (51)	1-D	ES12-150
		2.2 (56)	1-D	EA12-150
		—	2-D	EC12-150
24V	400	2.0 (51)	1-B	ES17-040
		2.2 (56)	1-B	EA17-040
		—	2-C	EC17-040
±12V	±500	2.0 (51)	1-D	ES22-100
		2.2 (56)	1-D	EA22-100
		—	2-D	EC22-100
±15V	±500	2.0 (51)	1-D	ES23-100
		2.2 (56)	1-D	EA23-100
		—	2-D	EC23-100

Dimensions and Connections

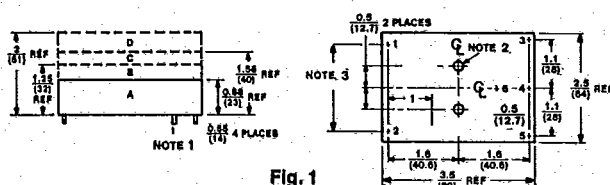
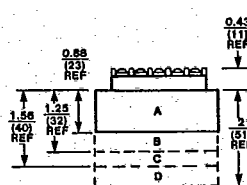


Fig. 1



EC SERIES (Figure 2)
Single Output
TERM

1. AC in
2. AC in
3. +Vdc out
4. Do Not Connect
5. -Vdc out

Dual Output
TERM

1. AC in
2. AC in
3. +Vdc out
4. Common out
5. -Vdc out

PIN CONNECTIONS ES & EA SERIES (Figure 1) Single Output 2.0" AC Pin Spacing

- PIN
1. AC in
 2. AC in
 3. -Vdc out
 4. Do Not Connect
 5. +Vdc out
 6. High Isolation*

Single Output 2.2" AC Pin Spacing

- PIN
1. AC in
 2. AC in
 3. Do Not Connect
 4. -Vdc out
 5. +Vdc out
 6. High Isolation*

Dual Outputs 2.0" & 2.2" AC Pin Spacing

- PIN
1. AC in
 2. AC in
 3. -Vdc out
 4. Common out
 5. +Vdc out
 6. High Isolation*

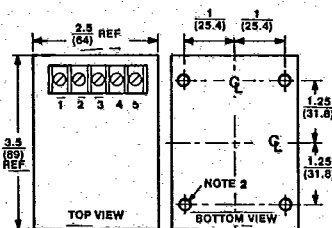


Fig. 2

NOTES:

1. Pin 6 is provided in J option only
2. Pins 0.040 (1) Dia x 0.20 (5.1) Lg Min
3. Mounting Inserts No. 4-40 x 0.10 (2.5) Dp Min
4. Suffix K2 Pin-out — consult factory

*Measured with 33 MF 25V tantalum capacitor across each output.
Specifications subject to change without notice.

**SEMICONDUCTOR
CIRCUITS, INC.**
SUBSIDIARY OF EMERSON ELECTRIC CO.