

# AA20B

20 Watts

## AA20B Series

Total Power	20 Watts
Input Voltages	12V, 24V or 48V
# of Outputs	Single, Dual



## SPECIAL FEATURES

- Six-sided shielding
- Wide 2:1 $\Delta$ /4:1 input range
- Telecom models (-048L models) feature thermal shutdown and undervoltage lock out to meet ETS 300 132-2 paragraph 4.6
- Small size 2.0" x 1.6" x 0.40"
- 5 year warranty

## ENVIRONMENTAL

Operating ambient temperature range:  
-40°C to +60°C

Operating Temperature (baseplate): 105°C max

Storage Temperature: -55°C to +105°C

Cooling Method: Convection

EMI/RFI: Six-sided shielding

MTBF: 361,000 hours (MIL HDBK-217)  
Bellcore: >1.7 Mil hours. See notes.

## SAFETY

**UL** UL1950 Recognized  
**CSA** CSA22.2-950 Certified  
**TUV** EN60950 Certified

Switching frequency ..... 200kHz  
Temperature coefficient .....  $\pm 0.02\%$  per °C

## NOTES

1. An external .1 $\mu$ F ceramic capacitor is recommended to be placed from +Vout to -Vout. 20MHz bandwidth.
2. Consult factory for filter recommendations to meet FCC, or other specifications.
3. Requires external 2.2 $\mu$ F 100V film capacitor (ITW/Paktron part # 225K100RA4 or equiv.) on input.
4. Calculated for MIL HDBK-217E ground Benign at 25°C full load. Bellcore calculated per TR-NWT-000332 method 1 parts count, case 1.
5. Minimum load 10% of full load.
6. All specifications are typical at nominal input and full load unless otherwise noted.
7. Specifications subject to change without notice.
8. Mechanical drawings for reference only.

## ELECTRICAL SPECIFICATIONS

### Input

Input range ..... 9 to 36 VDC; 18 to 75 VDC;  
36 to 75 VDC: 9 to 18 VDC  
 Input capacitance ..... 46L & 48L 2.2 $\mu$ F (typ);  
012L & 24L 4.9 $\mu$ F (typ)  
 Input capacitor ..... Required See Note 3  
 No load input power ..... 350mW (typ)  
 Input reflected ripple (P-P) ..... 46L & 48L 105mA (typ);  
012L & 24L 90mA (typ);  
See Note 2  
 Input capacitance ..... 2.5 $\mu$ F typical  
 Input surge voltage ..... 100V for 100mS (046L and 048L)  
50V for 100mS (024L)  
 Efficiency ..... 81 - 88% typical

### Control

Enable ..... on = 2.5 to 5.5Vdc or open circuit  
off = 0 to 0.8Vdc  
Ref. to -Vin. TTL compatible

### Output

Voltage tolerance .....  $\pm 1\%$  max (factory set-point)  
 Line regulation .....  $\pm 0.25\%$  max  
 Load regulation .....  $\pm 0.5\%$  (10%L-FL max (main))  
 $\pm 1.0\%$  (10%L-FL max (aux))  
bal. loads  
 Output voltage  
 Adjust range .....  $\pm 10\%$  using external resistor or trim pot  
 Short circuit protection ..... Continuous Power Cycle (main)  
 Overvoltage protection ..... Zener Clamp  
 Transient response ..... 500usec  
(50% step load change to with 1% V<sub>o</sub>)  
 Noise/ripple ..... 50mV p-p (typ) (See note 1)

### Isolation

Input to output ..... 1500 VDC  
 Isolation resistance .....  $1 \times 10^9$  (Ohms)  
 Isolation capacitance ..... 100pF

AA20B-012L-033S  
 AA20B-024L-033S  
 AA20B-048L-033S

## ORDERING INFORMATION

Input Voltage	Output 1 Voltage	Output 2 Voltage	Maximum Power	Model Number
9-18V	3.3V @ 4.5A		15W	AA20B-012L-033S
9-36V	5V @ 4A		20W	AA20B-024L-050S
9-36V	12V @ 1.670A		20W	AA20B-024L-120S
9-36V	15V @ 1.340A		20W	AA20B-024L-150S
9-36V	12V @ 0.840A	-12V @ 0.840A	20W	AA20B-024L-120D
9-36V	15V @ 0.667A	-15V @ 0.667A	20W	AA20B-024L-150D
18-36V	3.3V @ 5A		16.5W	AA20B-024L-033S
18-75V	5V @ 4A		20W	AA20B-046L-050S
18-75V	12V @ 1.670A		20W	AA20B-046L-120S
18-75V	15V @ 1.340A		20W	AA20B-046L-150S
18-75V	12V @ 0.840A	-12V @ 0.840A	20W	AA20B-046L-120D
18-75V	15V @ 0.667A	-15V @ 0.667A	20W	AA20B-046L-150D
36-75V	3.3V @ 5A		16.5W	AA20B-048L-033S
36-75V	5V @ 4A		20W	AA20B-048L-050S
36-75V	12V @ 1.670A		20W	AA20B-048L-120S
36-75V	15V @ 1.340A		20W	AA20B-048L-150S
36-75V	12V @ 0.840A	-12V @ 0.840A	20W	AA20B-048L-120D
36-75V	15V @ 0.667A	-15V @ 0.667A	20W	AA20B-048L-150D

Please contact Astec for information on other output voltages, power ranges and configurations.

## PIN ASSIGNMENTS

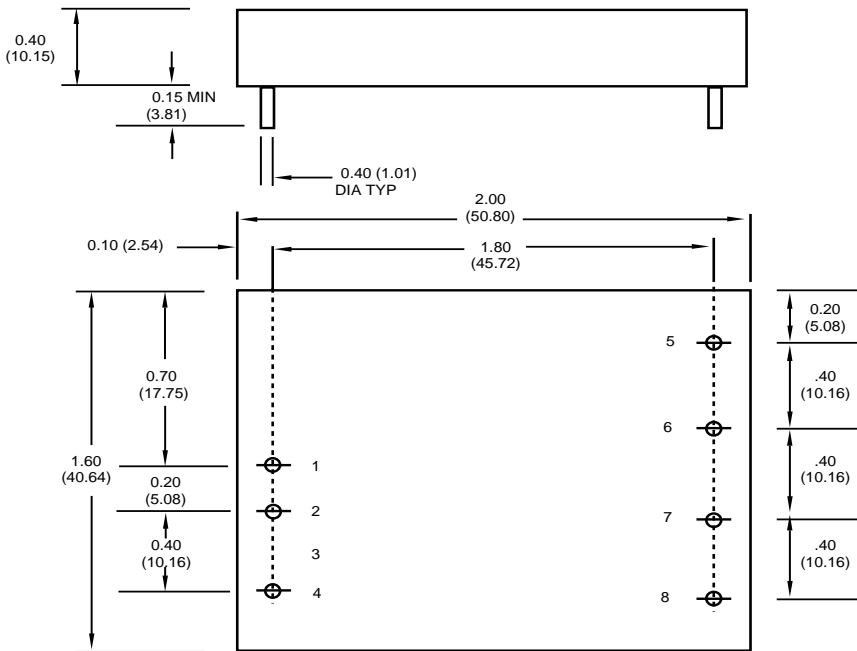
### Single Output

- +Vin (Case GND 048L/046L)
- Vin (Case GND 024L/012L)
- No pin
- Enable
- No pin
- Output 1
- COM
- Trim

### Dual Output

- +Vin (Case GND 048L/046L)
- Vin (Case GND 024L)
- No pin
- Enable
- Output 1
- COM
- Output 2
- Trim

## DIMENSIONS

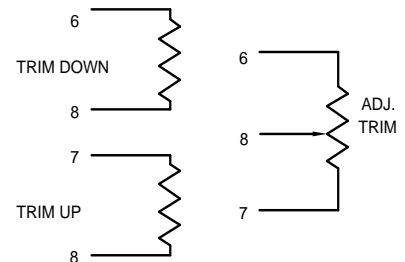


BOTTOM VIEW

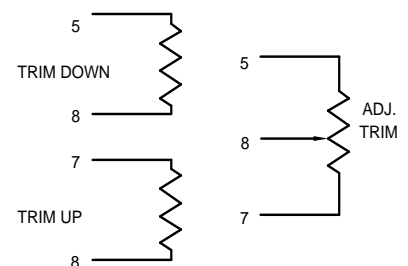
ALL DIMENSIONS ARE IN INCHES (mm)

## TRIM METHOD

(Singles)



(Duals)



Case Material: Metal six-sided  
Weight: 2.0 oz./56 grams.

Note: Pins 0.040 in Dia x 0.15 in min