



MODULAR AC/DC AND DC/DC POWER SUPPLIES

FEATURES

- PC BOARD-COMPATIBLE
- CHASSIS MOUNTABLE
- HIGH RELIABILITY, FULLY TESTED
- LOW INSTALLED COST
- COMPLETELY SELF-CONTAINED

DESCRIPTION

Burr-Brown standard series power supplies and DC/DC converters provide maximum flexibility in systems design. They are particularly useful for powering analog interface circuitry in digital and analog systems and have a wide range of output voltage and current ratings. They are completely self-contained, ready to use encapsulated units. For most OEM users they eliminate engineering start-up/documentation costs and manufacturing delays at prices generally far below internal manufacturing costs.

The AC/DC power supplies have a current limiting circuit in the output stage, designed to withstand output short-circuit-to-common or substantial overload conditions for long periods of time, without causing damage to the power supply.

In applications where isolation between input and output is an essential requirement (such as powering isolation amplifier input and output stages) the Burr-Brown isolated DC/DC converters provide up to 1500VDC of isolation protection.

MODULAR AC/DC POWER SUPPLIES

- PC BOARD/CHASSIS MOUNT TYPE
- $\pm 15\text{VDC}$ DUAL OUTPUTS, $+5\text{VDC}$ SINGLE OUTPUT
- 25mA TO 1000mA CURRENT CAPABILITY
- CURRENT-LIMITED OUTPUTS FOR SHORT CIRCUIT PROTECTION
- INTERNATIONAL AC INPUT VOLTAGE OPTIONS AVAILABLE

SPECIFICATIONS COMMON TO ALL AC/DC POWER SUPPLIES

Input Voltage: 105VAC to 125VAC, 50Hz to 400Hz. For international AC input voltages see options E, F, and H.

Input Isolation: 50M Ω

Breakdown Voltage: 500V, min.

Output Voltage: Error, $\pm 1\%$; temperature coefficient, $\pm 0.02\%/^{\circ}\text{C}$

Output Protection: Current limiting protection for output to withstand overloads and direct short circuits to ground to prevent excessive temperature within the unit.

Rated Operating Temperature: -25°C to $+71^{\circ}\text{C}$. May be operated at higher temperatures with proper derating.

Storage Temperature: -25°C to $+85^{\circ}\text{C}$.

DC/DC CONVERTERS, $\pm 15\text{VDC}$ OUTPUT

- REGULATED $\pm 15\text{VDC}$ FROM UNREGULATED DC INPUT
- DIFFERENT DC INPUT VOLTAGE RANGES AVAILABLE
- HIGH CURRENT CAPABILITY WITH CURRENT LIMIT PROTECTION
- ISOLATED DC/DC CONVERTERS, 75% EFFICIENCY AT FULL LOAD
- LOW COUPLING CAPACITANCE (8pF)
- HIGH ISOLATION VOLTAGE (1500VDC)
- LOW EMI, SHIELDED AND UNSHIELDED UNITS
- UP TO FOUR FULLY ISOLATED OUTPUT CHANNELS (Model 710)
- SMALL SIZE



AC/DC CONVERTERS

Model	Dual ±15VDC Supplies						5VDC Logic Supplies			
	PC Board Mount			Chassis Mount			PC Board Mount			
	550	551	552	553	554	556	558	560	561	562
RATED OUTPUT Voltage (nom) Current (max)	±15V ±25mA	±15V ±50mA	±15V ±100mA	±15V ±200mA	±15V ±350mA	±15V ±200mA	±15V ±500mA	5V ⁽¹⁾ 250mA	5V ⁽¹⁾⁽²⁾ 500mA	5V ⁽¹⁾⁽²⁾ 1000mA
RATED INPUT Voltage Options ⁽¹⁾	105 - 125VAC, 50 - 400Hz E, F, H					105 - 125VAC 50 - 400Hz E, F, H		105 - 125VAC, 50 - 400Hz E, F, H		
REGULATION No load to full load (max) Over rated line voltage (max)	±0.1% ±0.05%	±0.05% ±0.05%	±0.05% ±0.05%	±0.05% ±0.05%	±0.02% ±0.02%	±0.05% ±0.05%	±0.05% ±0.05%	±0.1% ±0.05%	±0.1% ±0.05%	±0.1% ±0.05%
OUTPUT RIPPLE AND NOISE At full load, rms (max)	2mV	0.5mV	0.5mV	0.5mV	0.5mV	1mV	1mV	1mV	1mV	1mV

DC/DC CONVERTERS ±15VDC Output

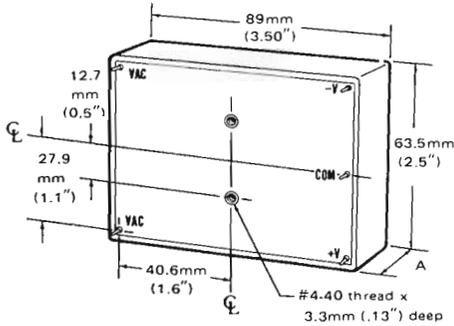
MODEL	Low Profile	Isolated ⁽¹⁾	
	546	700; 700U ⁽¹⁾	710 ⁽²⁾
RATED INPUT Voltage Current, Quiescent Current, full load	4.5VDC to 5.5VDC 400mA, max 1.8A, max	10VDC to 18VDC 20mA at ±3mA load 89mA max at ±30mA load	10VDC to 18VDC 40mA at total output of 24mA 100mA at total output of 76mA
RATED OUTPUT Voltage (no load) Current Short circuit current	15V 120mA, max 180mA, max	±V _{IN} w/ 1V tolerance total 60mA, max 120mA, max	4 sets of ±V _{IN} w/ 1V tolerance total 76mA max; any single output -60mA, max 120mA, max
REGULATION Line at full load Load, zero to full load	0.1%, max 0.02% typ, 0.1% max	— 35mV/mA	— 75mV/mA
OUTPUT VOLTAGE TEMP. COEFFICIENT	±3mV/°C	—	—
OUTPUT RIPPLE	10mV peak, typ; 20mV peak, max; 0.8mV, rms max	±15mV peak at ±3mA load; ±80mV peak, max, at ±30mA load	±25mV peak at ±3mA load; ±80mV peak; max, at ±9.5mA load
INPUT-OUTPUT ISOLATION Test voltage, 5sec at 60Hz Voltage, continuous, derated Impedance Leakage current at 240V, 60Hz, tested	300VDC 10 ¹⁰ Ω 50pF	4200Vp/5000Vp 1500Vp/2000Vp 10 ¹⁰ Ω 5pF/10 ¹⁰ Ω 3pF 1μA, max	2200V, rms 600V, rms, 1000Vp 10 ¹⁰ Ω 8pF 1μA, max
TEMPERATURE RANGE Operating Storage	0°C to 71°C -55°C to +100°C	-25°C to +85°C -55°C to +125°C	-25°C to +85°C -55°C to +110°C

- The output may be connected as +5V or -5V.
- These 5V supplies have over-voltage protection which limits the output voltage to 7V (max) in a fault condition.
- International input voltage rating available. Specify: E option - 205VAC to 240VAC, 50Hz to 400Hz.
F option - 90VAC to 110VAC, 50Hz to 400Hz.
H option - 220VAC to 260VAC, 50Hz to 400Hz.
- Models 700 and 700M have separate internal input and output shields. Models 700U and 700UM have no internal shields. Model 700M and 700UM are similar to Models 700, 700U but, in addition, they are 100% screened to patient connected circuit requirements for the leakage current (par. 27.5) and dielectric withstand voltage (par. 31.11) of UL544. Additional \$2.00/unit charge for 700M or 700UM. See Product Data Sheet for complete specifications.
- Model 710 provides 4 channels (sets) of isolated outputs. See Product Data Sheet for complete specifications.
- For newer designs, the models 722 and 724 (hybrid isolated DC/DC converters) which are smaller in size and better in performance are recommended. Please refer to models 722 and 724 product data sheets.

The information in this publication has been carefully checked and is believed to be reliable; however, no responsibility is assumed for possible inaccuracies or omissions. Prices and specifications are subject to change without notice. No patent rights are granted to any of the circuits described herein.

PACKAGE DRAWINGS

DRAWING NO. 1



Pin Diameter 1.02mm (0.04")

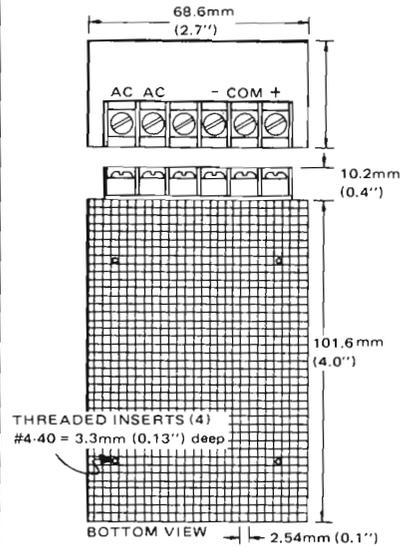
* No Connection for Models 560, 561, 562.

For Models 550, 551, 560 - A = 22.2mm (0.875")
Weight: 340 grams (12 oz)

For Models 552, 553, 561, 562 - A = 32mm (1.25")
Weight: 425 grams (15 oz)

For Model 554 - A = 4.1cm (1.62")
Weight: 750 grams (26 oz)

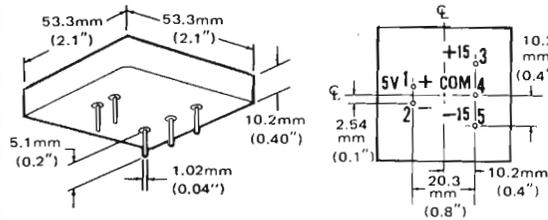
DRAWING NO. 2



For Model 556 - A = 36.6mm (1.44")

For Model 558 - A = 50.8mm (2.00")

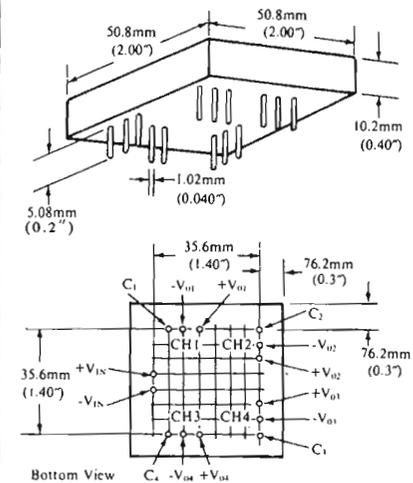
DRAWING NO. 3 Model 546



WEIGHT - 50 grams (1.7 oz)

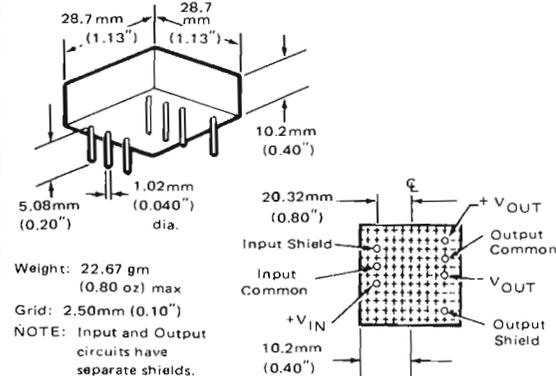
BOTTOM VIEW

DRAWING NO. 5 Model 710



Weight: 25 grams (0.9 oz.)
Grid: 5.08mm (.20")

DRAWING NO. 4 Model 700



Weight: 22.67 gm (0.80 oz) max

Grid: 2.50mm (0.10")

NOTE: Input and Output circuits have separate shields.