

# 6550A Series Single-Output, 500 W DC Power Supplies

Data Sheet

Speed and accuracy for test optimization



- Front panel and analog control of output voltage and current
- Fast, low-noise outputs
- Fan-speed control to minimize acoustic noise
- Protection features to ensure DUT safety

This reliable series of 500 W DC power supplies can be controlled either from the front panel or via an analog programming voltage. When used in a test system, the fast up and down programming helps decrease test time. Quickly reacting protection features, including fast crowbar, CV/CC mode crossover and over-voltage protection help protect your valuable assemblies from damage. The linear topology produces very low ripple and noise, which allows you to make extremely accurate measurements of the devices which you are testing.

Lab bench use is enhanced by the fan speed control, which helps to minimize acoustic noise.



**Agilent Technologies**

## Specifications

<b>Specifications</b> <i>(at 0 ° to 55 °C unless otherwise specified)</i>	<b>6551A</b>	<b>6552A</b>	<b>6553A</b>	<b>6554A</b>	<b>6555A</b>
<b>Number of outputs</b>	1	1	1	1	1
<b>GPIB</b>	No	No	No	No	No
<b>Output ratings</b>					
Output voltage	0 to 8 V	0 to 20 V	0 to 35 V	0 to 60 V	0 to 120 V
Output current (40 °C)	0 to 50 A	0 to 25 A	0 to 15 A	0 to 9 A	0 to 4 A
Maximum current (50 °C/55 °C)	45 A/42.5 A	22.5 A/21.3 A	13.5 A/12.8 A	8.1 A/7.7 A	3.6 A/3.4 A
<b>Programming accuracy</b> (at 25 °C ± 5 °C)					
Voltage           0.06% +	5 mV	10 mV	15 mV	26 mV	51 mV
Current         0.15% +	60 mA	25 mA	13 mA	8 mA	4 mA
<b>Ripple and noise</b> from 20 Hz to 20 MHz					
Voltage                   rms	300 µV	300 µV	400 µV	500 µV	700 µV
peak-to-peak	3 mV	3 mV	4 mV	5 mV	7 mV
Current                   rms	25 mA	10 mA	5 mA	3 mA	2 mA
<b>Load regulation</b>					
Voltage	1 mV	2 mV	3 mV	4 mV	5 mV
Current	2 mA	1 mA	0.5 mA	0.5 mA	0.5 mA
<b>Line regulation</b>					
Voltage	0.5 mV	0.5 mV	1 mV	1 mV	2 mV
Current	2 mA	1 mA	0.75 mA	0.5 mA	0.5 mA

### Transient response time

Less than 100 µs for the output voltage to recover to its previous level (within 0.1% of the voltage rating of the supply or 20 mV, whichever is greater) following any step change in load current of up to 50% of the output current rating of the supply

<b>Supplemental characteristics</b> <i>(Non-warranted characteristics determined by design and useful in applying the product)</i>	<b>6551A</b>	<b>6552A</b>	<b>6553A</b>	<b>6554A</b>	<b>6555A</b>
<b>Average resolution</b>					
Voltage	2 mV	5 mV	10 mV	15 mV	30 mV
Current	15 mA	7 mA	4 mA	2.5 mA	1.25 mA
OVP	12 mV	30 mV	54 mV	93 mV	190 mV
<b>OVP accuracy</b>	160 mV	400 mV	700 mV	1.2 V	2.4 V

## Specifications, continued

<b>Specifications</b> <i>(at 0 ° to 55 °C unless otherwise specified)</i>	<b>6551A-J01</b> Special order option	<b>6551A-J03</b> Special order option	<b>6553A-J04</b> Special order option	<b>6553A-J17</b> Special order option
<b>Number of outputs</b>	1	1	1	1
<b> GPIB </b>	No	No	No	No
<b>Output ratings</b>				
Output voltage	10 V	6 V	40 V	30 V
Output current (40 °C)	50 A	60 A	12.5 A	17.5 A
Maximum current (50 °C/55 °C)	45 A/542.5 A	54 A/51 A	11.25 A/10.6 A	15.75 A/14.87 A
<b>Programming accuracy</b> (at 25 °C ± 5 °C)				
Voltage                         0.06% +	6 mV	5 mV	17.5 mV	15 mV
Current                         0.15% +	60 mA	75 mA	13 mA	16 mA
<b>Ripple and noise</b> from 20 Hz to 20 MHz				
Voltage   rms	300 μV	300 μV	1.6 mV	400 μV
peak-to-peak	3 mV	3 mV	5 mV	4 mV
Current   rms	25 mA	30 mA	5 mA	6 mA
<b>Load regulation</b>				
Voltage	1 mV	1 mV	3.5 mV	3 mV
Current	2 mA	6.5 mA	1 mA	0.5 mA
<b>Line regulation</b>				
Voltage	0.5 mV	0.5 mV	1 mV	1 mV
Current	2 mA	2 mA	0.75 mA	0.75 mA
<b>Transient response time</b>	Less than 100 μs for the output voltage to recover to its previous level (within 0.1% of the voltage rating of the supply or 20 mV, whichever is greater) following any step change in load current of up to 50% of the output current rating of the supply			
<b>Supplemental characteristics</b> <i>(Non-warranted characteristics determined by design and useful in applying the product)</i>	<b>6551A-J01</b> Special order option	<b>6551A-J03</b> Special order option	<b>6553A-J04</b> Special order option	<b>6553A-J17</b> Special order option
<b>Average resolution</b>				
Voltage	2.5 mV	2 mV	12 mV	10 mV
Current	15 mA	18 mA	4 mA	5 mA
OVP	16 mV	12 mV	65 mV	54 mV
<b>OVP accuracy</b>	200 mV	160 mV	750 mV	700 mV

## Specifications, continued

<b>Specifications</b> <i>(at 0 ° to 55 °C unless otherwise specified)</i>	<b>6554A-J04</b> Special order option	<b>6554A-J05</b> Special order option	<b>6554A-J12</b> Special order option	<b>6555A-J10</b> Special order option
<b>Number of outputs</b>	1	1	1	1
<b>GPIB</b>	No	No	No	No
<b>Output ratings</b>				
Output voltage	70 V	50 V	80 V	156 V
Output current (40 °C)	7.5 V	10 A	6 A	3 A
Maximum current (50 °C/55 °C)	6.75 A/6.37 A	9 A/8.5 A	5.4 A/5.1 A	2.7 A/2.55 A
<b>Programming accuracy</b> (at 25 °C ± 5 °C)				
Voltage                   0.06% +	38 mV	26 mV	35 mV	71 mV
Current                 0.15% +	7 mA	9 mA	7 mA	4 mA
<b>Ripple and noise</b> from 20 Hz to 20 MHz				
Voltage                   rms	600 µV	500 µV	700 µV	900 µV
peak-to-peak	6 mV	5 mV	5 mV	8 mV
Current                   rms	5 mA	4 mA	3 mA	3 mA
<b>Load regulation</b>				
Voltage	4 mV	4 mV	4 mV	7 mV
Current	0.5 mA	0.5 mA	0.5 mA	1 mA
<b>Line regulation</b>				
Voltage	1 mV	1 mV	4.5 mV	2 mV
Current	0.5 mA	0.5 mA	0.5 mA	1 mA
<b>Transient response time</b>	Less than 100 µs for the output voltage to recover to its previous level (within 0.1% of the voltage rating of the supply or 20 mV, whichever is greater) following any step change in load current of up to 50% of rated current			
<b>Supplemental characteristics</b> <i>(Non-warranted characteristics determined by design and useful in applying the product)</i>	<b>6554A-J04</b> Special order option	<b>6554A-J05</b> Special order option	<b>6554A-J12</b> Special order option	<b>6555A-J10</b> Special order option
<b>Average resolution</b>				
Voltage	17.5 mV	15 mV	20 mV	39.5 mV
Current	1.9 mA	2.75 mA	1.7 mA	8 mA
OVP	110 mV	93 mV	130 mV	250 mV
<b>OVP accuracy</b>	1.4 V	1.2 V	1.6 V	3.3 V

**Supplemental characteristics for all model numbers**

**DC floating voltage:** Output terminals can be floated up to  $\pm 240$  VDC from chassis ground

**Remote sensing:** Up to half the rated output voltage can be dropped in each load lead. The drop in the load leads subtracts from the voltage available for the load.

**Output programming response time:** The rise and fall time (10/90% and 90/10%) of the output voltage is less than 15 ms. The output voltage change settles within 1 LSB (0.025% x rated voltage) of final value in less than 60 ms.

**Down programming:** An active down programmer sinks approximately 20% of the rated output current

**Modulation:** (Analog programming of output voltage and current)

**Input signal:** 0 to  $-5$  V

**Input impedance:** 10 k $\Omega$  nominal

**AC input:**  
(AC input frequency 47 to 63 Hz)

<b>Voltage</b>	100 VAC	120 VAC	220 VAC	240 VAC
<b>Current</b>	12 A	10 A	5.7 A	5.3 A

**Input power:** 1,380 VA, 1,100 W at full load; 120 W at no load

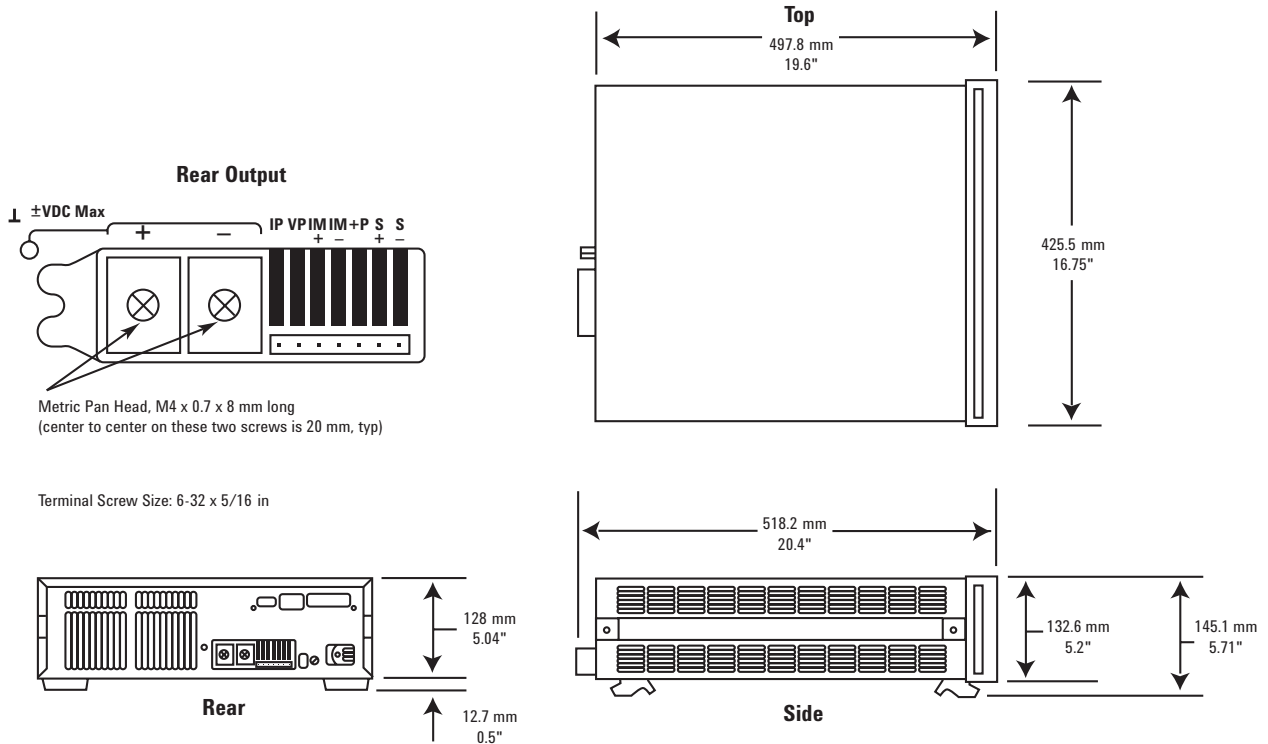
**Regulatory compliance:** Listed to UL 1244; certified to CSA556B; conforms to IEC 61010-1

**Size:**  
425.5 mm W x 132.6 mm H x 497.8 mm D  
(16.75 in x 5.22 in x 19.6 in)

**Weight:** Net, 25 kg (54 lb); shipping, 28 kg (61 lb)

**Warranty:** One year

**Agilent models:** 6551A, 6552A, 6553A, 6554A, 6555A



## Ordering information

**Opt 100** 87 to 106 VAC, 47 to 63 Hz  
**Opt 120** 104 to 127 VAC, 47 to 63 Hz  
**Opt 220** 191 to 233 VAC, 47 to 63 Hz  
**Opt 240** 209 to 250 VAC, 47 to 63 Hz

**Opt 0L1** Full documentation on CD-ROM and printed user's guide. CD-ROM includes user's guide, service manual, and quick start guide  
**Opt 0B3** Printed service manual

## Accessories

**1CM003A\*** Rack mount flange kit 132.6 mm H (3U) – two flange brackets  
**1CP002A\*** Rack mount flange and handle kit 132.6 mm H (3U) – two brackets and front handles  
**E3663AC** Support rails for Agilent rack cabinets  
**p/n 1494-0059** Accessory slide kit

## Application notes

*10 Practical Tips You Need to Know About Your Power Products*, 5965-8239E

*Understanding Linear Power Supply Operation (AN1554)*, 5989-2291EN

*Agilent DC Power Supplies for Base Station Testing*, 5988-2386EN

\* Support rails required



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Product specifications and descriptions in this document subject to change without notice.

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