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Keysight Technologies

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

Speed and accuracy for test optimization

Data Sheet



KEYSIGHT TECHNOLOGIES

Introduction

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.

Specifications

Specifications *(at 0 to 55°C unless otherwise specified)*		**6551A**	**6552A**	**6553A**	**6554A**	**6555A**
Number of outputs		1	1	1	1	1
GPIB		No	No	No	No	No
Output ratings						
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
Programming accuracy (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
Ripple and noise 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
Load regulation						
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
Line regulation						
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				

Supplemental characteristics *(Non-warranted characteristics determined by design and useful in applying the product)*	**6551A**	**6552A**	**6553A**	**6554A**	**6555A**
Average resolution					
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
OVP accuracy	160 mV	400 mV	700 mV	1.2 V	2.4 V

Specifications, *continued*

Specifications *(at 0 to 55°C unless otherwise specified)*		**6551A-J01** Special order option	**6551A-J03** Special order option	**6553A-J04** Special order option	**6553A-J17** Special order option
Number of outputs		1	1	1	1
GPIB		No	No	No	No
Output ratings					
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
Programming accuracy (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
Ripple and noise 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
Load regulation					
Voltage		1 mV	1 mV	3.5 mV	3 mV
Current		2 mA	6.5 mA	1 mA	0.5 mA
Line regulation					
Voltage		0.5 mV	0.5 mV	1 mV	1 mV
Current		2 mA	2 mA	0.75 mA	0.75 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			

Supplemental characteristics *(Non-warranted characteristics determined by design and useful in applying the product)*	**6551A-J01** Special order option	**6551A-J03** Special order option	**6553A-J04** Special order option	**6553A-J17** Special order option
Average resolution				
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
OVP accuracy	200 mV	160 mV	750 mV	700 mV

Specifications, *continued*

Specifications *(at 0 to 55°C unless otherwise specified)*		**6554A-J04** Special order option	**6554A-J05** Special order option	**6554A-J12** Special order option	**6555A-J10** Special order option
Number of outputs		1	1	1	1
GPIB		No	No	No	No
Output ratings					
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
Programming accuracy (at 25 ±5°C)					
Voltage	0.06% +	38 mV	26 mV	35 mV	71 mV
Current	0.15% +	7 mA	9 mA	7 mA	4 mA
Ripple and noise 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
Load regulation					
Voltage		4 mV	4 mV	4 mV	7 mV
Current		0.5 mA	0.5 mA	0.5 mA	1 mA
Line regulation					
Voltage		1 mV	1 mV	4.5 mV	2 mV
Current		0.5 mA	0.5 mA	0.5 mA	1 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 rated current			

Supplemental characteristics *(Non-warranted characteristics determined by design and useful in applying the product)*	**6554A-J04** Special order option	**6554A-J05** Special order option	**6554A-J12** Special order option	**6555A-J10** Special order option
Average resolution				
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
OVP accuracy	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 ±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 kΩ nominal

AC input:

(AC input frequency 47 to 63 Hz)

Voltage	100 VAC	120 VAC	220 VAC	240 VAC
Current	12 A	10 A	5.7 A	5.3 A

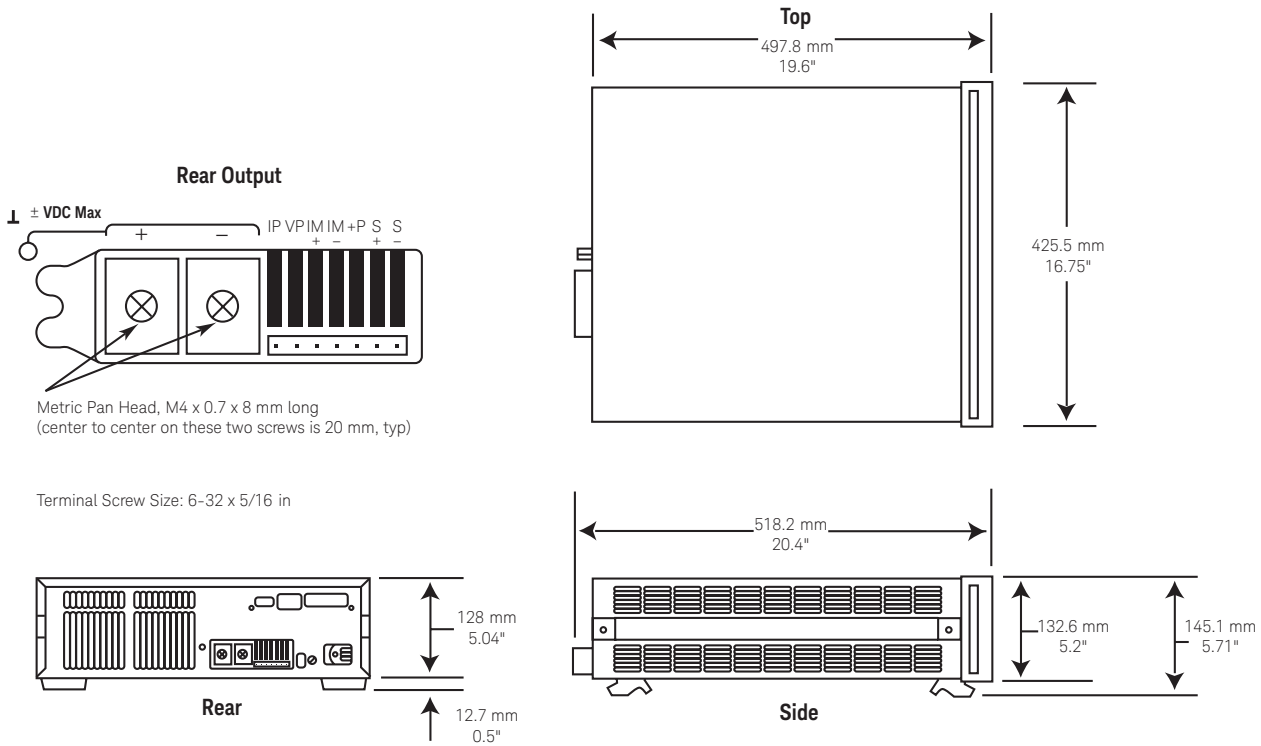
Input power: 1,380 VA, 1,100 W at full load; 120 W at no load

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)

Keysight Technologies 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 Keysight 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, 5989-2291EN

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

* Support rails required



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