

Table1-1PerformanceSpecifications

AgilentTechnologiesModel		6010A	6011A
DCOutput: Voltage,currentandpowerspansindicaterange overwhichoutputmaybevariedusingfrontpanelcontrols.	Volts	0-200V	0-20V
	Amps	0-17A	0-120A
	MaximumPower	1000-1200W	840-1072W
LoadEffect(LoadRegulation): Voltageloadaffectisgivenforload currentchangeequaltothecurrentratingofthesupply.Currentload effectisgivenforloadvoltagechangeequaltothevoltage ratingofthe supply.	Voltage	0.01%+5mV	0.01%+3mV
	Current	0.01%+10mA	0.01%+15mA
SourceEffect(LineRegulation): Givenforachangewithintherated linevoltageforanyoutputwithintheratedoutputvoltage,currentand powerofthesupply	Voltage	0.01%+5mV	0.01%+2mV
	Current	0.01%+5mA	0.01%+25mA
PARD(RippleandNoise): Measuredatanylinevoltageandunderany loadconditionwithrating(rms10Hzto10Mhz/p-p10Hzto20MHz)	Voltage	22mV/50mV ²	8mV/50mV
	Current	15mA/ ^{1,4}	120mA/ ^{1,4}
LoadEffectTransientRecovery: Maximumtimerequiredforoutput voltagetorecoverwithintheprescribedbandaroundthenominaloutput voltagefollowingastepchange(10%or50%)inoutputcurrentwhile operatingintheconstantvoltage mode	Time10%/50%	2ms/3ms	2ms/3ms
	Level10%/50%	150mV/500mV	100mV/300mV

Table1-2.SupplementalCharacteristics

AgilentTechnologiesModel		6010A	6011A	
Programming: Givenforcontrolofthe outputovertheGP-IBorwithfrontpanelcontrols	VoltageResolution	70mV	5mV	
	CurrentResolution	7mA	40mA	
FrontPanelVoltmeter:	Range	20V,200V	20V,200V	
	Resolution	100mV,1V	10mV,100mV	
	Accuracy	0.65%+3.5counts, 0.65%+3.5counts	0.6%+2counts, 0.8%+2counts	
	T.C.(per/ °C)	80ppm+1mV, 80ppm+1mV	80ppm+1mV, 100ppm+1mV	
FrontPanelAmmeter:	Range	20A	200A	
	Resolution	10mA	100mA	
	Accuracy	0.6%+4counts	0.7%+300mA ⁴	
	T.C.(per/ °C)	100ppm+2mA	100ppm+3mA	
DisplayOVP:	Range	2000V	200V	
	Resolution	1V	100mV	
	Accuracy	2.5%+1.1V	2.5%+625mV	
	T.C.(per/ °C)	200ppm+3mV	150ppm+3mV	
MaximumACInputCurrent: +6%-13%(48-63)Hz	100Vac(Opt.100)	24	24	
	120Vac(Std.)	24A	24A	
	220Vac(Opt.220)	15A	15A	
	240Vac(Opt.240)	14A	14A	
Typicalinputpoweratratedoutputpower: (see pointP ₂ onFigure1-1)		1435W	1375W	
TemperatureCoefficient: OutputchangeperdegreeCelsiuschange inambientfollowing30minutewarm-up.	Voltage	80ppm+15mV	100ppm+2mV	
	Current	100ppm+4mA	180ppm+15mA	
Drift(Stability): Changeinoutput(dcto201 Hz)over8-hourinterval underconstantline,load,andambientfollowing30-minutewarm-up	Voltage	0.03%+17mV	0.03%+3mV	
	Current	0.03%+5mA	0.1%+25mA	
ProgrammingResponseTime : The maximumtimerequired tochange from zero volt to full scale voltage or from full scale voltage to 2 volts (6 volts for Agilent 6028A and 5 volts for Agilent 6015A) and settle within the specified band. Full load is defined as the resistance equal to V _p /I _p 1. Light load is as specified	Settling Band	300mV	30mV	
	Up	Full Load	300ms(0.4Ω)	300ms(40 Ω)
OvervoltageProtection : Trip voltage adjustable via front panel control using the Display OVP function	No Load	300ms	300ms	
	Down	Full Load	500ms(0.4Ω)	600ms
MonitoringOutputAccuracy: 0to5V signals from rear panel terminals that indicate 0to full scale output voltage and current. Output impedance=10K Ω.	Light Load	3.5s(open Ω)	1.5s(50 Ω)	
	Range	0-214V	0-22V	
	Resolution	600mV	100mV	
RemoteAnalogProgramming Accuracy	Accuracy	0.3%+1.25V	0.25%+625mV	
	Voltage	0.3%+60mV	0.25%+2mV	
ReverseVoltageProtection: Maximum continuous current caused by reverse voltage impressed across the output terminals.	Current	0.36%+10mA	0.3%+35mA	
	Resistance(0to4K)	Voltage	0.5%+35mV	0.5%+215mV
		Current	1%+800mA ³	1%+170mA
	Voltage(0to5V)	Voltage	0.25%+35mA	0.3%+215mV
Current		0.4%+800mA ³	0.36%+170mA	
Ac power on	Ac power on	17A	50A	
	Ac power off	7A	20A	

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6012B	6015A	6023A	6028A
0-60V	0-500V	0-20V	0-60V
0-50A	0-5A	0-30A	0-10A
1000-1200W	1000-1050W	200-242W	200-242W
0.01%+5mV	0.01%+40mV	0.01%+2mV	0.01%+3mV
0.01%+10mA	0.03%+34mA	0.01%+9mA	0.01%+5mA
0.01%+3mV	0.01%+13mV	0.01%+1mV	0.01%+2mV
0.01%+10mA	0.03%+17mA	0.01%+6mA	0.01%+2mA
0.005%+5mV/40mV ⁵	50mV/160mV	3mV/30mV	3mV/30mV
25mA/ ^{1,4}	50mA/ ^{1,4}	30mA/ ^{1,4,7}	5mA/ ^{1,4}
2ms/3ms	5ms/ ⁵	1ms/2ms	1ms/ ⁵
100mV/300mV	200mV/ ⁶	50mV/150mV	75mV/ ⁶

NOTES.

- 1.P-PPARDnotspecified
- 2.Initially,foreachdegree below20°Ctheripple increases2.4mV/ °C. Afterloadisapplied for15minutes,theincrease becomes1.4mV/ °C.
- 3.Afterafive-minutewait.
- 4.CCPARDisspecifiedfor a1.2m(4feet)lengthload lead
- 5.P-P75mV(20Hzto 100MHz
- 6.50%changenotspecified
7. Typicalcommonmodecurrent 1mARMS/40mAP-P

6012B	6015A	6023A	6028A
20mV	15mV	5mV	15mV
20mA	2.5mA	10mA	10mA
20V,200V	2000V	20V,200V	20V,200V
10mV,100mV	1V	10mV,100mV	10mV,100mV
0.65%+3.5counts, 0.65%+3.5counts	1%+3.5counts	0.6%+20mV,0.6+ 200mV	0.6%+20mV,0.6+ 200mV
80ppm+1mV, 80ppm+1mV	100ppm+30mV	75ppm+0.25mV	75ppm+0.25mV
200A	20A	200A	200A
100mA	10mA	100mA	100mA
0.6%+4counts	1%+4counts	0.6%+200mA	0.6%+70mA
100ppm+2mA	100ppm+7.5mA	100ppm+1.5mA	100ppm+1.5mA
200V	2000V	200V	200V
100mV	1V	100mV	100mV
2.5%+550mV	3%+1count	2.5%+250mV	2.5%+250mV
200ppm+3mV	100ppm+30mV	200ppm+1mV	200ppm+1mV
24	24	6.0A	6.0A
24A	24A	6.5A	6.5A
15A	15A	3.8A	3.8A
14A	14A	3.6A	3.6A
1450W	1256W	340W	325W
80ppm+4mV	100ppm+30mV	70ppm+0.6mV	70ppm+0.6mV
100ppm+8mA	100ppm+7mA	100ppm+2mA	100ppm+2mA
0.03%+5mV	0.03%+40mV	0.02%+1mV	0.02%+2mV
0.03%+10mA	0.03%+17mA	0.03%+10mA	0.03%+10mA
90mV/200mV	750mV	5mV	15mV
300ms/120ms(3.4 Ω)	350ms(250 Ω)	100ms(2 Ω)	150ms(2 Ω)
300ms/120ms	250ms	100ms	120ms
2s/400ms(3.4 Ω)	600ms(250 Ω)	200ms(2 Ω)	150ms(2 Ω)
3s/35s(100 Ω)	7s(100 Ω)	500ms(50Ω)	750ms(50 Ω)
0-64V	0-535V	0-23V	0-67V
200mV	1.5V	100mV	100mV
0.25%+550mV	0.3%+1.25V	0.25%+250mV	0.25%+250mV
0.3%+15mV	1%+150mV	0.25%+2mV	0.25%+2mV
0.36%+20mA	0.5%+100mA	0.3%+15mA	0.3%+15mA
0.5%+70mV	1%+600mV	0.5%+12mV	0.5%+36mV
1%+500mA	2%+425mA	1%+110mA	1%+40mA
0.3%+70mV	0.8%+600mV	0.25%+12mV	0.25%+36mV
0.36%+500mA	0.7%+425mA	0.3%+110mA	0.3%+40mA
50A	5A	30A	10A
20A	5A	15A	5A

Table 1-2 Supplemental Characteristics (continued)

DC Floating Voltage: Either output terminal may be floated up to the following voltage (including the output voltage) from earthground:

±240Vdcon Models 6011A, 6012B, 6023A, and 6028A

±550Vdcon Models 6010A and 6015A

Exceeding these voltages can result in damage to the equipment.

Efficiency (typical) : 80% on maximum output boundary

Remote Sensing: The power supply maintains specifications at the load with up to 0.5 Volt per load lead with sense wire resistance less than 0.2 Ω per lead and sense lead length less than 5 metres. Operation with up to 2 volts per load lead is possible with some degradation of the load effect specification.

Multiple Operations : Up to two similar units may be connected in series, parallel or auto-parallel, to provide increased output capabilities. Mixing supplies with dissimilar output capabilities is not recommended because under certain conditions, the lower output supply may be stressed beyond its maximum voltage and/or current capabilities by the higher output supply.

Reactive Loads: Stable with inductive loads up to 100mH and capacitive loads up to 10F. CC compensation that provides up to 10H (with increased settling times) is available on special order.

Voltage Overshoot (typical) : The output voltage will overshoot its steady state value by less than 250mV (1V on Model 6015A) due to any of the following conditions:

1. Up programming
2. Crossover from CC to CV mode
3. A step change of up to 5A
4. AC power on

Temperature Rating(°C):

- Operating is 0-50 (Agilent 6010A/6011A/6012B/6015A)
0-55 (Agilent 6023A/6028A)
- Storage is -40+75 (all models)

Weight kg.(Lbs.)

Model	Agilent6010A	Agilent6011A	Agilent6012B	Agilent6015A	Agilent6023A	Agilent6028A
Net	15.9(35)	16.8(37)	15.9(35)	16.3(36)	8.6(19)	8.6(19)
Shipping	21.3(47)	22.3(49)	21.4(47)	21.7(48)	10.5(23)	10.5(23)

Dimensions: See Figure 2-1.

Certification :

The unit is designed to comply with these requirements:

- IEC348-Safety Requirements for Electronic Measuring Apparatus.
- CSA Electrical Bulletin 556B-Electronic Instruments and Scientific Apparatus for Special Use and Applications.
- VDE0871.6.78 Level B-RFISuppression of Radio Frequency Equipment for Industrial, Scientific, and Medical (ISM) and similar purposes.
- VDE0411-Electronic Measuring Instruments and Automatic Controls.
- UL1244-Electrical and Electronic Measuring & Testing Equipment.
- ANSIC39.5 Part 0 Draft 8-Electrical Testing, Measurement, and Control Equipment.
- Agilent Class B-Environmental Specifications

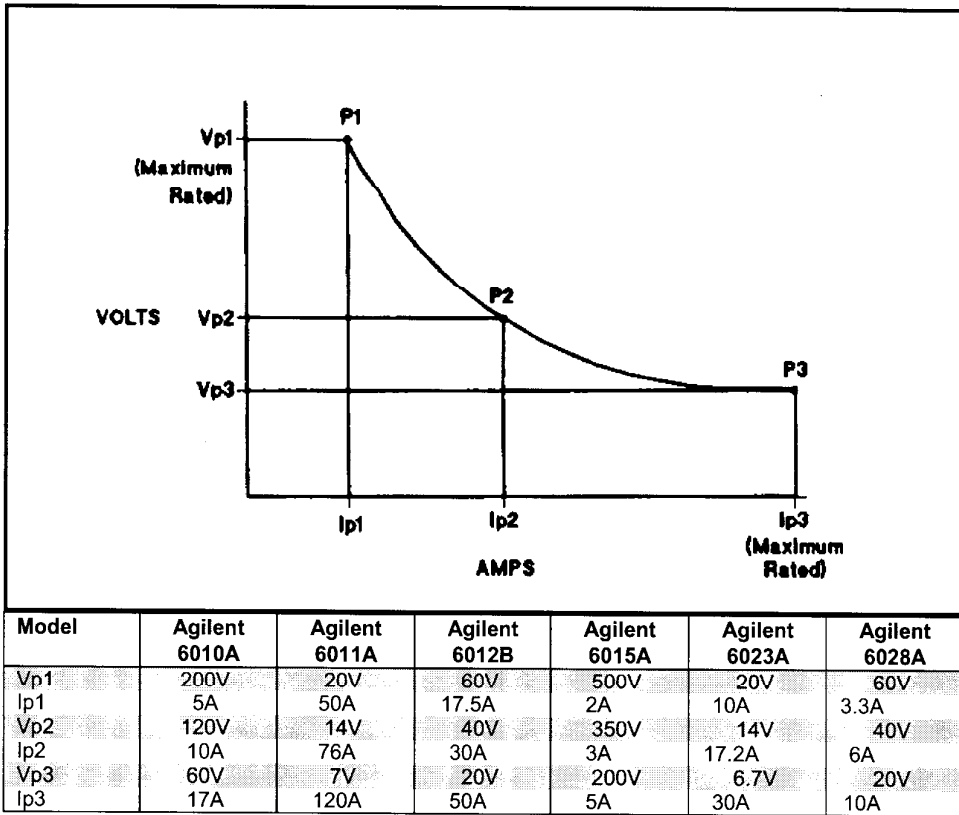
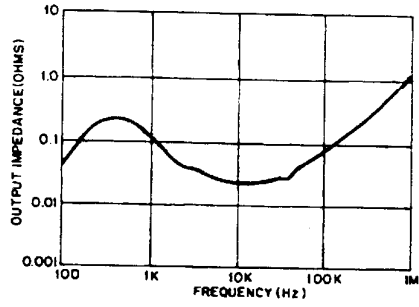
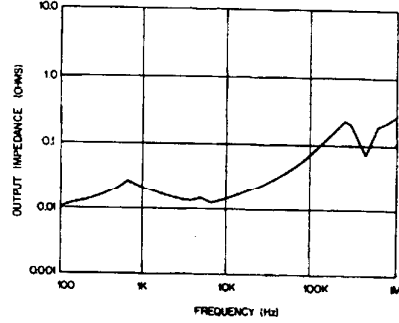


Figure1-1.OutputCharacteristicCurve

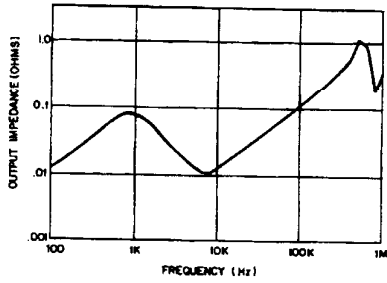
Output Impedance (typical)



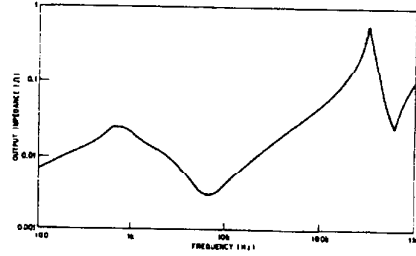
AGILENT 6010A



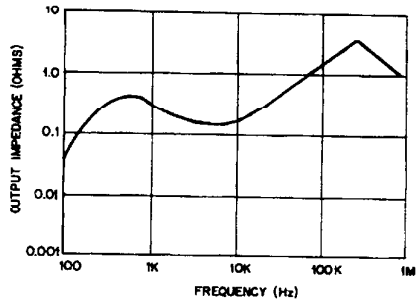
AGILENT 6011A



AGILENT 6012B



AGILENT 6023A and AGILENT 6028A



AGILENT 6015A

Figure1-2.OutputImpedance