KEITHLEY

2302

The Keithley 2302 is a single-channel high-speed battery simulator designed specifically for testing portable, battery-operated devices such as cellular phones, transceivers, and medical electronics. It mimics the transient response and variable output resistance of a real battery, enabling precise assessment of device behavior under realistic operating conditions.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488)
Display	Vacuum Fluorescent Display (VFD), 2-line
Warm-up Time	1 hour
Setup Storage	5 user-programmable locations plus factory default

Physical

Power Supply	100 V / 120 V / 220 V / 240 V AC ±10%, 50 Hz / 60 Hz, 150 VA max
Operating Temperature	0°C to 50°C °C
Dimensions (W×H×D)	213 mm × 89 mm × 411 mm mm
Weight	3.2 kg kg

Simulation & Output Specifications

Maximum Voltage Output	15 V DC
Minimum Voltage Output	0 V DC
Voltage Programming Resolution	1 mV
Voltage Programming Accuracy	±(0.05% + 3 mV)
Maximum Current Output	3 A DC continuous (5 A peak for pulse loads)
Maximum Current Sinking	3 A DC continuous
Output Impedance Range	0 Ω to 1 Ω
Output Impedance Resolution	10 mΩ
Transient Recovery Time	< 40 µs to within 100 mV of prior level

Measurement & Readback

Voltage Readback Resolution	1 mV
Voltage Readback Accuracy	±(0.05% + 3 mV)
Current Readback Ranges	5 A, 5 mA
Dynamic Current Measurement Modes	Peak, average, and background current
Pulse Current Measurement Integration Time Range	33.3 µs to 833 ms

System Protection & Safety

Isolation Voltage (Output to Chassis)	150 V DC

Connectivity & Control Interfaces

Remote Sense Terminals	Yes (4-wire sense)
Remote Sense Maximum Lead Drop	1 V per lead
SCPI Command Set Compatibility	Yes

Physical & Interface Characteristics

Form Factor	Benchtop or half-rack (2U height)
Cooling Mechanism	Internal fan forced-air cooling

Environmental & Compliance

Storage Temperature Range	-20°C to 70°C
Operating Humidity Range	0% to 70% RH non-condensing (up to 35°C)
Safety Standards	Conforms to European Union Directive 73/23/EEC (EN 61010-1)
EMC Standards	Conforms to European Union Directive 89/336/EEC (EN 61326-1)

Performance

Voltage Line Regulation	0.01% + 2 mV
Voltage Load Regulation	0.01% + 2 mV
Voltage Ripple and Noise (RMS)	<1 mV RMS
Voltage Ripple and Noise (Peak-to-Peak)	<3 mV (20 Hz to 20 MHz)
Current Ripple and Noise (RMS)	<3 mA RMS
Current Readback Accuracy (5 A Range)	±(0.2% + 200 µA)
Current Readback Accuracy (5 mA Range)	±(0.2% + 1 µA)

Current Output

Current Limit Range	10 mA to 5 A
Current Limit Programming Accuracy	±(0.2% + 5 mA)
Current Limit Programming Resolution	1.25 mA

Analog Outputs

Current Monitor Output Scaling (5 A Range)	0 to 3 V (0.6 V/A)
Current Monitor Output Scaling (5 mA Range)	0 to 3 V (600 V/A)

Interfaces

Trigger Link Interface	8-pin micro-DIN connector

Environmental

Maximum Operating Altitude	2000 m

Output Specifications

Number of Channels	1

Digital Voltmeter (DVM)

DVM Input Voltage Range	-5 V to +30 V DC
DVM Input Impedance	2 GΩ typical
DVM Readback Accuracy	±(0.05% + 3 mV)
DVM Readback Resolution	1 mV

Power Specifications

Mains Frequency	50 Hz / 60 Hz (automatically sensed)
Power Consumption	150 VA maximum

TECHNOLOGY

Linear Battery Simulation

APPLICATIONS

Battery simulation and testing for low-power wireless and portable devices

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.