

UNI-T®

Instruments.uni-trend.com



Datasheet

UDP6900 Series Digital Control Power Supply

1. Characteristics

- 4.3" TFT true color LCD, simultaneous display of the set voltage and current, output voltage and current
- High accuracy and resolution
- Programmable output of the voltage and current
- Output time control can be set (0.1–99999.9 seconds)
- Low ripple and noise
- Voltage and current can be adjusted by the numeric keyboard and the encoder knob
- Intelligent fan control saves energy
- Remote sense to avoid voltage drops due to long wires
- Supports output voltage and current slope setting
- RS232 & RS485 communication interface; Supports SCPI, Multi-SCPI, and Modbus RTU protocols
- External analog control and external digital control
- Built-in 4 ½ digit voltmeter for outside measurement
- Multiple protection: OVP (Over Voltage Protection) and OCP (Over Current Protection)
- Supports 18x8 group memory for saving and loading
- High power factor with low harmonic interference to the power grid. Ideal for applications with high power quality requirements.
- High efficiency, low heat
- Rack mountable with both front and rear panel connections
- Output of current, voltage and power figure are clearly visible
- Backlight can be adjusted
- LAN port supports Web remote control and VXI bus
- Supports 100 to 240V input voltage

2. Product Overview

UDP6900 series is single output programmable DC power supply. This series can realize all sorts of combined output of voltage and current in rated power. A single power supply can meet the two kinds of objects to be tested, high voltage and low current or high current and low voltage test, which greatly saves your cost and space. Take UDP6942B (60V/15A/360W) as an example, it can realize various combination of 60V/6A/360W, 40V/9A/360W and 24V/15A/360W.

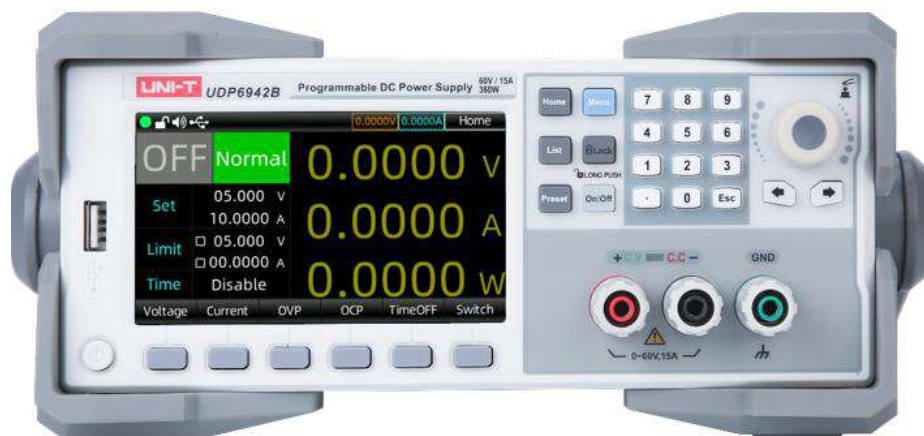
UDP6900 series has a built-in interface of RS232, RS485, USB and analog quantity. It supports SCPI protocol for remote control, PLC control and setting up an intelligent test platform. It widely used in DC-DC power module, battery charging and sensor and other testing fields.

Model	Voltage	Current	Power
UDP6922B	60V	5A	100W
UDP6932B	60V	10A	200W
UDP6933B	150V	5A	200W
UDP6942B	60V	15A	360W
UDP6952B	60V	25A	600W
UDP6953B	150V	10A	600W

3. Design Highlight

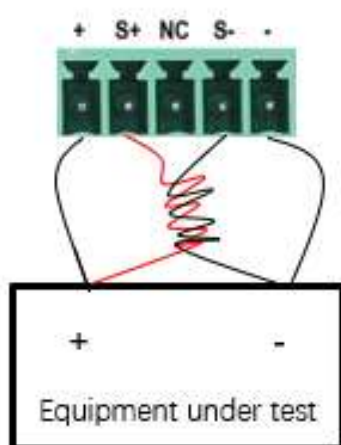
Multifunction Key and Direct Front

UDP6900 series is designed with numerous multifunction keys, with 4.3-inch true color LCD display prompts. The operation is simple and fast, so the instrument can quickly get started.



Remote Sense

In order to avoid voltage drops caused by long wires connecting to the load, remote testing allows measurements to be made directly on the terminals of the object to be measured to improve measurement accuracy. S+ and S- are the remote measurement terminals, and + and - are the output positive and negative terminals. When using the remote measurement function, it is necessary to connect a pair of driver wires from the rear panel + and - terminals to the device to be tested, and lead S+, S- to connect to the object to be tested. Please refer to the user manual for details.



Built-in Digital Voltmeter (DVM)

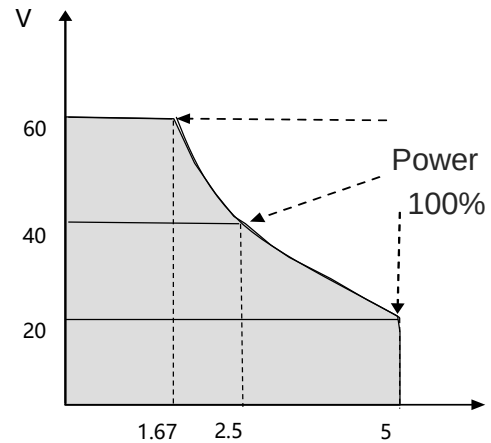
UDP6900 series has a built-in 4 1/2 digit voltmeter function, which can measure DC voltages from 0.001V to 65.000V (up to 160.0V DC for the UDP6933B/53B) via the terminal inputs on the rear of the instrument, and the measured values can be seen on the main screen.



Display Area of Voltmeter

Auto Range

UDP6900 series power supply can realize a variety of voltage and current combination output under fixed power. A single power supply can meet the high voltage and low current or high current and low voltage test of different objects to be tested. At the same time, because the power supply voltage and current output is controlled by the limit power, it will be manifested in the voltage and current automatic range switching.



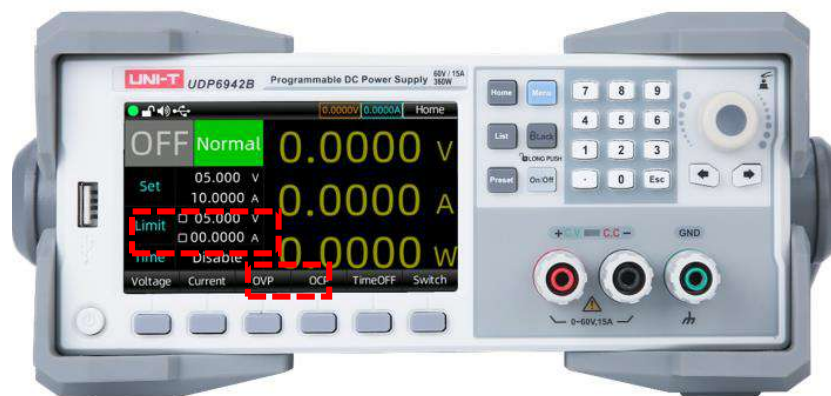
UDP6922B Output I-V Curve Chart

External Analog Quantity

All UDP6900 series has external analog quantity function. There is an external analog interface on the rear panel of the power supply, it can control the output voltage, current and switching output by inputting an external voltage (0~10 V), and output monitor by outputting 0~10 V through Vm and Im. If the user connects a voltage control device to multiple power supplies, the outputs of multiple power supplies can be adjusted at the same time.

OVP/OCF Function

UDP6900 series provides the over-voltage and over-current protection function, the protection point can be set by the key on the panel. Once the power supply is over-voltage (OVP) and over-current (OCF), the output will be shut down immediately and a prompt box pops up on the LCD.



Humanized design interface, OVP/OCF setting is easy to operate

List Output and Delayer Function

UDP6900 series provides list and delayer function.

The list output can successively output the user-defined parameter group (512 groups at most), output voltage, output current and time. User can change the parameter group by manual or use the template to batch set the parameter group.

The delayer can successively output the user-defined switch sequence group (512 groups at most), output switch and time. User can change the parameter group by manual or use the template to quickly generate the switch sequence.

The list output and delayer can manually both load and save the specified file from the internal Flash storage or external USB storage. The storage format is (.lst.csv) and (.dly.csv). User can directly open and quickly edit the EXCEL file on computer.

0.0000V0.0000A

List

Stopped

	No	Volt(V)	Curr(A)	kT(s)	
Current	000	509	00.000	00.0000	0.1
Looped	000	510	00.000	00.0000	0.1
Start	000	511	00.000	00.0000	0.1
Groups	512	0	00.000	00.0000	0.1
Cycles	Inf	1	00.000	00.0000	0.1
		2	00.000	00.0000	0.1
		3	00.000	00.0000	0.1
EndState	OFF	4	00.000	00.0000	0.1

Option

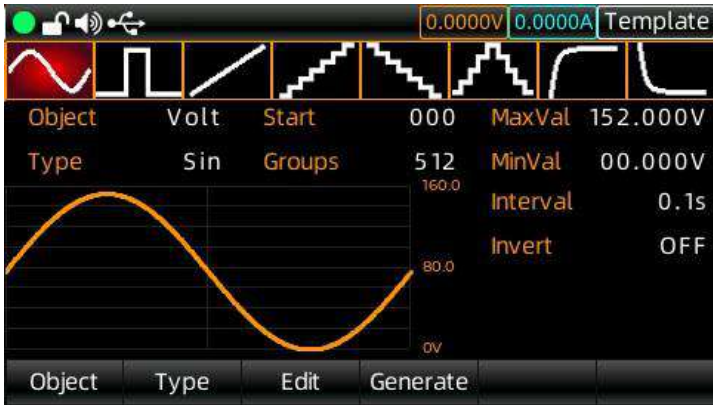
Edit

Start

Manage

Template

List Mode

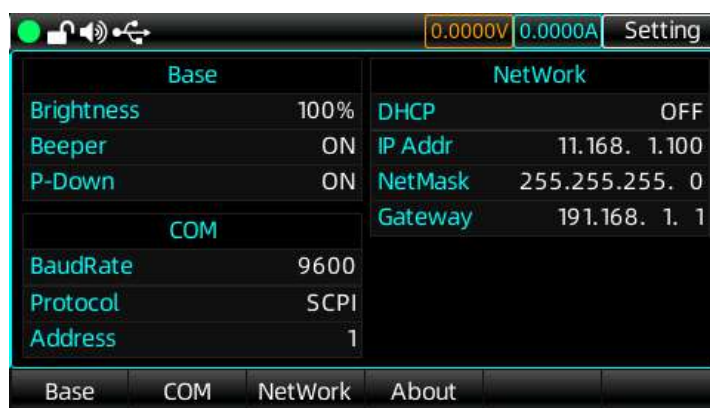


Using template to set the parameter

Multiple Main Menu

The main menu functions include monitor, system setting, user group, output setting, and language setting. Monitor function monitors the output voltage, current, power and digital voltmeter, and provides alarm prompts for each channel output and whether to turn off the output according to the set conditions. The output settings can be set for operating

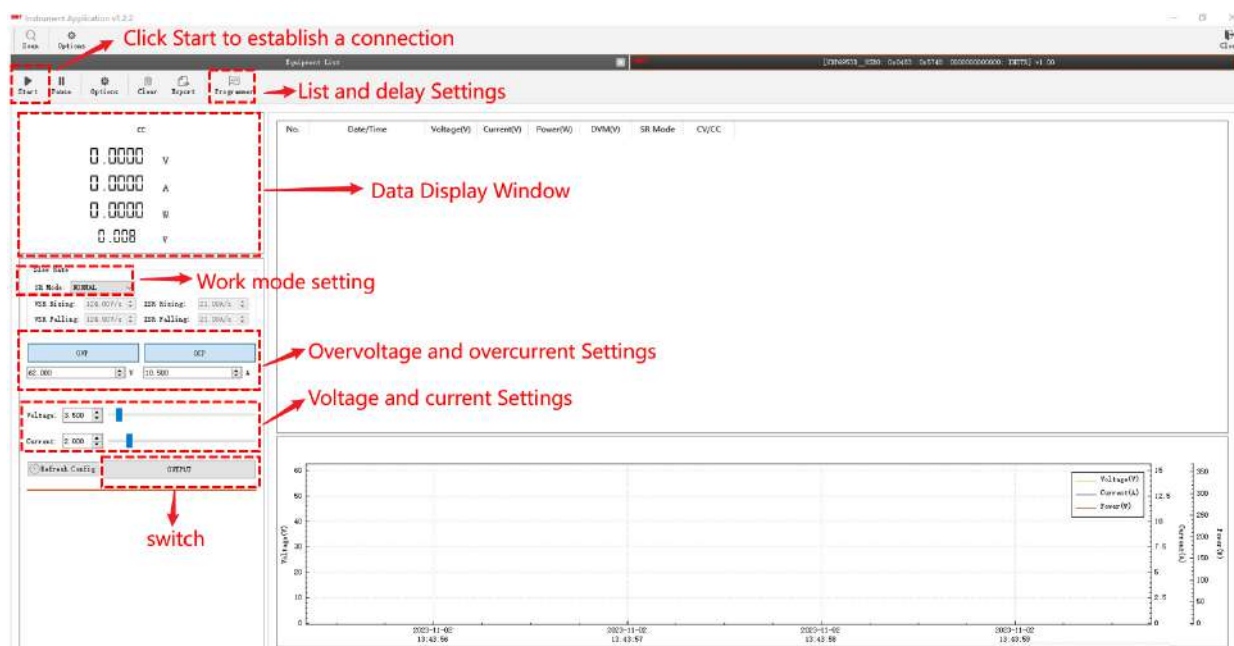
mode, power-up output and slope. The system settings include backlight, sound, RS232, network and communication settings, and it equipped with the factory settings.



Internet Setting

Upper Computer Software

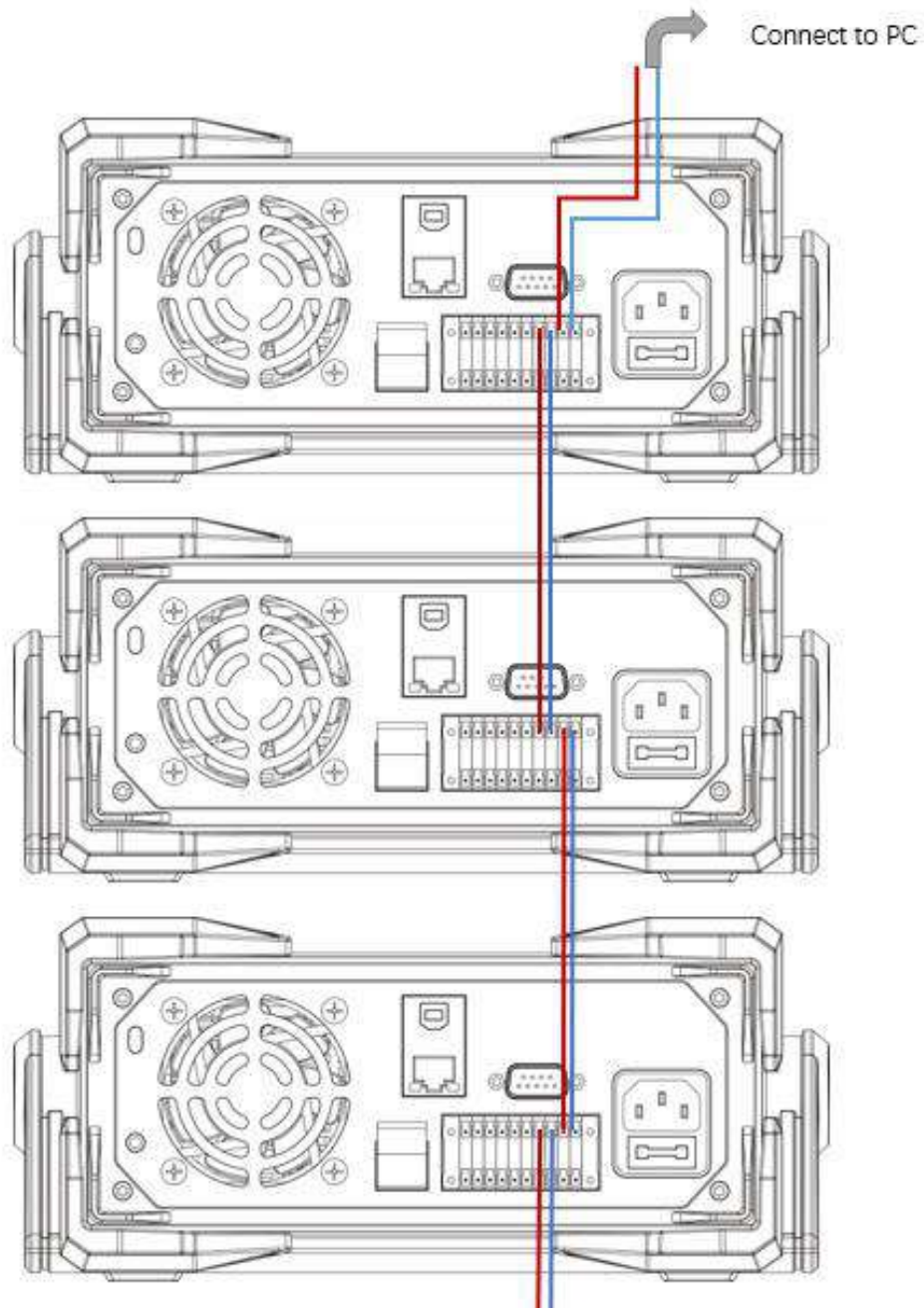
The UDP6900 series is equipped with the communication interfaces of RS232, USB, RS485, and provides free software for the UDP9000 series, which makes it easy to remotely control the UDP6900 series using the host computer software, set the voltage and current, and save the data records, as well as program and complete the automatic test.



Upper Computer Software Setting

Multi-machine Communication

Built-in RS485 interface can realize multiple machine connection communication and remote control multiple machine testing.



Multi-machine communication based on RS485

Web Control

UDP6900 series supports web remote control, which can remote set the main page parameter, list output, delayer and the system settings.



Web Control Setting

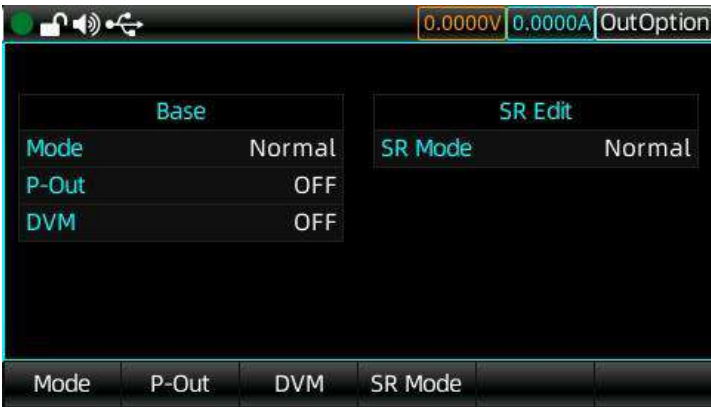
Slope Mode

The UDP6900 series power supply offers three slope modes: Normal, Voltage Slope (VSR), and current Slope (ISR).

Normal mode: the given value of voltage and current changes with the set value, and the slope parameter cannot be set;.

VSR mode: The initial current is the set value, and the voltage changes to the set voltage according to the set step, and the voltage rise and voltage fall slopes can be set.

ISR mode: The initial current is the set value, and the current changes to the set current step by step according to the set current. The current rise and current fall slopes can be set.



Setting interface

4. Technical Index

Parameter		UDP6922B	UDP6932B	UDP6942B
Rated Value (0°C~40°C)	Voltage	0~60V	0~60V	0~60V
	Current	0~5A	0~10A	0~15A
	Power	100W	200W	360W
Load Regulation $\pm$ (%of output + offset)	Voltage	$\leq 0.01\%+3\text{mV}$	$\leq 0.01\%+10\text{mV}$	$\leq 0.01\%+30\text{mV}$
	Current	$\leq 0.05\%+2\text{mA}$	$\leq 0.05\%+4\text{mA}$	$\leq 0.05\%+6\text{mA}$
Power regulation ratio $\pm$ (%of output + offset)	Voltage	$\leq 0.01\%+3\text{mV}$	$\leq 0.01\%+10\text{mV}$	$\leq 0.01\%+30\text{mV}$
	Current	$\leq 0.05\%+2\text{mA}$	$\leq 0.05\%+4\text{mA}$	$\leq 0.05\%+6\text{mA}$
Setting Resolution	Voltage	1mV	1mV	1mV
	Current	0.1mA	0.1mA	0.1mA
Readback Resolution	Voltage	0.1mV(<10V) 1mV(>10V)	0.1mV(<10V) 1mV(>10V)	0.1mV(<10V) 1mV(>10V)
	Current	0.1mA	0.1mA	0.1mA(<10A) 1mA(>10A)
Setting Accuracy (25°C $\pm$ 5°C) $\pm$ (%of output + offset)	Voltage	$\leq 0.03\%+5\text{mV}$	$\leq 0.03\%+5\text{mV}$	$\leq 0.03\%+5\text{mV}$
	Current	$\leq 0.1\%+5\text{mA}$	$\leq 0.1\%+10\text{mA}$	$\leq 0.1\%+15\text{mA}$
Readback accuracy (25°C $\pm$ 5°C) $\pm$ (%of output + offset)	Voltage	$\leq 0.03\%+5\text{mV}$	$\leq 0.03\%+5\text{mV}$	$\leq 0.03\%+5\text{mV}$
	Current	$\leq 0.1\%+5\text{mA}$	$\leq 0.1\%+10\text{mA}$	$\leq 0.1\%+15\text{mA}$
Ripple (20Hz ~20MHz)	Voltage	$\leq 5\text{mVp-p}$	$\leq 8\text{mVp-p}$	$\leq 15\text{mVp-p}$
	Current	$\leq 5\text{mA}_{\text{rms}}$	$\leq 6\text{mA}_{\text{rms}}$	$\leq 8\text{mA}_{\text{rms}}$
SENSE voltage (V)	1V			
Size (mm)	215mmW×88mH×373.7mmD			
Gross weight	4.0 KG			

Parameter		UDP6933B
Rated Value (0 °C~40 °C)	Voltage	0-150V
	Current	0-5A
	Power	200W
Load Regulation ±(% of output+offset)	Voltage	≤0.01%+20mV
	Current	≤0.01%+6mA
Power regulation ratio ±(% of output+offset)	Voltage	≤0.01%+20mV
	Current	≤0.01%+6mA
Setting Resolution	Voltage	1mV
	Current	0.1mA
Readback Resolution	Voltage	1mV(<100V), 10mV(≥100V)
	Current	0.1mA
Setting Accuracy (25°C±5°C) ±(% of output+offset)	Voltage	≤0.04%+30mV
	Current	≤0.1%+10mA
Readback accuracy (25°C±5°C) ±(% of output+offset)	Voltage	≤0.04%+30mV
	Current	≤0.1%+10mA
Ripple	Voltage	≤30mVp-p
	Current	≤6mA _{rms}
SENSE voltage(V)	1V	
Size	215mmW×88mH×373.7mmD	
Gross weight	4.0 KG	

Parameter		UDP6952B	UDP6953B
Rated Value (0°C~40°C)	Voltage	0~60V	0~150V
	Current	0~25A	0~10A
	Power	600W	600W
Load Regulation $\pm$ (%of output + offset)	Voltage	$\leq 0.01\% + 30\text{mV}$	$\leq 0.01\% + 25\text{mV}$
	Current	$\leq 0.1\% + 10\text{mA}$	$\leq 0.05\% + 10\text{mA}$
Power regulation ratio $\pm$ (%of output + offset)	Voltage	$\leq 0.01\% + 30\text{mV}$	$\leq 0.01\% + 25\text{mV}$
	Current	$\leq 0.1\% + 10\text{mA}$	$\leq 0.05\% + 10\text{mA}$
Setting Resolution	Voltage	1mV	1mV
	Current	0.1mA	0.1mA
Readback Resolution	Voltage	0.1mV(<10V) 1mV(>10V)	1mV(<100V) 10mV(>100V)
	Current	0.1mA(<10A) 1mA(>10A)	0.1mA
Setting Accuracy (25°C $\pm$ 5°C) $\pm$ (%of output + offset)	Voltage	$\leq 0.03\% + 5\text{mV}$	$\leq 0.03\% + 20\text{mV}$
	Current	$\leq 0.1\% + 25\text{mA}$	$\leq 0.1\% + 25\text{mA}$
Readback accuracy (25°C $\pm$ 5°C) $\pm$ (%of output + offset)	Voltage	$\leq 0.03\% + 5\text{mV}$	$\leq 0.03\% + 20\text{mV}$
	Current	$\leq 0.1\% + 25\text{mA}$	$\leq 0.1\% + 25\text{mA}$
Ripple (20Hz ~20MHz)	Voltage	$\leq 20\text{mVp-p}$	$\leq 50\text{mVp-p}$
	Current	$\leq 15\text{mA}_{\text{rms}}$	$\leq 15\text{mA}_{\text{rms}}$
SENSE voltage (V)	1V		
Size (mm)	215mmW×88mH×373.7mmD		
Gross weight	4.5 KG		

5. Contact Us

UNI-T Technical Support Hotline: 400-876-7822

UNI-T® is the registered brand of Uni-Trend Technology (China) Co., Ltd. The product information in this document is subject to change without notice, for more information about UNI-T, please visit official website <http://www.uni-trend.com>

Copyright © UDP6900-2024-02 by UNI-T

All Rights Reserved.