ITECH

YOUR POWER TESTING SOLUTION

Product

IT-M3200 High Accuracy Programmable DC Power Supply

TINY BUT MIGHTY

Ultra-compact / Flexible / High precision

IT-M3200 High Accuracy Programmable DC Power Supply

APPLICATIONS

- Smart Wearable Device Testing
- Sensor Module Testing
- Semiconductor IC Testing
- 5G Testing

Your Power Testing Solution

High resolution, up to 10nA

Low ripple and low noise

Four ranges of current measurement

CC/CV priority

IT-M3200 high-precision programmable DC power supply adopts a mixed modes design, which not only takes into account high power and low ripple output, but also has dynamic load response, switching between multiple current measurement ranges. It meets various current measurement requirement from ampere level to micro-ampere level.

IT-M3200 has a flexible modular architecture, independent multi-channel design with synchronous operation function. Users can configure each channel arbitrarily according to the test requirements of the DUT. The maximum channels is up to 16*16 which can meet various customized test requirements. It is widely used in the test fields of 3C products, semiconductor devices, 5G, IoT and medical electronic equipment, etc.

FEATURE

- 1U Half-rack, maximum power is up to 360W
- Wide range measurement
- Low ripple and noise
- High resolution, high accuracy and high stability
- Current readback is up to 10nA
- Four current measurement ranges Low/Middle/High/Auto
- CC/CV priority setting
- Foldback
- Adjustable rise/fall time, soft start / stop
- Multi-channel independent control, one communication card can control 16 channels, up to 256 channels
- Different timing output of each channel to achieve synchronization or proportional tracking
- List
- Support multiple communication protocol,CANOPEN,LXI,SCPI
- Five optional cards, supporting RS232,CAN,LAN,GPIB, USB_TMC,USB_VCP,RS485, analog and IO
- Multiple protection, OVP/OCP/OTP/OPP/UVP/UCP

Model	Voltage	Current	Power
IT-M3223	60V	10A	100W
IT-M3233	60V	10A	200W
IT-M3243	60V	10A	360W
IT-M3253	20V	20A	100W
IT-M3263	20V	20A	200W
IT-M3273	20V	20A	360W

01 IT-M3200 high-precision programmable DC power supply

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Application Fields

Smart sensor module testing

Acceleration sensor, gyroscope test, flow sensor, pressure sensor test, etc.

5G test

GSM module, WiFi module, optical module test, etc.

Power semiconductor discrete device testing

IGBT chip test, power management chip, LED / OLED display power consumption test, etc.

Wearable device testing

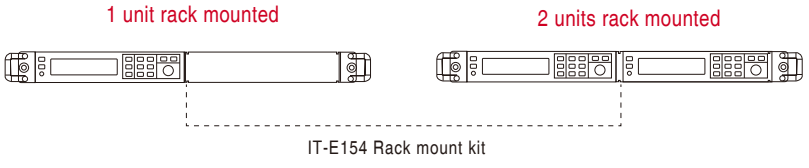
Medical wearable devices, smart bracelet testing, etc.

1U half rack Mini size

IT-M3200 provides 360W power output with 1U half rack size. Besides of the high-power density, it has high resolution, high accuracy and multi-range measurement functions. With auto-ranging design, the device covers a wide range of application requirements.

Modular design, flexible combination

The unique plug-in design makes it as simple as building blocks to stack IT-M3200 devices, without purchasing any additional accessories. Meanwhile, users can choose optional IT-E154 rack mount kit to install one or more units into a standard 19-inch cabinet easily.



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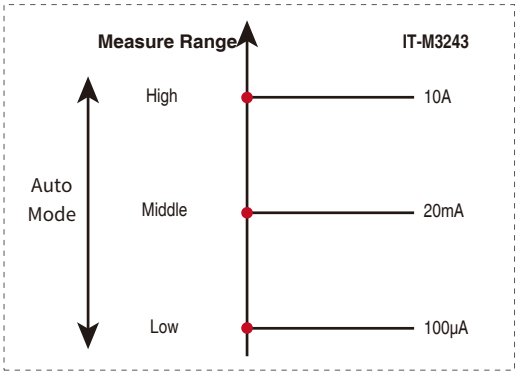
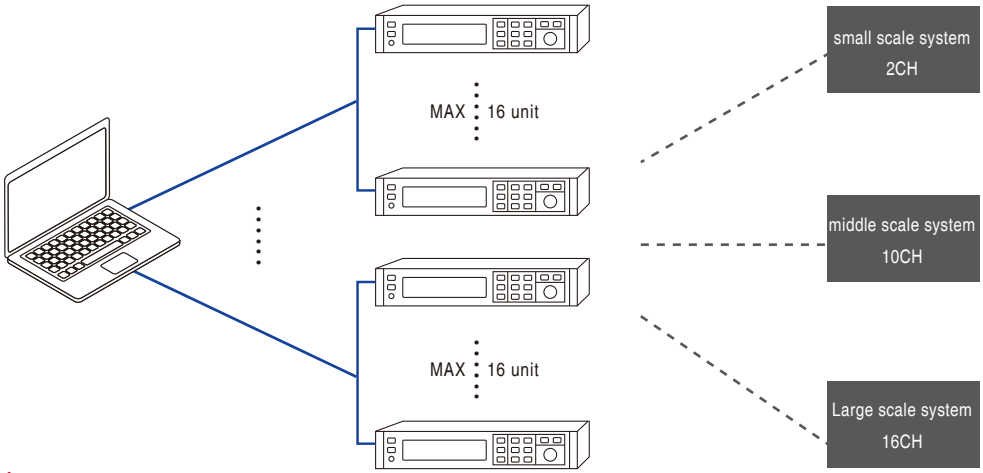
Multi-level current range

IT-M3200 provides multi-level (Low/Middle/High/Auto) current range switching, with resolution up to 10nA, to meet the current measurement needs from Amp level to micro-amp level. The user can realize the flexible switching between low and high current measurement at the Auto level, no need to control manually. This function is suitable for testing in the fields of 5G, wearable devices and other low power consumption products.



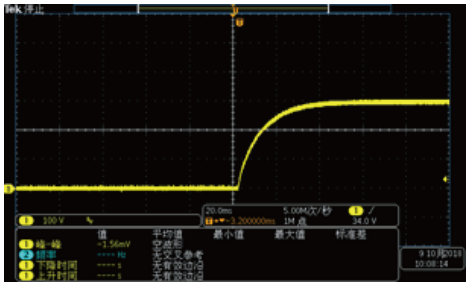
Multiple channel independent control

IT-M3200 Series is provided with independent multi-channel design to simplify the complex wiring between device and PC. When the communication interface of 1 unit IT-M3200 of a multi-channel system is connected with PC, we may realize remote control of 16*16 channels at maximum.

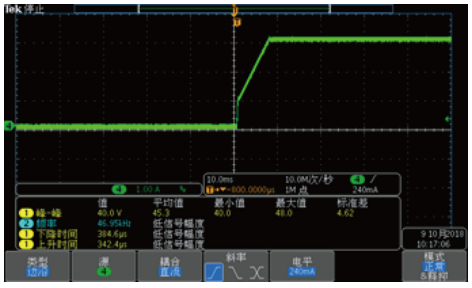


CC&CV Priority

IT-M3200 series have CC/CV priority function, which helps the user to solve the problems, and make the tests easier especially for the applications of high speed power supply or no overshooting current. Users can get fast voltage rising time by CV priority mode. This is helpful in the high-speed voltage test.Users can also choose CC priority mode to output no overshooting current. It's good for test DUT under CC working condition. This is used in various application fields such as laser test, IC test, charge and discharge test, transient simulation of power supply in automotive electronics and so on.



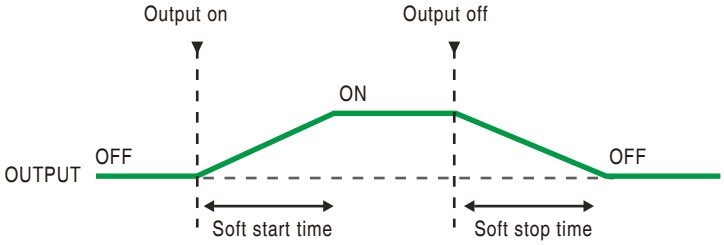
CV priority, voltage without overshoot



CC priority, current without overshoot

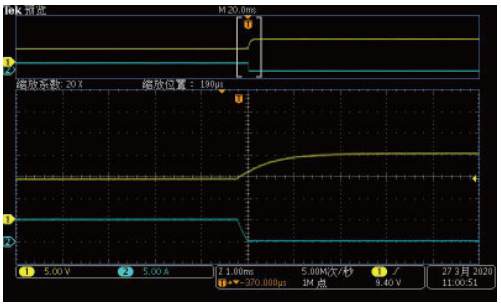
Soft start/ stop function

IT-M3200 Series can be set the rise up and fall time of output voltage or current to prevent the sudden up and down of voltage at the moment of onloading or unloading, triggering the DUT false protection action.

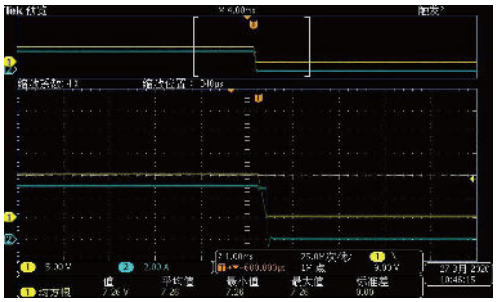


Foldback protection

IT-M3200 Series with Foldback protection function, is used for turn off the output when the power supply is switched by CV/CC, so as to protect certain DUT that are sensitive to voltage overshoot and current overshoot. User can specify working mode and set the delay time protection, if the current working mode is switched, it will trigger the protection and turn off the output when the delay time is used up.



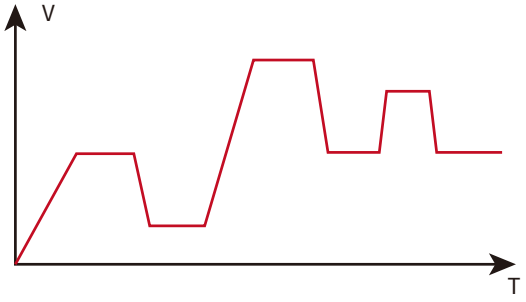
CC to CV, no overshoot



CV to CC, no overshoot

List Function

Users can modify and edit the output waveform of the voltage and current with time according to customer's test requirements without use the software, also can control the voltage rise and decline slope. the power supply will automatically transform the output according to pre-edited waveform after receiving the trigger signal.



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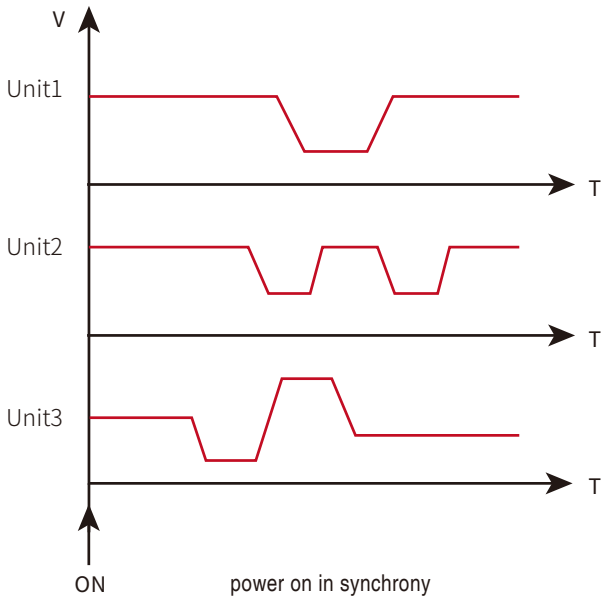
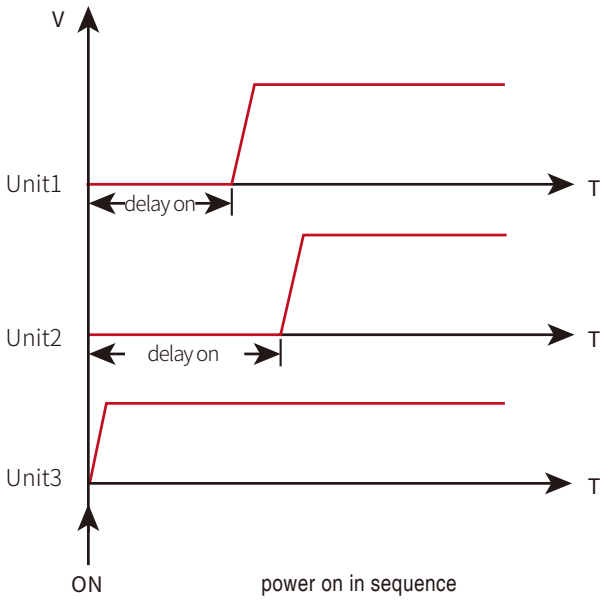
Link function

The Link function is mainly designed for the cascade control of multiple devices. It is especially suitable for the multiple DUT synchronized testing or the application of multi-channel power input. IT-M3200 series support Duplicate / On-Off / Track of three modes, user only need to set the parameters on one of the power supplies, then automatically copy the set parameters or proportionally synchronize to other devices of M3200 series in the cascade circuit.

IT-M3200 series may performance two solutions of synchronous power-on and in sequence power-on When the link-on / off function is used with the on / off delay function in the menu.



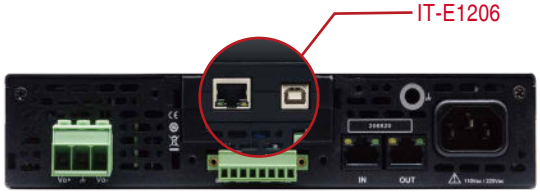


Optional accessories

IT-M3200 series provides below optional multiple interfaces on rear panel to realize different functions, like communication interface, external analog interface.

Pictures	Model	Interface
	IT-E1205	GPIB Interface
	IT-E1206	USB/LAN Interface
	IT-E1207	RS–232/CAN Interface
	IT-E1208	Analogue interface /RS485 Interface
	IT-E1209	USB Interface
	IT-E154A/B/C	Rackmount Kits

Standard rear panel



Rear panel with optional interface

Specification

			IT-M3223	IT-M3233	IT-M3243
Rated Value (0 ℃-40 ℃)	Voltage		0~60V	0~60V	0~60V
	Current		0~10A	0~10A	0~10A
	Power		100W	200W	360W
Load Regulation (%of Output+Offset)	Voltage		≤0.01% + 5mV [3]	≤0.01% + 5mV [3]	≤0.01% + 5mV [3]
	Current		≤0.05% + 2mA	≤0.05% + 2mA	≤0.05% + 2mA
Line Regulation (%of Output+Offset)	Voltage		≤0.02% + 3mV	≤0.02% + 3mV	≤0.02% + 3mV
	Current		≤0.05% + 1mA	≤0.05% + 1mA	≤0.05% + 1mA
Setup Resolution	Voltage		1mV	1mV	1mV
	Current		1mA	1mA	1mA
Readback Resolution	Voltage		1mV	1mV	1mV
	Current	10A Range	1mA	1mA	1mA
		20mA Range	1uA [4]	1uA [4]	1uA [4]
		100uA Range	10nA [4]	10nA [4]	10nA [4]
Setup accuracy within 12 months, 23 ℃±5 ℃ ±(%of Output + Offset)	Voltage		≤0.03% + 12mV [5]	≤0.03% + 12mV [5]	≤0.03% + 12mV [5]
	Current		≤0.05% + 5mA	≤0.05% + 5mA	≤0.05% + 5mA
Readback accuracy within 12 months, 23 ℃±5 ℃ ±(%of Output + Offset)	Voltage		≤0.03% + 8mV	≤0.03% + 8mV	≤0.03% + 8mV
	Current	10A Range	≤0.05% + 5mA	≤0.05% + 5mA	≤0.05% + 5mA
		20mA Range	≤0.05% + 20uA [1]	≤0.05% + 20uA [1]	≤0.05% + 20uA [1]
		100uA Range	≤0.05% + 100nA [1]	≤0.05% + 100nA [1]	≤0.05% + 100nA [1]
Ripple (20Hz -20MHz)	Voltage		Typical ≤ 8mVp-p , ≤ 1mV rms		
	Current		≤3mArms	≤3mArms	≤3mArms
Rise Time (Fast mode under no load)	Voltage		≤ 30ms [2]	≤ 30ms [2]	≤ 30ms [2]
Rise Time (Fast mode under full load)	Voltage		≤ 30ms [2]	≤ 30ms [2]	≤ 30ms [2]
Fall Time(Fast mode under no load)	Voltage		≤ 50ms [2]	≤ 50ms [2]	≤ 50ms [2]
Fall Time(Fast mode under full load)	Voltage		≤ 10ms [2]	≤ 10ms [2]	≤ 10ms [2]
Rise Time (Full load)	Current		≤ 30ms [2]	≤ 30ms [2]	≤ 30ms [2]
Dynamic Response	from 50%-100% LOAD to 75 mV ≤ 50uS				
Sense	1V per each lead				
Programming Reaction(typic value)	5ms				
Stability of setup value-30min (%of Output +Offset)	Voltage		0.01% + 1mV	0.01% + 1mV	0.01% + 1mV
	Current		0.02% + 2mA	0.02% + 2mA	0.02% + 2mA
Stability of setup value-8h (%of Output +Offset)	Voltage		0.01% + 3mV	0.01% + 3mV	0.01% + 3mV
	Current		0.05% + 3mA	0.05% + 3mA	0.05% + 3mA
Stability of readback value-30min (%of Output +Offset)	Voltage		0.01% + 1mV	0.01% + 1mV	0.01% + 1mV
	Current	10A Range	0.02% + 3mA	0.02% + 3mA	0.02% + 3mA
		20mA Range	0.01% + 3uA [1]	0.01% + 3uA [1]	0.01% + 3uA [1]
		100uA Range	0.01% + 20nA [1]	0.01% + 20nA [1]	0.01% + 20nA [1]
Stability of readback value-8h (%of Output +Offset)	Voltage		0.01% + 5mV	0.01% + 5mV	0.01% + 5mV
	Current	10A Range	0.05% + 3mA	0.05% + 3mA	0.05% + 3mA
		20mA Range	0.01% + 4uA [1]	0.01% + 4uA [1]	0.01% + 4uA [1]
		100uA Range	0.01% + 30nA [1]	0.01% + 30nA [1]	0.01% + 30nA [1]
AC Input	Voltag1		110V ± 10%	110V ± 10%	110V ± 10%
	Voltag2		220V ± 10%	220V ± 10%	220V ± 10%
	Frequency		47HZ ~ 63Hz	47HZ ~ 63Hz	47HZ ~ 63Hz
Working Temperature	0 ~ 40℃				
Storage Temperature	-20℃ ~ 70℃				
Working humidity	15% ~ 85% @40℃				
Dimension(mm)	234±1mm(W)*57±1mm(H)*477±1mm(D)			234±1mm(W)*57±1mm(H)*477±1mm(D)	234±1mm(W)*57±1mm(H)*477±1mm(D)
N.W.	4.5kg				

*1 The accuracy of the small range current (20mA and 100uA range) is measured under CV mode of the power supply output

*2 10%-90% dynamic time *3 Measurement under sense

*4 When the current measurement range is in the range of 20mA and 100uA, the capacitive load of the power supply cannot exceed 47uF

*This information is subjected to change without notice.

Your Power Testing Solution

IT-M3200 high-precision programmable DC power supply

Specification

			IT-M3253	IT-M3263	IT-M3273
Rated Value (0 ℃-40 ℃)	Voltage		0~20V	0~20V	0~20V
	Current		0~20 A	0~20 A	0~20 A
	Power		100 W	200 W	360 W
Load Regulation	Voltage		≤0.01% + 3mV [3]	≤0.01% + 3mV [3]	≤0.01% + 3mV [3]
(%of Output+Offset)	Current		≤0.05% + 2mA	≤0.05% + 2mA	≤0.05% + 2mA
Line Regulation	Voltage		≤0.02% + 3mV	≤0.02% + 3mV	≤0.02% + 3mV
(%of Output+Offset)	Current		≤0.05% + 1mA	≤0.05% + 1mA	≤0.05% + 1mA
Setup Resolution	Voltage		1mV	1mV	1mV
	Current		1mA	1mA	1mA
Readback Resolution	Voltage		0.1V	1mV	1mV
	Current	20A Range	1mA	1mA	1mA
		20mA Range	1uA [4]	1uA [4]	1uA [4]
		100uA Range	10nA [4]	10nA [4]	10nA [4]
Setup accuracy within 12 months, 23 ℃±5 ℃ ±(%of Output + Offset)	Voltage		≤0.03% + 5mV [5]	≤0.03% + 5mV [5]	≤0.03% + 5mV [5]
	Current		≤0.05% + 10mA	≤0.05% + 10mA	≤0.05% + 10mA
Readback accuracy within 12 months, 23 ℃±5 ℃ ±(%of Output + Offset)	Voltage		≤0.03% + 5mV	≤0.03% + 5mV	≤0.03% + 5mV
	Current	20A Range	≤0.03% + 5mV	≤0.05% + 10mA	≤0.05% + 10mA
		20mA Range	≤0.05% + 20uA [1]	≤0.05% + 20uA [1]	≤0.05% + 20uA [1]
		100uA Range	≤0.05% + 100nA [1]	≤0.05% + 100nA [1]	≤0.05% + 100nA [1]
Ripple	Voltage		Typical ⩽ 8mVp-p , ⩽ 1mV rms		
(20Hz -20MHz)	Current		≤5mArms	≤5mArms	≤5mArms
Rise Time (Fast mode under no load)	Voltage		≤ 30ms [2]	≤ 30ms [2]	≤ 30ms [2]
Rise Time (Fast mode under full load)	Voltage		≤ 30ms [2]	≤ 30ms [2]	≤ 30ms [2]
Fall Time(Fast mode under no load)	Voltage		≤ 50ms [2]	≤ 50ms [2]	≤ 50ms [2]
Fall Time(Fast mode under full load)	Voltage		≤ 10ms [2]	≤ 10ms [2]	≤ 10ms [2]
Rise Time (Full load)	Current		≤ 30ms [2]	≤ 30ms [2]	≤ 30ms [2]
Dynamic Response	from 50%~100% LOAD to 75 mV ≤ 50uS				
Sense	2V max				
Programming Reaction(typic value)	5ms				
Stability of setup value-30min	Voltage		0.01% + 1mV	0.01% + 1mV	0.01% + 1mV
(%of Output +Offset)	Current		0.02% + 5mA	0.02% + 5mA	0.02% + 5mA
Stability of setup value-8h	Voltage		0.01% + 3mV	0.01% + 3mV	0.01% + 3mV
(%of Output +Offset)	Current		0.05% + 10mA	0.05% + 10mA	0.05% + 10mA
Stability of readback value-30min	Voltage		0.01% + 1mV	0.01% + 1mV	0.01% + 1mV
(%of Output +Offset)	Current	20A Range	0.02% + 5mA	0.02% + 5mA	0.02% + 5mA
		20mA Range	0.01% + 3uA [1]	0.01% + 3uA [1]	0.01% + 3uA [1]
		100uA Range	0.01% + 20nA [1]	0.01% + 20nA [1]	0.01% + 20nA [1]
Stability of readback value-8h	Voltage		0.01% + 5mV	0.01% + 5mV	0.01% + 5mV
(%of Output +Offset)	Current	20A Range	0.05% + 10mA	0.05% + 10mA	0.05% + 10mA
		20mA Range	0.01% + 4uA [1]	0.01% + 4uA [1]	0.01% + 4uA [1]
		100uA Range	0.01% + 30nA [1]	0.01% + 30nA [1]	0.01% + 30nA [1]
AC Input	Voltag1		110V ± 10%	110V ± 10%	110V ± 10%
	Voltag2		220V ± 10%	220V ± 10%	220V ± 10%
	Frequency		47Hz ~ 63Hz	47Hz ~ 63Hz	47Hz ~ 63Hz
Working Temperature	0 ~ 40 ℃				
Storage Temperature	-20 ℃ ~ 70 ℃				
Working humidity	15% ~ 85% @40 ℃				
Dimension(mm)	234±1mm(W)*57±1mm(H)*477±1mm(D)			234±1mm(W)*57±1mm(H)*477±1mm(D)	234±1mm(W)*57±1mm(H)*477±1mm(D)
N.W.	4.5Kg				

*1 The accuracy of the small range current (20mA and 100uA range) is measured under CV mode of the power supply output

*2 10%-90% dynamic time *3 Measurement under sense

*4 When the current measurement range is in the range of 20mA and 100uA, the capacitive load of the power supply cannot exceed 47uF

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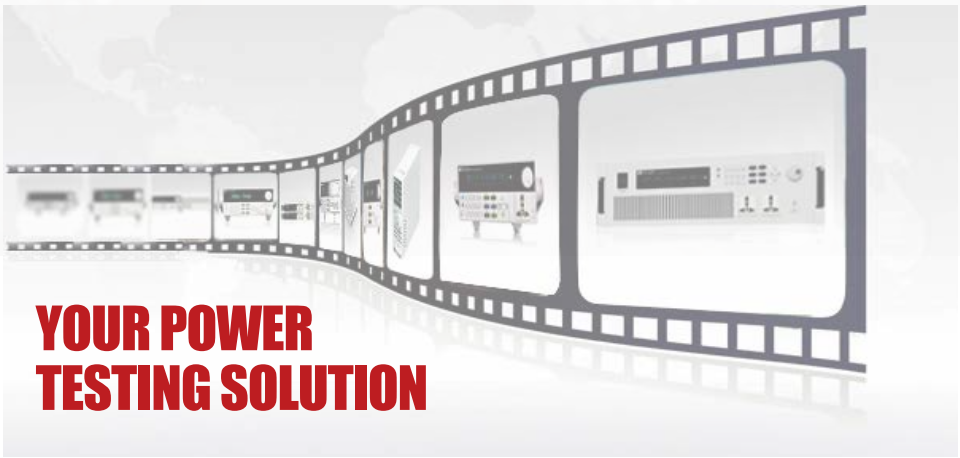

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