

ITECH ELECTRONIC

# IT2700

## Multi-channel Modular Power System



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# IT2700

## Multi-channel Modular Power System

The IT2700 Series multi-channel modular power system delivers ultra-high power density. A 1U mainframe accepts a mix of test modules—including DC power supply, bidirectional DC source, regenerative DC electronic load, and SMU (precision source meter). Modules support synchronization and sequence control; identical modules can be configured in series or in parallel. Standard interfaces include LAN, USB, CAN, digital I/O, plus free host software. It is ideal for ATE integration across R&D, design verification, and manufacturing of DC-DC converters, aerospace/ satellite modules, telecom power modules, power semiconductors, and 3C products such as smartphones, PCBA, battery emulation & testing, optoelectronic chips, and power-management ICs.

### Features

- Compact size: 1U single unit outputs up to 8 channels
- Flexible modular system: mix and match various modules
- 2 mainframes (1U), 4 module types (DC power supply, bidirectional power supply, regenerative load and SMU)\*4
- SMU module supports four-quadrant operation, EIS testing, and offers nA-level accuracy
- Free PC software PV2700, display 8-channel output
- Oscilloscope function: Capable of digitizing voltage and current with a frequency of up to 200kHz and a memory depth of 600kpts\*1
- Data logging function: Up to 50kHz sampling rate, and the data can be saved on a USB drive or stored via the host computer.
- The electrically isolated source load module supports 8 modules in master-slave parallel connection up to 2kW\*2
- Load function: support CC, CV, CP, CR, CC+CV, CR+CV, CP+CV, CC+CR, AUTO,BSIM (battery simulation)
- Supports automatic switching for CV, CC, and CP, with selectable CC & CV priority, and internal resistance setting.
- Bidirectional power supply module supports resistance setting in load mode
- All modules are wide-range modules
- Single module voltage up to 150V, current up to 50A, power up to 500W
- Supports synchronous control between different frames, no upper limit of channels
- Rich trigger output and input, support step trigger output, can trigger other modules (acquisition, oscilloscope, data recording, etc.)  
Measurement functions: multi-output/single-output display, supports average, minimum and maximum values of V/I/P, and calculates P, Ah and Wh for all outputs
- Output functions: list function, arbitrary waveform, sweep, arbitrary wave sequence, constant dwell arbitrary wave, load transient, battery simulation\*3, battery test, output on/off serialization, Watchdog, support output coupling
- Full protection: OVP, UVP, OCP, OPP, OTP, UCP, Foldback, supports protection coupling
- Modules come with a built-in power relay, supporting reverse polarity protection, leakage prevention, and surge protection
- Support Web control, use common browser to realize all functions
- AC input: adaptive 100-380 V ac single phase
- Built-in LAN, USB-TMC,USB-VCP, CAN, digital I/O, data import and export by USB and supports SCPI and Modbus protocol

\*2 One mainframe allows two sets of master-slave parallel connections

\*3 only available for bidirectional power supply modules

\*4 SMU module should be equipped with IT2705 or IT2702 mainframe

\*1 The oscilloscope functions of the 1U mainframe can be operated via PV2700 software.



DC-DC function verification



Design verification of electronic products



Battery cell simulation and test



Chip test



IT2702 1U frame without front panel



IT2703 1U frame with touch screen

# Your Power Testing Solution

## IT2700 Multi-channel Modular Power System

| Voltage | Current                                                                      | Power                                 | DC power supply <sup>*1</sup> | Bidirectional DC power supply <sup>*1</sup> | Regenerative DC load <sup>*1</sup> | SMU module <sup>*2</sup> |
|---------|------------------------------------------------------------------------------|---------------------------------------|-------------------------------|---------------------------------------------|------------------------------------|--------------------------|
| ±20V    | ±3A                                                                          | ±20W (2 slots occupied)               |                               |                                             |                                    | IT27814(E)               |
| 20V     | 50A                                                                          | 500W <sup>*3</sup> (2 slots occupied) | IT27153/IT27153R              | IT27353/IT27353R                            | IT27553/IT27553R                   |                          |
| 30V     | 15A                                                                          | 200W                                  | IT27134/IT27134R              | IT27334/IT27334R                            | IT27534/IT27534R                   |                          |
|         | 30A                                                                          | 500W (2 slots occupied)               | IT27154/IT27154R              | IT27354/IT27354R                            | IT27554/IT27554R                   |                          |
| 60V     | 10A                                                                          | 200W                                  | IT27135/IT27135R              | IT27335/IT27335R                            | IT27535/IT27535R                   |                          |
|         | 20A                                                                          | 500W (2 slots occupied)               | IT27155/IT27155R              | IT27355/IT27355R                            | IT27555/IT27555R                   |                          |
| 150V    | 5A                                                                           | 200W                                  | IT27137/IT27137R              | IT27337/IT27337R                            | IT27537/IT27537R                   |                          |
|         | 10A                                                                          | 500W (2 slots occupied)               | IT27157/IT27157R              | IT27357/IT27357R                            | IT27557/IT27557R                   |                          |
| IT2702  | 1U mainframe without front panel ( 8 slots)                                  |                                       |                               |                                             |                                    |                          |
| IT2703  | 1U mainframe with touch screen ( 6 slots)                                    |                                       |                               |                                             |                                    |                          |
| IT2704  | 1U mainframe without front panel ( 8 slots, only available for load modules) |                                       |                               |                                             |                                    |                          |
| IT2705  | 5U mainframe with touch screen (8 slots)                                     |                                       |                               |                                             |                                    |                          |

\*1 IT27xx should be equipped with IT2702/ IT2704/IT2705 ; IT27xxR should be equipped with IT2703

\*2 SMU module should be equipped with IT2705 or IT2702 mainframe.

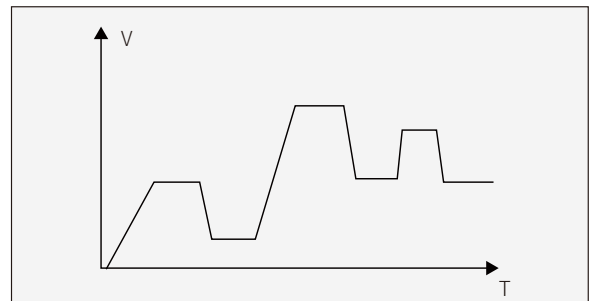
\*3 20V/50A/500W module could only be equipped with 1U mainframe.

## List Sequence

By editing the voltage, current, pulse width and slope of each step, it can generate a variety of complex sequences, help you complete various loading tests and import or export the files.

| Priority | Repeat  | End         | Total step: 2 |      |        |        |
|----------|---------|-------------|---------------|------|--------|--------|
| Current  | 1       | Normal      |               |      |        |        |
| No.      | Curr(A) | Slope(A/ms) | Time(s)       | Pace | BOStep | EOStep |
| 1        | 1.000   | 0.100       | 1.000         | Auto | On     | On     |
| 2        | 2.000   | 0.100       | 1.000         | Auto | On     | Off    |

- ☒ Up to 2000 steps can be set for each list file
- ☒ Support infinite loop
- ☒ CV, CC, CP, CR mode
- ☒ Voltage
- ☒ Current
- ☒ Slope
- ☒ Supports automatic jump or wait for trigger before jump
- ☒ Generates pre-step trigger or post-step trigger output



## CC&CV Priority

IT2700 power supply and bidirectional power supply modules allow you to select the response priority of the CV/CC loop to determine whether the output is a voltage high-speed mode or a current non-overshoot mode, adapting to different DUTs.

**Application: test of diodes, laser diodes, LEDs, power semiconductor components**

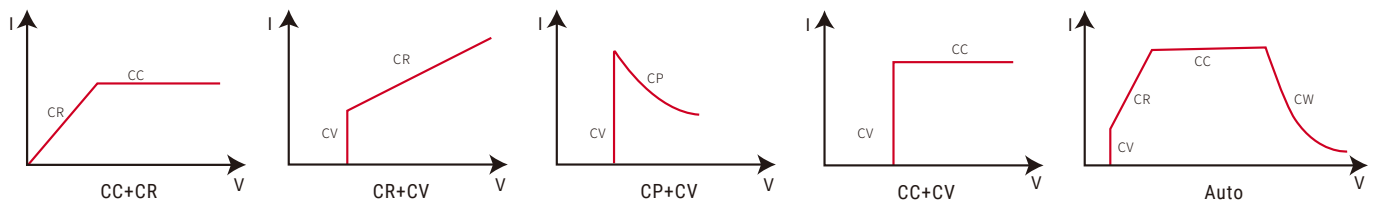
# Your Power Testing Solution

## IT2700 Multi-channel Modular Power System

### Multiple Operation Modes

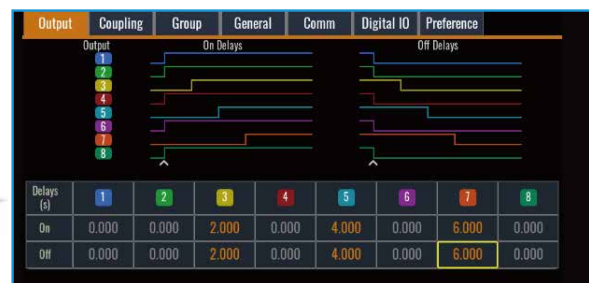
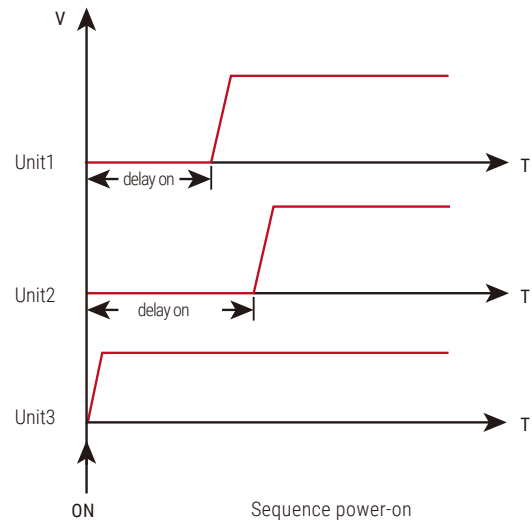
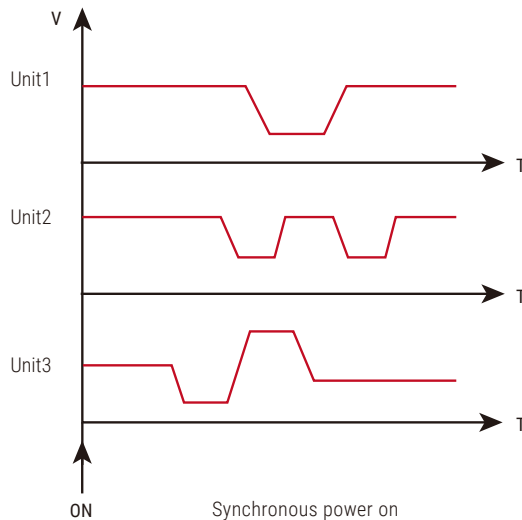
IT2700 load provides 10 operating modes. In addition to CC, CV, CR, and CP, it also includes 5 compound modes: CC+CR mode, which is often used in OBC voltage limiting, current limiting characteristic tests, constant voltage accuracy, and constant current accuracy tests to avoid OCP of the OBC. The CR+CV mode is used to simulate LED lights, test the LED power supply, and acquires the current ripple. The CP+CV mode can replace the VON point setting or be used for battery discharge testing, and the voltage setting point can be used as the cut-off voltage. CC+CV mode can be used to simulate batteries, test charging piles or chargers, and limit the maximum load current while CV is working. AUTO mode allows it to be automatically switch between CV, CR, CC and CP modes. When the DUT's protection circuit is damaged, the mode can be automatically switched to avoid DUT damage.

BSIM (Battery Simulation) mode can output a voltage to simulate a battery for testing chargers and other equipment.



### Output On/Off Serialization

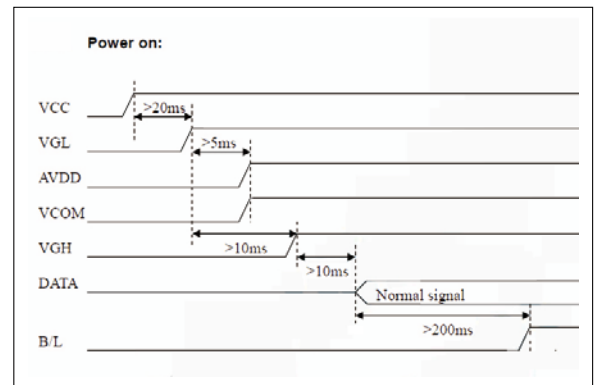
The on/off delay function for each output allows you to serialize the on/off of the output.



### Multi-channel Sequence Power-on

Application: chip power-on sequence test/CPU power management chip test

- When multiple power supplies need to output at the same time
- The DUT has multiple inputs and is powered on in a certain timing sequence
- TFT/LCD test, computer PCB test



### Battery Simulation

IT2700 bidirectional power supply modules have built-in battery simulation function. It can simulate parallel connection of multiple battery modules. You can set the battery's initial state, charge and discharge cutoff state, and you can import battery curves or customize simple battery models, such as battery full charge, power loss voltage, battery internal resistance ESR, etc. The bidirectional source module can be worked with software such as BSS2000M to simulate multi-channel batteries.

#### Typical DUTs

Small power tool

Portable electronic devices

Medical equipment

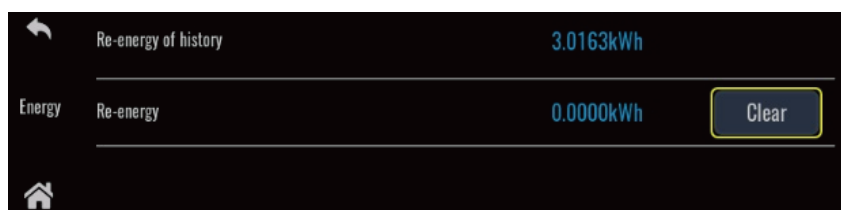
Drones, electric two-wheelers

Outdoor power supply



### Power Accumulation Function

IT2700 series uses the power electronic transformation technology on the premise of completing power test to make output energy of DUT recycled and reused. Via fast sampling of voltage and current, the regenerative power value can be observed on the front panel.





# Your Power Testing Solution

## IT2700 Multi-channel Modular Power System

### DC-DC modules Test

DC-DC modules are widely used in consumer electronics, automotive electronics, industrial equipment, communication systems, energy storage, and new energy sectors.

#### Test purpose

Low-voltage, high-current, high-voltage and low-current production lines calibrate input and output voltage, current, efficiency and stability

#### Test method

Select the IT2700 power supply and load modules and connect them to the input and output of the DC-DC modules respectively

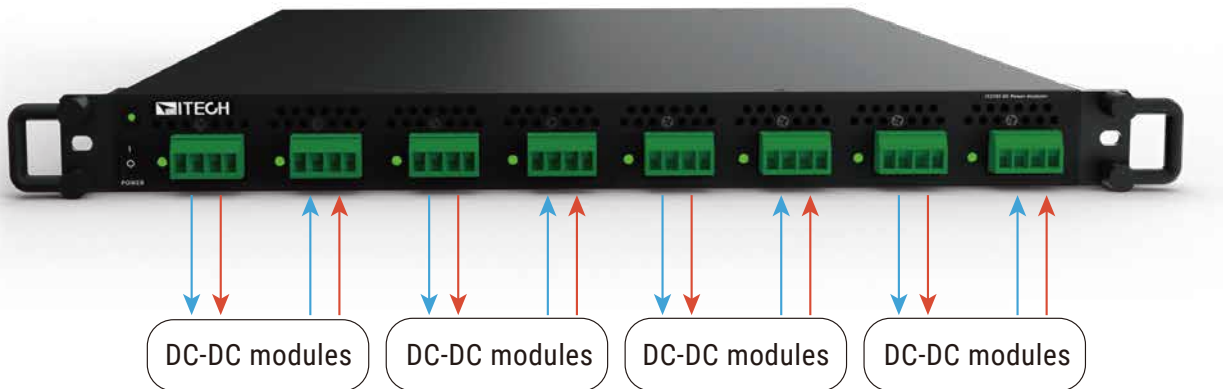
#### Advantages

**01** Compacted size with multiple channels

**02** Synchronize testing to improve efficiency

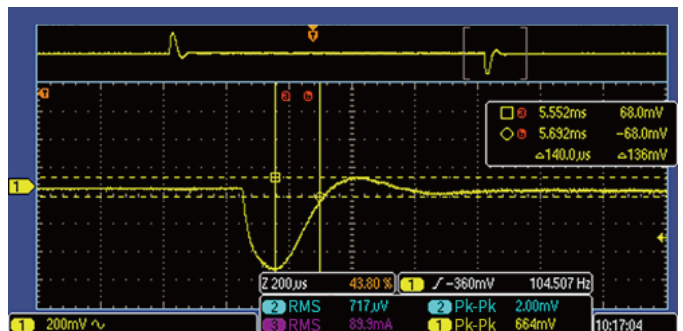
**03** Flexible combination of modules

**04** Power extension by parallel connection, multiple options



### High-speed Dynamic Recovery Time

- IT2700 power module has high-speed dynamic recovery capability. Dynamic recovery time refers to the time required for the power supply output voltage to return to its specified value or steady state when the load changes.
- It maintains stable output, which is particularly important for the test performance of high-precision equipment.
- For high-performance computers, communication equipment and other high-speed electronic products, fast dynamic response helps ensure the best and stable performance of the equipment running at high speeds.
- It has a wider range of applications, such as medical equipment, industrial automation, etc.



60V full voltage, 50%-100% load (50Hz)  
At LOW loop speed, 10%-90% of the steady-state value,  
the recovery time is 140μs

## 05 IT2700 Multi-channel Modular Power System

# Your Power Testing Solution

## IT2700 Multi-channel Modular Power System

Max. 240 Channels In a Single Cabinet



# 240 Channels

Multi-channel control via PC or front panel, single cabinet can output up to 240 channels

Meet the needs for high efficiency, cost reduction and diverse independent testing of production lines

Master-slave parallelization of modules in each unit, synchronization error <5μs

## Coupling/Group - Channel Grouping Function

Controlled by LAN, no limit of channels

Group function supports grouping across frames.

| System       |         |         |        | Status  |         |       |     |
|--------------|---------|---------|--------|---------|---------|-------|-----|
| Channel Name | Channel | Model   | Status | Voltage | Current | Power | Ph  |
| Group 1      |         |         |        |         |         |       |     |
| PS_1:CH1     | 1       | IT27300 | OFF    | 0.0028V | 0.0023A | 0.00W | Cur |
| PS_2:CH1     | 1       | IT27300 | OFF    | 0.0004V | 0.0042A | 0.00W | Cur |
| Group 3      |         |         |        |         |         |       |     |
| PS_1:CH2     | 2       | IT27100 | OFF    | 0.0039V | 0.0052A | 0.00W | Cur |
| PS_2:CH2     | 2       | IT27100 | OFF    | 0.0041V | 0.0033A | 0.00W | Cur |
| Group 2      |         |         |        |         |         |       |     |
| PS_1:CH3     | 3       | IT27500 | OFF    | 0.0055V | 0.0053A | 0.00W | Cur |
| PS_1:CH4     | 4       | IT27700 | OFF    | 0.0009V | 0.0047A | 0.00W | Cur |

Control includes setting voltage and current  
|ON by group|Start a function  
|Trigger

The coupling function within the frame allows separate settings for output coupling, protection coupling and Inhibit coupling.

## Motor Testing - Safety Assurance

Inhibit output prohibition provides more complete interlock linkage protection for automated test systems. When external abnormal signals are received, emergency stop and other abnormal protection can be triggered.

IT2700 is equipped with digital IO interface. When the motor runs abnormally, the motor outputs an abnormal signal (high/low) and transmits it to the inhibit terminal of the digital IO, and at the same time controls the power supply to turn off the output, thereby protecting the DUT.

DUT: DC servo motor



Digital IO  
Inhibit terminal



# Your Power Testing Solution

## IT2700 Multi-channel Modular Power System

### Multi-/Single-Output Display

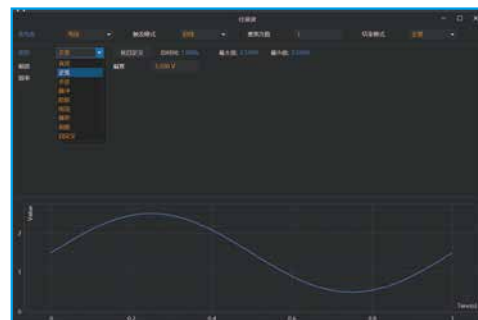
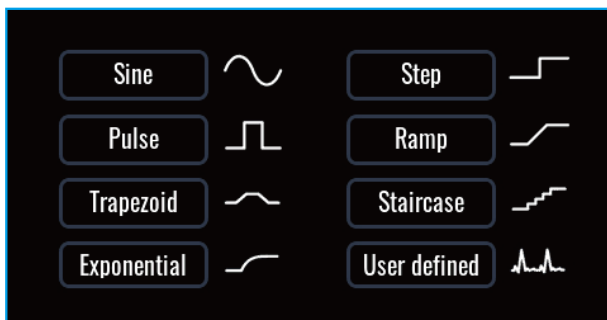
PV2700 switches between an 8-output/4-output overview and a single-output detailed view of power analyzer information. All power modules display real-time output voltage and current measurements and status.



| 设备名称       | 通道 | Status | Voltage  | Current | Power |
|------------|----|--------|----------|---------|-------|
| Group 1    |    |        |          |         |       |
| 模拟设备_1.CH1 | 1  | Fixed  | 10.0077V | 0.0056A | 0.06W |
| 模拟设备_1.CH2 | 2  | Fixed  | 20.0069V | 0.0007A | 0.01W |
| 模拟设备_1.CH3 | 3  | Fixed  | 25.0060V | 0.0016A | 0.04W |
| 模拟设备_1.CH7 | 7  | Fixed  | 50.0051V | 0.0071A | 0.36W |
| 模拟设备_2.CH1 | 1  | Fixed  | 10.0032V | 0.0000A | 0.00W |
| 模拟设备_2.CH2 | 2  | Fixed  | 20.0048V | 0.0001A | 0.00W |
| 模拟设备_2.CH3 | 3  | Fixed  | 25.0004V | 0.0000A | 0.00W |

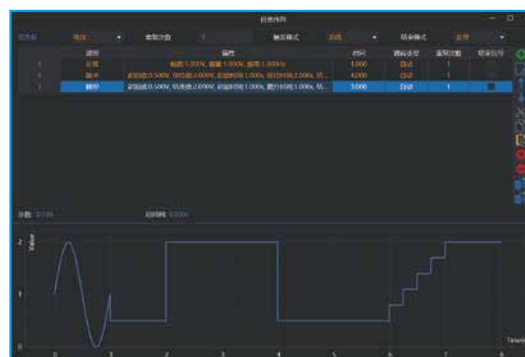
### Arbitrary Waveform (Arb)

- Generate waveforms like steps, ramps, trapezoid, user-defined, sine waves, pulses, staircase, exponential.
- Arb Waveform generator enables biased AC (>0V)



### Arbitrary Waveform Sequence (Arb Sequence)

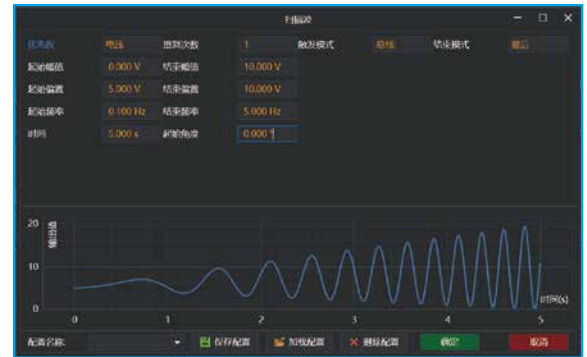
PV2700 can run multiple different arbitrary waveforms one after another, and the ARB sequence can contain any standard ARB type.





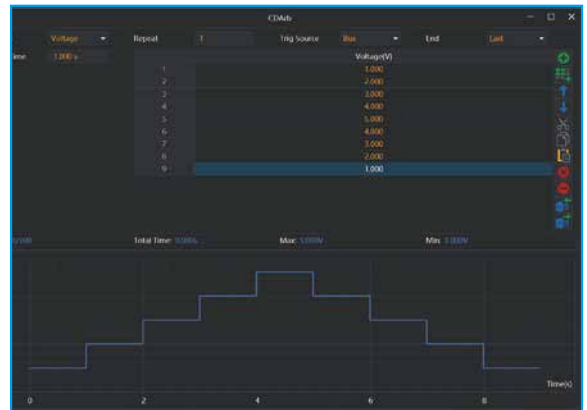
### Sweeping Sine Wave (Sweep)

- Support sine wave amplitude, bias and frequency sweeps
- Be used to evaluate the stability, efficiency and heating of the DUT
- Available for power supply, bidirectional power supply, and load modules



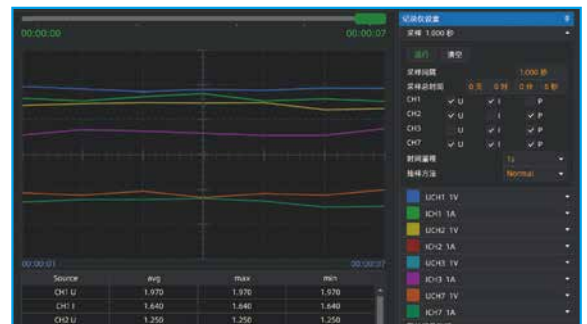
### Constant Dwell Arbitrary Waveforms

- Supports users to import captured waveforms, and all points share the same dwell time. CDARB (const dwell arb) is a digital simulation function. Users can replay the sampled voltage or current, power, and resistance waveforms at equal intervals. CDARB supports importing up to 8,000 points with customizable dwell time and can be used in conjunction with the recorder. One for recording data and the other for playback data. Constant dwell time arbitrary waveform, which can be used by users to reproduce arbitrary waveforms.
- Time intervals are equal, and the default setting is the fastest slope.



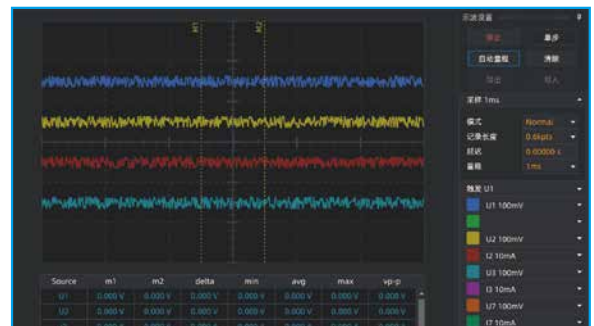
### Data Recording Display

PV2700 can record and display the average, minimum and maximum values of voltage, current and power over a period of time. The maximum frequency is 50kHz, and the measurement results can be calculated by adjusting the markers. The measurement results include maximum value, minimum value, average value, peak-to-peak value, ampere-hour, watt-hour and interval time.



### Oscilloscope Display

PV2700 can capture up to 16 output voltage and/or current waveforms simultaneously, and can display 6 waveforms simultaneously, with a frequency of up to 200kHz, a maximum of 600kpts., and a resolution of up to 16 bits. The measurement results can be calculated by adjusting the markers. The measurement results include maximum value, minimum value, average value, peak-to-peak value, interval time, etc. It supports common oscilloscope functions such as triggering, rolling and single capture.



# Your Power Testing Solution

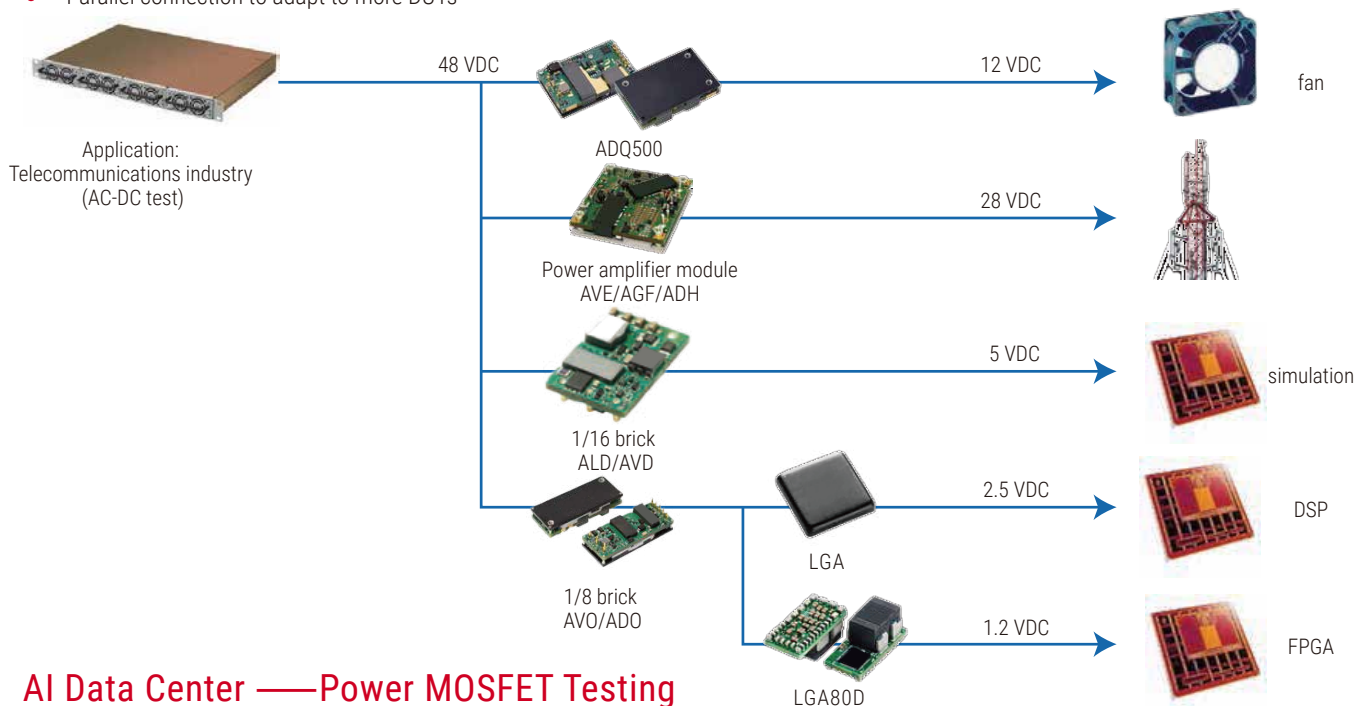
## IT2700 Multi-channel Modular Power System

### 48V System - 5G Communication Power Supply, Data Center

- The communications industry uses 48V as the standard voltage
- 5G communications require the use of Massive MIMO technology. The AAU single-sector output power of 5G base stations increases from 4G's 40W and 80W to 200W or even higher.

#### Advantages tested with IT2700

- IT2700 bidirectional power module can simulate batteries and conduct multi-channel power supply tests
- Regenerative load modules can be used for aging test
- Parallel connection to adapt to more DUTs

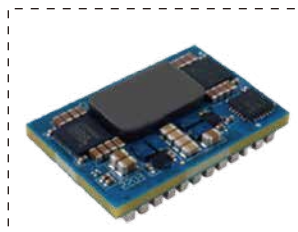


### AI Data Center —Power MOSFET Testing

As the demand for cloud computing, artificial intelligence applications, and high-power processors and accelerators continues to grow, data centers continue to evolve to accommodate new high-power needs, including microprocessors, GPUs, FPGAs, and ASICs requiring higher power levels. The power consumption of advanced processors, including Intel's "Sky Lake" and AMD's "Rome", has also risen to 230-300W, and Nvidia's GPU power consumption will climb to about 600W.

#### Advantages tested with IT2700

- Compact
- Multiple channels
- Current and power extended in parallel/serial connection



DC/DC power module, up to 300W continuous power  
The module supports input voltages up to 60V

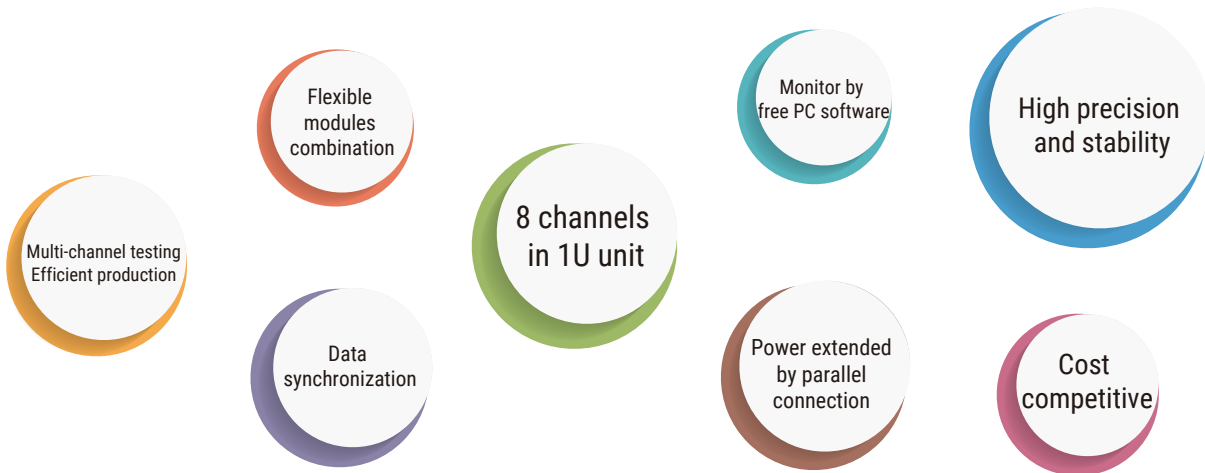


24V to 60V, 15A, can be connected in parallel  
Electric fuse solution

# Your Power Testing Solution

## IT2700 Multi-channel Modular Power System

### Advantages Of Production Line Aging Test



### Rack Mount Kit

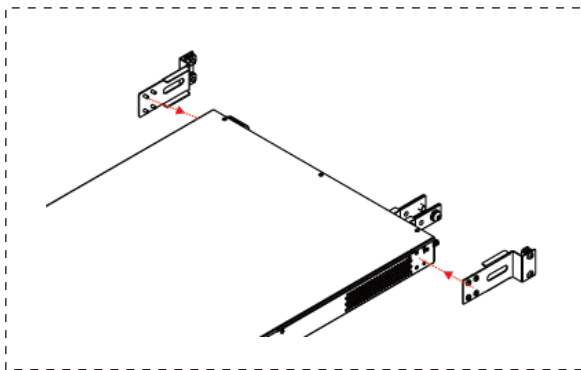
It can be mounted on standard 19-inch cabinets.

When the IT2702/IT2704 is mounted on an ITECH cabinet, choose the Rack Mount Kit: IT-E157A.

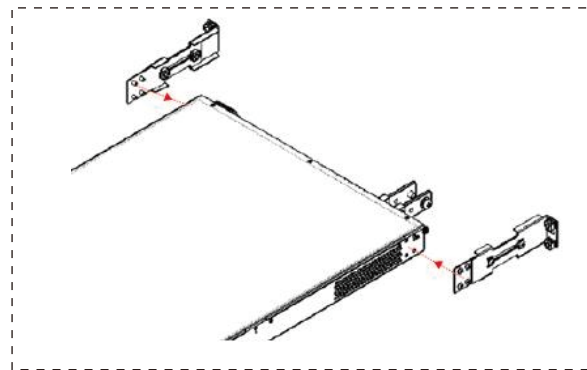
When the IT2702/IT2704 is mounted on a non-ITECH cabinet, choose the accessory: IT-E157B, no tray is required, suitable for cabinets with a mounting depth of 700~907mm.

When the IT2703 is mounted to an ITECH cabinet, select the top shelf kit: IT-E157C.

When IT2703 is mounted to a non-ITECH cabinet, select kit: IT-E157D, no tray required, suitable for cabinets with a mounting depth of 700~907mm..



IT-E157A Rear mounting handle for ITECH cabinet.



IT-E157B Rear mounting handle for non-ITECH cabinets.

\* Note: Front mounting handles are standard for IT2702/IT2704 frames and optional for IT2703, not shown in the picture above.

# Your Power Testing Solution

## IT2700 Multi-channel Modular Power System

| IT2702/IT2704                    |           |                        |
|----------------------------------|-----------|------------------------|
| AC input                         | voltage   | Single phase 100V~380V |
|                                  | frequency | 50/60Hz                |
| Max. AC apparent power           |           | 2.3kVA                 |
| Max. AC current <sup>*1</sup>    |           | 12.5Aac                |
| Max. efficiency                  |           | 95%                    |
| PF                               |           | 0.99                   |
| DC component                     |           | ≤0.2A                  |
| Current harmonic                 |           | ≤3%                    |
| Communication interface          |           | USB/LAN/CAN/Digital IO |
| Program response                 |           | 0.1ms                  |
| Max. channels                    |           | 8                      |
| Working temperature              |           | 0~40°C                 |
| Store temperature                |           | -10°C~70°C             |
| Protection level                 |           | IP20                   |
| Withstand voltage (AC to ground) |           | 3500Vdc                |
| Cooling                          |           | fan                    |
| Dimension                        |           | 580mm*437mm*43.5mm     |
| N.W.                             |           | 9kg                    |

\*1 The AC current is limited to 12.5Aac. When the mains voltage is low, power may be limited. For example: single-phase mains, phase voltage 100Vac, the power is:  $P = 100\text{Vac} * 12.5\text{Aac} = 1250\text{VA}$

\*IT2702 Mainframe can be configured with (bidirectional) power modules or regenerative load modules, whereas IT2704 mainframe supports regenerative load modules only. The two mainframe share the same specifications.

| IT2703                           |           |                        |
|----------------------------------|-----------|------------------------|
| AC input                         | voltage   | Single phase 100V~240V |
|                                  | frequency | 50/60Hz                |
| Max. AC apparent power           |           | 1.8kVA                 |
| Max. AC current <sup>*1</sup>    |           | 10Aac                  |
| Max. efficiency                  |           | 95%                    |
| PF                               |           | 0.99                   |
| DC component                     |           | ≤0.2A                  |
| Current harmonic                 |           | ≤3%                    |
| Communication interface          |           | USB/LAN/CAN/Digital IO |
| Program response                 |           | 0.1ms                  |
| Max. channels                    |           | 6                      |
| Display                          |           | 4.28"                  |
| Display resolution               |           | 800*200                |
| Working temperature              |           | 0~40°C                 |
| Store temperature                |           | -10°C~70°C             |
| Protection level                 |           | IP20                   |
| Withstand voltage (AC to ground) |           | 3500Vdc                |
| Cooling                          |           | fan                    |
| Dimension                        |           | 580mm*437mm*43.5mm     |
| N.W.                             |           | 10kg                   |

\*1 The AC current is limited to 10Aac. When the mains voltage is low, power may be limited. For example: single-phase mains, phase voltage 100Vac, the power is:  $P = 100\text{Vac} * 10\text{Aac} = 1000\text{VA}$

# Your Power Testing Solution

## IT2700 Multi-channel Modular Power System

|                                     |                         | IT27153/IT27153R   | IT27134/IT27134R   |
|-------------------------------------|-------------------------|--------------------|--------------------|
| Rated values                        | voltage                 | 0~20V              | 0~30V              |
|                                     | current                 | 0~50A              | 0~15A              |
|                                     | power                   | 0~500W             | 0~200W             |
|                                     | series IR (CV priority) | 0~1Ω               | 0~1Ω               |
| Setup resolution                    | voltage                 | 0.001V             | 0.001V             |
|                                     | current                 | 0.001A             | 0.001A             |
|                                     | power                   | 0.01W              | 0.01W              |
|                                     | series IR (CV priority) | 0.0001Ω            | 0.0001Ω            |
| Readback resolution                 | voltage                 | 0.0001V            | 0.0001V            |
|                                     | current                 | 0.0001A            | 0.0001A            |
|                                     | power                   | 0.01W              | 0.01W              |
| Set accuracy                        | voltage                 | ≤0.02% + 0.02%FS   | ≤0.02% + 0.02%FS   |
|                                     | current                 | ≤0.05% + 0.05%FS   | ≤0.05% + 0.05%FS   |
|                                     | power                   | ≤0.1% + 0.2%FS     | ≤0.1% + 0.2%FS     |
|                                     | series IR (CV priority) | ≤1%FS              | ≤1%FS              |
| Readback accuracy                   | voltage                 | ≤0.02% + 0.02%FS   | ≤0.02% + 0.02%FS   |
|                                     | current                 | ≤0.05% + 0.05%FS   | ≤0.05% + 0.05%FS   |
|                                     | power                   | ≤0.1% + 0.2%FS     | ≤0.1% + 0.2%FS     |
| Voltage ripple <sup>*1</sup>        | Vpeak                   | ≤30mVpp            | ≤30mVpp            |
|                                     | RMS                     | ≤5mV               | ≤5mV               |
| Setup temperature coefficient       | voltage                 | ≤20ppm/°C          | ≤20ppm/°C          |
|                                     | current                 | ≤30ppm/°C          | ≤30ppm/°C          |
| Readback temperature coefficient    | voltage                 | ≤20ppm/°C          | ≤20ppm/°C          |
|                                     | current                 | ≤30ppm/°C          | ≤30ppm/°C          |
| Rise time(no load) <sup>*4</sup>    | voltage                 | ≤10ms              | ≤10ms              |
| Rise time(full load))               | voltage                 | ≤20ms              | ≤20ms              |
| Rise time(no load)                  | voltage                 | ≤0.5s              | ≤0.5s              |
| Rise time(full load)                | voltage                 | ≤50ms              | ≤10ms              |
| Dynamic response time <sup>*2</sup> | voltage                 | ≤1ms               | ≤1ms               |
| Power regulation                    | voltage                 | ≤0.005% + 0.005%FS | ≤0.005% + 0.005%FS |
|                                     | current                 | ≤0.015% + 0.015%FS | ≤0.015% + 0.015%FS |
| Load regulation                     | voltage <sup>*3</sup>   | ≤0.005% + 0.005%FS | ≤0.005% + 0.005%FS |
|                                     | current                 | ≤0.015% + 0.015%FS | ≤0.015% + 0.015%FS |
| Output protection                   | OCP                     | 51A                | 15.3A              |
|                                     | OVP                     | 20.4V              | 30.6V              |
|                                     | OPP                     | 510W               | 204W               |
| Sense                               |                         | ≤2V                | ≤3V                |
| Isolation(DC to ground)             |                         | 800Vdc             | 800Vdc             |
| Working temperature                 |                         | 0~40°C             | 0~40°C             |
| Store temperature                   |                         | -10°C~70°C         | -10°C~70°C         |
| Protection level                    |                         | IP20               | IP20               |
| Cooling                             |                         | fan                | fan                |
| Dimension                           |                         | 320mm*100mm*40mm   | 320mm*50mm*40mm    |
| N.W.                                |                         | 1.0kg              | 0.6kg              |

1. For output voltages ≤ 0.5 V, ripple (peak-to-peak and RMS) doubles

2. From 10% of rated current to 90% of rated current

3. In Sense (remote sense) mode

4. Voltage rise time: 10% → 90% of rated voltage; voltage fall time: 90% → 10% of rated voltage



# Your Power Testing Solution

## IT2700 Multi-channel Modular Power System

|                                     |                         | IT27135/IT27135R   | IT27137/IT27137R   |
|-------------------------------------|-------------------------|--------------------|--------------------|
| Rated values                        | voltage                 | 0~60V              | 0~150V             |
|                                     | current                 | 0~10A              | 0~5A               |
|                                     | power                   | 0~200W             | 0~200W             |
|                                     | series IR (CV priority) | 0~1Ω               | 0~1Ω               |
| Setup resolution                    | voltage                 | 0.001V             | 0.01V              |
|                                     | current                 | 0.001A             | 0.001A             |
|                                     | power                   | 0.01W              | 0.01W              |
|                                     | series IR (CV priority) | 0.0001Ω            | 0.0001Ω            |
| Readback resolution                 | voltage                 | 0.0001V            | 0.0001V            |
|                                     | current                 | 0.0001A            | 0.0001A            |
|                                     | power                   | 0.01W              | 0.01W              |
| Set accuracy                        | voltage                 | ≤0.02% + 0.02%FS   | ≤0.02% + 0.02%FS   |
|                                     | current                 | ≤0.05% + 0.05%FS   | ≤0.05% + 0.05%FS   |
|                                     | power                   | ≤0.1% + 0.2%FS     | ≤0.1% + 0.2%FS     |
|                                     | series IR (CV priority) | ≤1%FS              | ≤1%FS              |
| Readback accuracy                   | voltage                 | ≤0.02% + 0.02%FS   | ≤0.02% + 0.02%FS   |
|                                     | current                 | ≤0.05% + 0.05%FS   | ≤0.05% + 0.05%FS   |
|                                     | power                   | ≤0.1% + 0.2%FS     | ≤0.1% + 0.2%FS     |
| Voltage ripple <sup>*1</sup>        | Vpeak                   | ≤60mVpp            | ≤150mVpp           |
|                                     | RMS                     | ≤10mV              | ≤15mV              |
| Setup temperature coefficient       | voltage                 | ≤20ppm/°C          | ≤20ppm/°C          |
|                                     | current                 | ≤30ppm/°C          | ≤30ppm/°C          |
| Readback temperature coefficient    | voltage                 | ≤20ppm/°C          | ≤20ppm/°C          |
|                                     | current                 | ≤30ppm/°C          | ≤30ppm/°C          |
| Rise time(no load) <sup>*4</sup>    | voltage                 | ≤10ms              | ≤10ms              |
| Rise time(full load))               | voltage                 | ≤20ms              | ≤20ms              |
| Rise time(no load)                  | voltage                 | ≤0.5s              | ≤0.5s              |
| Rise time(full load)                | voltage                 | ≤10ms              | ≤10ms              |
| Dynamic response time <sup>*2</sup> | voltage                 | ≤1ms               | ≤1ms               |
| Power regulation                    | voltage                 | ≤0.005% + 0.005%FS | ≤0.005% + 0.005%FS |
|                                     | current                 | ≤0.015% + 0.015%FS | ≤0.015% + 0.015%FS |
| Load regulation                     | voltage <sup>*3</sup>   | ≤0.005% + 0.005%FS | ≤0.005% + 0.005%FS |
|                                     | current                 | ≤0.015% + 0.015%FS | ≤0.015% + 0.015%FS |
| Output protection                   | OCP                     | 10.2A              | 5.1A               |
|                                     | OVP                     | 61.2V              | 153V               |
|                                     | OPP                     | 204W               | 204W               |
| Sense                               |                         | ≤6V                | ≤15V               |
| Isolation(DC to ground)             |                         | 800Vdc             | 800Vdc             |
| Working temperature                 |                         | 0~40°C             | 0~40°C             |
| Store temperature                   |                         | -10°C~70°C         | -10°C~70°C         |
| Protection level                    |                         | IP20               | IP20               |
| Cooling                             |                         | fan                | fan                |
| Dimension                           |                         | 320mm*50mm*40mm    | 320mm*50mm*40mm    |
| N.W.                                |                         | 0.6kg              | 0.6kg              |

1.For output voltages ≤ 0.5 V, ripple (peak-to-peak and RMS) doubles

2.From 10% of rated current to 90% of rated current

3.In Sense (remote sense) mode

4.Voltage rise time: 10% → 90% of rated voltage; voltage fall time: 90% → 10% of rated voltage

# Your Power Testing Solution

## IT2700 Multi-channel Modular Power System

|                                     |                                     | IT27353/IT27353R       | IT27334/IT27334R       |
|-------------------------------------|-------------------------------------|------------------------|------------------------|
| Rated values                        | voltage                             | 0~20V                  | 0~30V                  |
|                                     | current                             | -50A~50A               | -15A~15A               |
|                                     | power                               | -500W~500W             | -200W~200W             |
|                                     | series IR (CV priority)             | 0~1Ω                   | 0~1Ω                   |
|                                     | load IR (CC priority)               | 0.01Ω~100Ω             | 0.02Ω~200Ω             |
| Setup resolution                    | voltage                             | 0.001V                 | 0.001V                 |
|                                     | current                             | 0.001A                 | 0.001A                 |
|                                     | power                               | 0.01W                  | 0.01W                  |
|                                     | series IR (CV priority)             | 0.0001Ω                | 0.0001Ω                |
|                                     | load IR (CC priority)               | 0.01Ω                  | 0.01Ω                  |
| Readback resolution                 | voltage                             | 0.0001V                | 0.0001V                |
|                                     | current                             | 0.0001A                | 0.0001A                |
|                                     | power                               | 0.01W                  | 0.01W                  |
| Set accuracy                        | voltage                             | ≤0.02% + 0.02%FS       | ≤0.02% + 0.02%FS       |
|                                     | current                             | ≤0.05% + 0.05%FS       | ≤0.05% + 0.05%FS       |
|                                     | power                               | ≤0.1% + 0.2%FS         | ≤0.1% + 0.2%FS         |
|                                     | series IR (CV priority)             | ≤1%FS                  | ≤1%FS                  |
|                                     | load IR (CC priority) <sup>*1</sup> | (Vin/Rset)*0.5%+0.5%FS | (Vin/Rset)*0.5%+0.5%FS |
| Readback accuracy                   | voltage                             | ≤0.02% + 0.02%FS       | ≤0.02% + 0.02%FS       |
|                                     | current                             | ≤0.05% + 0.05%FS       | ≤0.05% + 0.05%FS       |
|                                     | power                               | ≤0.1% + 0.2%FS         | ≤0.1% + 0.2%FS         |
| Voltage ripple <sup>*2</sup>        | Vpeak                               | ≤30mVpp                | ≤30mVpp                |
|                                     | RMS                                 | ≤5mV                   | ≤5mV                   |
| Setup temperature coefficient       | voltage                             | ≤20ppm/°C              | ≤20ppm/°C              |
|                                     | current                             | ≤30ppm/°C              | ≤30ppm/°C              |
| Readback temperature coefficient    | voltage                             | ≤20ppm/°C              | ≤20ppm/°C              |
|                                     | current                             | ≤30ppm/°C              | ≤30ppm/°C              |
| Rise time(no load) <sup>*5</sup>    | voltage                             | ≤10ms                  | ≤10ms                  |
| Rise time(full load)                | voltage                             | ≤20ms                  | ≤20ms                  |
| Rise time(no load)                  | voltage                             | ≤10ms                  | ≤10ms                  |
| Rise time(full load)                | voltage                             | ≤10ms                  | ≤10ms                  |
| Dynamic response time <sup>*3</sup> | voltage                             | ≤1ms                   | ≤1ms                   |
| Power regulation                    | voltage                             | ≤0.005% + 0.005%FS     | ≤0.005% + 0.005%FS     |
|                                     | current                             | ≤0.015% + 0.015%FS     | ≤0.015% + 0.015%FS     |
| Load regulation                     | voltage <sup>*4</sup>               | ≤0.005% + 0.005%FS     | ≤0.005% + 0.005%FS     |
|                                     | current                             | ≤0.015% + 0.015%FS     | ≤0.015% + 0.015%FS     |
| Output protection                   | OCP                                 | -51A or 51A            | -15.3A or 15.3A        |
|                                     | OVP                                 | 20.4V                  | 30.6V                  |
|                                     | OPP                                 | -510W or 510W          | -204W or 204W          |
| Sense                               |                                     | ≤2V                    | ≤3V                    |
| Isolation(DC to ground)             |                                     | 800Vdc                 | 800Vdc                 |
| Working temperature                 |                                     | 0~40°C                 | 0~40°C                 |
| Store temperature                   |                                     | -10°C~70°C             | -10°C~70°C             |
| Protection level                    |                                     | IP20                   | IP20                   |
| Cooling                             |                                     | fan                    | fan                    |
| Dimension                           |                                     | 320mm*100mm*40mm       | 320mm*50mm*40mm        |
| N.W.                                |                                     | 1.0kg                  | 0.6kg                  |

1.Resistor accuracy – voltage/current ≥ 10% FS

2.For voltages ≤ 0.5 V, ripple (peak-to-peak and RMS) doubles

3.From 10% rated current to 90% rated current

4.In Sense mode

5.Voltage rise time: 10% to 90% of rated voltage; voltage fall time: 90% to 10% of rated voltage

# Your Power Testing Solution

## IT2700 Multi-channel Modular Power System

|                                     |                                     | IT27335/IT27335R       | IT27337/IT27337R       |
|-------------------------------------|-------------------------------------|------------------------|------------------------|
| Rated values                        | voltage                             | 0~60V                  | 0~150V                 |
|                                     | current                             | -10A~10A               | -5A~5A                 |
|                                     | power                               | -200W~200W             | -200W~200W             |
|                                     | series IR (CV priority)             | 0~1Ω                   | 0~1Ω                   |
|                                     | load IR (CC priority)               | 0.06Ω~600Ω             | 0.3Ω~3000Ω             |
| Setup resolution                    | voltage                             | 0.001V                 | 0.01V                  |
|                                     | current                             | 0.001A                 | 0.001A                 |
|                                     | power                               | 0.01W                  | 0.01W                  |
|                                     | series IR (CV priority)             | 0.0001Ω                | 0.0001Ω                |
|                                     | load IR (CC priority)               | 0.01Ω                  | 0.01Ω                  |
| Readback resolution                 | voltage                             | 0.0001V                | 0.0001V                |
|                                     | current                             | 0.0001A                | 0.0001A                |
|                                     | power                               | 0.01W                  | 0.01W                  |
| Set accuracy                        | voltage                             | ≤0.02% + 0.02%FS       | ≤0.02% + 0.02%FS       |
|                                     | current                             | ≤0.05% + 0.05%FS       | ≤0.05% + 0.05%FS       |
|                                     | power                               | ≤0.1% + 0.2%FS         | ≤0.1% + 0.2%FS         |
|                                     | series IR (CV priority)             | ≤1%FS                  | ≤1%FS                  |
|                                     | load IR (CC priority) <sup>*1</sup> | (Vin/Rset)*0.5%+0.5%FS | (Vin/Rset)*0.5%+0.5%FS |
| Readback accuracy                   | voltage                             | ≤0.02% + 0.02%FS       | ≤0.02% + 0.02%FS       |
|                                     | current                             | ≤0.05% + 0.05%FS       | ≤0.05% + 0.05%FS       |
|                                     | power                               | ≤0.1% + 0.2%FS         | ≤0.1% + 0.2%FS         |
| Voltage ripple <sup>*2</sup>        | Vpeak                               | ≤60mVpp                | ≤150mVpp               |
|                                     | RMS                                 | ≤10mV                  | ≤15mV                  |
| Setup temperature coefficient       | voltage                             | ≤20ppm/°C              | ≤20ppm/°C              |
|                                     | current                             | ≤30ppm/°C              | ≤30ppm/°C              |
| Readback temperature coefficient    | voltage                             | ≤20ppm/°C              | ≤20ppm/°C              |
|                                     | current                             | ≤30ppm/°C              | ≤30ppm/°C              |
| Rise time(no load) <sup>*5</sup>    | voltage                             | ≤10ms                  | ≤10ms                  |
| Rise time(full load))               | voltage                             | ≤20ms                  | ≤20ms                  |
| Rise time(no load)                  | voltage                             | ≤10ms                  | ≤10ms                  |
| Rise time(full load)                | voltage                             | ≤10ms                  | ≤10ms                  |
| Dynamic response time <sup>*3</sup> | voltage                             | ≤1ms                   | ≤1ms                   |
| Power regulation                    | voltage                             | ≤0.005% + 0.005%FS     | ≤0.005% + 0.005%FS     |
|                                     | current                             | ≤0.015% + 0.015%FS     | ≤0.015% + 0.015%FS     |
| Load regulation                     | voltage <sup>*4</sup>               | ≤0.005% + 0.005%FS     | ≤0.005% + 0.005%FS     |
|                                     | current                             | ≤0.015% + 0.015%FS     | ≤0.015% + 0.015%FS     |
| Output protection                   | OCP                                 | -10.2A or 10.2A        | -5.1A or 5.1A          |
|                                     | OVP                                 | 61.2V                  | 153V                   |
|                                     | OPP                                 | -204W or 204W          | -204W or 204W          |
| Sense                               |                                     | ≤6V                    | ≤15V                   |
| Isolation(DC to ground)             |                                     | 800Vdc                 | 800Vdc                 |
| Working temperature                 |                                     | 0~40°C                 | 0~40°C                 |
| Store temperature                   |                                     | -10°C~70°C             | -10°C~70°C             |
| Protection level                    |                                     | IP20                   | IP20                   |
| Cooling                             |                                     | fan                    | fan                    |
| Dimension                           |                                     | 320mm*50mm*40mm        | 320mm*50mm*40mm        |
| N.W.                                |                                     | 0.6kg                  | 0.6kg                  |

# 15 IT2700 Multi-channel Modular Power System

1.Resistor accuracy – voltage/current ≥ 10% FS

2.For voltages ≤ 0.5 V, ripple (peak-to-peak and RMS) doubles

3.From 10% rated current to 90% rated current

4.In Sense mode

5.Voltage rise time: 10% to 90% of rated voltage; voltage fall time: 90% to 10% of rated voltage

# Your Power Testing Solution

## IT2700 Multi-channel Modular Power System

|                                  |                       | IT27553/IT27553R       | IT27534/IT27534R       |
|----------------------------------|-----------------------|------------------------|------------------------|
| Rated values                     | voltage               | 0.05V~20V              | 0.03V~30V              |
|                                  | current               | 0~50A                  | 0~15A                  |
|                                  | power                 | 0~500W                 | 0~200W                 |
|                                  | resistance *          | 0.01Ω~100Ω             | 0.02Ω~200Ω             |
|                                  | MOV.                  | 0.8V at 50A            | 0.3V at 15A            |
|                                  | input leakage current | 0.001A                 | 0.001A                 |
| Setup resolution                 | voltage               | 0.001V                 | 0.001V                 |
|                                  | current               | 0.001A                 | 0.001A                 |
|                                  | power                 | 0.01W                  | 0.01W                  |
|                                  | resistance            | 0.01Ω                  | 0.01Ω                  |
| Readback resolution              | voltage               | 0.0001V                | 0.0001V                |
|                                  | current               | 0.0001A                | 0.0001A                |
|                                  | power                 | 0.01W                  | 0.01W                  |
| Set accuracy                     | voltage               | ≤0.02% + 0.02%FS       | ≤0.02% + 0.02%FS       |
|                                  | current               | ≤0.05% + 0.05%FS       | ≤0.05% + 0.05%FS       |
|                                  | power                 | ≤0.1% + 0.2%FS         | ≤0.1% + 0.2%FS         |
|                                  | resistance *1         | (Vin/Rset)*0.5%+0.5%FS | (Vin/Rset)*0.5%+0.5%FS |
| Readback accuracy                | voltage               | ≤0.02% + 0.02%FS       | ≤0.02% + 0.02%FS       |
|                                  | current               | ≤0.05% + 0.05%FS       | ≤0.05% + 0.05%FS       |
|                                  | power                 | ≤0.1% + 0.2%FS         | ≤0.1% + 0.2%FS         |
| Setup temperature coefficient    | voltage               | ≤20ppm/°C              | ≤20ppm/°C              |
|                                  | current               | ≤30ppm/°C              | ≤30ppm/°C              |
| Readback temperature coefficient | voltage               | ≤20ppm/°C              | ≤20ppm/°C              |
|                                  | current               | ≤30ppm/°C              | ≤30ppm/°C              |
| Dynamic response time            | rise time             | 25A/ms                 | 15A/ms                 |
|                                  | fall time             | 25A/ms                 | 15A/ms                 |
|                                  | dynamic frequency     | 500Hz                  | 500Hz                  |
| Power regulation                 | voltage               | ≤0.005% + 0.005%FS     | ≤0.005% + 0.005%FS     |
|                                  | current               | ≤0.015% + 0.015%FS     | ≤0.015% + 0.015%FS     |
| Load regulation                  | voltage *2            | ≤0.005% + 0.005%FS     | ≤0.005% + 0.005%FS     |
|                                  | current               | ≤0.015% + 0.015%FS     | ≤0.015% + 0.015%FS     |
| Short circuit current            | current               | 52.5A                  | 15.75A                 |
| Input protection                 | OCP                   | 51A                    | 15.3A                  |
|                                  | OVP                   | 20.4V                  | 30.6V                  |
|                                  | OPP                   | 510W                   | 204W                   |
| Input OVP                        |                       | 21V                    | 31.5V                  |
| Sense                            |                       | ≤2V                    | ≤3V                    |
| Isolation(DC to ground)          |                       | 800Vdc                 | 800Vdc                 |
| Working temperature              |                       | 0~40°C                 | 0~40°C                 |
| Store temperature                |                       | -10°C~70°C             | -10°C~70°C             |
| Protection level                 |                       | IP20                   | IP20                   |
| Cooling                          |                       | fan                    | fan                    |
| Dimension                        |                       | 320mm*100mm*40mm       | 320mm*50mm*40mm        |
| N.W.                             |                       | 1.0kg                  | 0.6kg                  |

\*1 resistance accuracy-voltage and current not less than 10%FS

\*2 sense mode

# Your Power Testing Solution

## IT2700 Multi-channel Modular Power System

|                                  |                       | IT27535/IT27535R       | IT27537/IT27537R       |
|----------------------------------|-----------------------|------------------------|------------------------|
| Rated values                     | voltage               | 0.06V~60V              | 0.150V~150V            |
|                                  | current               | 0~10A                  | 0~5A                   |
|                                  | power                 | 0~200W                 | 0~200W                 |
|                                  | resistance *          | 0.06Ω~600Ω             | 0.3Ω~3000Ω             |
|                                  | MOV.                  | 0.6V at 10A            | 1.5V at 5A             |
|                                  | input leakage current | 0.001A                 | 0.001A                 |
| Setup resolution                 | voltage               | 0.001V                 | 0.01V                  |
|                                  | current               | 0.001A                 | 0.001A                 |
|                                  | power                 | 0.01W                  | 0.01W                  |
|                                  | resistance            | 0.01Ω                  | 0.01Ω                  |
| Readback resolution              | voltage               | 0.0001V                | 0.0001V                |
|                                  | current               | 0.0001A                | 0.0001A                |
|                                  | power                 | 0.01W                  | 0.01W                  |
| Set accuracy                     | voltage               | ≤0.02% + 0.02%FS       | ≤0.02% + 0.02%FS       |
|                                  | current               | ≤0.05% + 0.05%FS       | ≤0.05% + 0.05%FS       |
|                                  | power                 | ≤0.1% + 0.2%FS         | ≤0.1% + 0.2%FS         |
|                                  | resistance *1         | (Vin/Rset)*0.5%+0.5%FS | (Vin/Rset)*0.5%+0.5%FS |
| Readback accuracy                | voltage               | ≤0.02% + 0.02%FS       | ≤0.02% + 0.02%FS       |
|                                  | current               | ≤0.05% + 0.05%FS       | ≤0.05% + 0.05%FS       |
|                                  | power                 | ≤0.1% + 0.2%FS         | ≤0.1% + 0.2%FS         |
| Setup temperature coefficient    | voltage               | ≤20ppm/°C              | ≤20ppm/°C              |
|                                  | current               | ≤30ppm/°C              | ≤30ppm/°C              |
| Readback temperature coefficient | voltage               | ≤20ppm/°C              | ≤20ppm/°C              |
|                                  | current               | ≤30ppm/°C              | ≤30ppm/°C              |
| Dynamic response time            | rise time             | 10A/ms                 | 5A/ms                  |
|                                  | fall time             | 10A/ms                 | 5A/ms                  |
|                                  | dynamic frequency     | 500Hz                  | 500Hz                  |
| Power regulation                 | voltage               | ≤0.005% + 0.005%FS     | ≤0.005% + 0.005%FS     |
|                                  | current               | ≤0.015% + 0.015%FS     | ≤0.015% + 0.015%FS     |
| Load regulation                  | voltage *2            | ≤0.005% + 0.005%FS     | ≤0.005% + 0.005%FS     |
|                                  | current               | ≤0.015% + 0.015%FS     | ≤0.015% + 0.015%FS     |
| Short circuit current            | current               | 10.5A                  | 5.25A                  |
| Input protection                 | OCP                   | 10.2A                  | 5.1A                   |
|                                  | OVP                   | 61.2V                  | 153V                   |
|                                  | OPP                   | 204W                   | 204W                   |
| Input OVP                        |                       | 63V                    | 156V                   |
| Sense                            |                       | ≤6V                    | ≤15V                   |
| Isolation(DC to ground)          |                       | 800Vdc                 | 800Vdc                 |
| Working temperature              |                       | 0~40°C                 | 0~40°C                 |
| Store temperature                |                       | -10°C~70°C             | -10°C~70°C             |
| Protection level                 |                       | IP20                   | IP20                   |
| Cooling                          |                       | fan                    | fan                    |
| Dimension                        |                       | 320mm*50mm*40mm        | 320mm*50mm*40mm        |
| N.W.                             |                       | 0.6kg                  | 0.6kg                  |

\*1 resistance accuracy-voltage and current not less than 10%FS

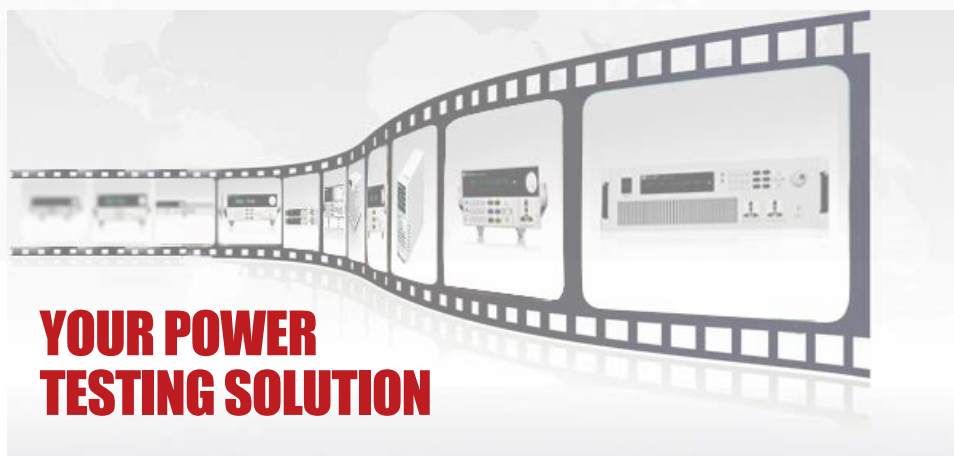
\*2 sense mode

# Your Power Testing Solution

## IT2700 Multi-channel Modular Power System

| IT27814                                 |                     |                                                                                                                                                                                 |                  |                 |                 | IT27814E                                                             |                 |                 |                 |
|-----------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|-----------------|----------------------------------------------------------------------|-----------------|-----------------|-----------------|
| Rated range                             | voltage             | ±6 V                                                                                                                                                                            |                  | ±20 V           |                 | ±6 V                                                                 |                 | ±20 V           |                 |
|                                         | current             | ±3 A                                                                                                                                                                            |                  | ±1 A            |                 | ±3 A                                                                 |                 | ±1 A            |                 |
|                                         | power               | ±20 W                                                                                                                                                                           |                  | ±20 W           |                 | ±20 W                                                                |                 | ±20 W           |                 |
| Load regulation (voltage)               | range               | ±6 V                                                                                                                                                                            |                  | ±20 V           |                 | ±6 V                                                                 |                 | ±20 V           |                 |
|                                         | accuracy            | 150 μV                                                                                                                                                                          |                  | 400 μV          |                 | 600 μV                                                               |                 | 2 mV            |                 |
| Load regulation (current)               | range               | 10mA                                                                                                                                                                            | 100mA            | 1A              | 3A              | 10mA                                                                 | 10mA            | 1A              | 3A              |
|                                         | accuracy            | 1 μA                                                                                                                                                                            | 1 μA             | 50 μA           | 100 μA          | 3 μA                                                                 | 3 μA            | 200 μA          | 400 μA          |
| Voltage setting accuracy                | range               | ±6 V                                                                                                                                                                            |                  | ±20 V           |                 | ±6 V                                                                 |                 | ±20 V           |                 |
|                                         | resolution          | 6 μV                                                                                                                                                                            |                  | 20 μV           |                 | 210 μV                                                               |                 | 700 μV          |                 |
|                                         | accuracy            | ≤0.015%+300 μV                                                                                                                                                                  |                  | ≤0.015%+1 mV    |                 | ≤0.02%+1 mV                                                          |                 | ≤0.02%+3 mV     |                 |
| Current setting accuracy                | range               | 10 mA                                                                                                                                                                           | 100 mA           | 3 A             |                 | 10 mA                                                                | 100 mA          | 3 A             |                 |
|                                         | resolution          | 0.1 μA                                                                                                                                                                          | 1 μA             | 10 μA           |                 | 1 μA                                                                 | 10 μA           | 300 μA          |                 |
|                                         | accuracy            | ≤0.025% + 5 μA                                                                                                                                                                  | ≤0.025% + 10 μA  | ≤0.03% + 250 μA |                 | ≤0.05% + 6 μA                                                        | ≤0.05% + 50 μA  | ≤0.05% + 1.5 mA |                 |
| Voltage measurement accuracy            | range               | ±6 V                                                                                                                                                                            |                  | ±20 V           |                 | ±6 V                                                                 |                 | ±20 V           |                 |
|                                         | resolution          | 6 μV                                                                                                                                                                            |                  | 20 μV           |                 | 210 μV                                                               |                 | 700 μV          |                 |
|                                         | accuracy            | ≤0.015%+300 μV                                                                                                                                                                  |                  | ≤0.015%+1 mV    |                 | ≤0.02%+1 mV                                                          |                 | ≤0.02%+3 mV     |                 |
| Current measurement accuracy            | range               | 10 μA                                                                                                                                                                           | 1 mA             | 100 mA          | 3 A             | 10 μA                                                                | 1 mA            | 100 mA          | 3 A             |
|                                         | resolution          | 100 pA                                                                                                                                                                          | 10 nA            | 1 μA            | 10 μA           | 1 nA                                                                 | 100 nA          | 10 μA           | 300 μA          |
|                                         | accuracy            | ≤0.025% + 8 nA                                                                                                                                                                  | ≤0.025% + 100 nA | ≤0.025% + 10 μA | ≤0.03% + 250 μA | ≤0.05% + 8 nA                                                        | ≤0.05% + 400 nA | ≤0.05% + 40 μA  | ≤0.05% + 1.2 mA |
| Internal resistance setting accuracy    | range               | ±6 V                                                                                                                                                                            |                  | ±20 V           |                 | ±6 V                                                                 |                 | ±20 V           |                 |
|                                         | resolution          | 0.25 mΩ                                                                                                                                                                         |                  | 0.5 mΩ          |                 | 0.5 mΩ                                                               |                 | 0.5 mΩ          |                 |
|                                         | Setting range (R)   | - 40 mΩ ~ 1 Ω                                                                                                                                                                   |                  | - 40 mΩ ~ 1 Ω   |                 | - 40 mΩ ~ 1 Ω                                                        |                 | - 40 mΩ ~ 1 Ω   |                 |
|                                         | Setting accuracy    | 0.1% + 1.5 mΩ                                                                                                                                                                   |                  | 0.1% + 3 mΩ     |                 | 0.1% + 1.5 mΩ                                                        |                 | 0.1% + 3 mΩ     |                 |
| Voltage loop speed                      |                     | The voltage loop has four speed settings: Low, High1, High2, and High3. The corresponding rise times are measured with load capacitances of 0μF / 0μF / 1μF / 7μF respectively. |                  |                 |                 |                                                                      |                 |                 |                 |
|                                         |                     | Low                                                                                                                                                                             | High1            | High2           | High3           | Low                                                                  | High1           | High2           | High3           |
|                                         | 20V Range (0-10V)   | 250 μs                                                                                                                                                                          | 20 μs            | 20 μs           | 120 μs          | 250 μs                                                               | 25 μs           | 35 μs           | 120 μs          |
|                                         | 6V Range (0-4V)     | 200 μs                                                                                                                                                                          | 15 μs            | 15 μs           | 40 μs           | 160 μs                                                               | 20 μs           | 25 μs           | 50 μs           |
|                                         |                     | Rise time ( ≤0.1% )                                                                                                                                                             |                  |                 |                 |                                                                      |                 |                 |                 |
|                                         | 20V Range (0-10V)   | 450 μs                                                                                                                                                                          | 75 μs            | 65 μs           | 220 μs          | 450 μs                                                               | 75 μs           | 65 μs           | 220 μs          |
|                                         | 6V Range (0-4V)     | 450 μs                                                                                                                                                                          | 55 μs            | 45 μs           | 120 μs          | 450 μs                                                               | 55 μs           | 45 μs           | 120 μs          |
| Current loop speed                      | range               | 10 mA                                                                                                                                                                           | 100 mA           | 1 A             | 3 A             | 10 mA                                                                | 100 mA          | 1 A             | 3 A             |
|                                         | Rise time (10%-90%) | 5 μs                                                                                                                                                                            | 4.5 μs           | 3.7 μs          | 3.7 μs          | 10 μs                                                                | 10 μs           | 14 μs           | 15 μs           |
|                                         | Rise time ( ≤0.1% ) | 30 μs                                                                                                                                                                           | 30 μs            | 30 μs           | 30 μs           | 30 μs                                                                | 30 μs           | 30 μs           | 30 μs           |
| Other characteristics                   |                     |                                                                                                                                                                                 |                  |                 |                 |                                                                      |                 |                 |                 |
| Voltage output noise (10 Hz to 20 MHz ) |                     | 12mVp-p / 1.2mVrms                                                                                                                                                              |                  |                 |                 |                                                                      |                 |                 |                 |
| CV mode dynamic response recovery time  |                     | Under sense mode, with a 150μF load capacitor (ESR = 50mΩ), current rise time is 10μs                                                                                           |                  |                 |                 |                                                                      |                 |                 |                 |
|                                         |                     | 20V range, 0.8A current step, voltage recovers to ±10mV within ≤35μs                                                                                                            |                  |                 |                 | 20V range, 0.8A current step, voltage recovers to ±20mV within ≤40μs |                 |                 |                 |
|                                         |                     | 6V range, 1.4A current step, voltage recovers to ±20mV within ≤35μs                                                                                                             |                  |                 |                 | 6V range, 1.4A current step, voltage recovers to ±20mV within ≤55μs  |                 |                 |                 |
| CC mode dynamic response recovery time  |                     | 3A setting, voltage step 1-4V, current recovers to 5mA in 16μs                                                                                                                  |                  |                 |                 | 3A setting, voltage step 1-4V, current recovers to 5mA in 35μs       |                 |                 |                 |
|                                         |                     | 1A setting, voltage step 0.5-0V, current recovers to 10mA in 10μs                                                                                                               |                  |                 |                 | 1A setting, voltage step 0.5-0V, current recovers to 10mA in 25μs    |                 |                 |                 |





This information is subject to change without notice. For more information, please contact ITECH.

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