

# Component Parameter Test Instruments

## I. TH283X Series Compact LCR Meter

### Features

- Low cost, high performance, small size
- 4.3 inch TFT LCD Display
- Soft power switch
- Selectable Chinese-English operation language
- Max. 200kHz test frequency
- Max. 6 digit reading resolution
- 10mVrms-2.0Vrms programmable signal level, built-in  $0 - \pm 5V/50mA$  bias source
- DCR, 50mV-2V programmable test level, resolution  $10\mu\Omega$
- Ls-Rd / Lp-Rd Function (L, Rd display simultaneously) \*
- Highest test speed 13ms/time
- Selectable  $30\Omega/100\Omega$  signal source impedance
- V/I monitor and auto level adjustment function
- Built-in comparator, 10 bins sorting and count function
- File storage and firmware update through U disk
- RS232, RS485, USB, HANDLER, GPIB interface

\* Rd means DCR.

### Applications

- Passive components:  
Evaluation of Impedance Parameters for Capacitors, Inductors, Cores, Resistors, piezoelectric devices, Transformers, Chip Components, and Network Components



|          |          |            |          |
|----------|----------|------------|----------|
| RS232    | USB HOST | USB DEVICE | HANDLER  |
| standard | standard | standard   | standard |
| GPIB     | RS485    | SCANNER    |          |
| option   | option   | option     |          |

### TH283X Series

Rack mount (mm): 215(W) x 88(H) x 335(D)  
Dimension (mm): 235(W) x 105(H) x 360(D)  
Net weight: 3.6 kg

- Other components:  
Impedance evaluation of printed circuit boards, relays, switches, cables, batteries, etc.

### Specifications

|                                                                        |                            |                                                                                                                                                 |                                  |
|------------------------------------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Model                                                                  |                            | TH2830                                                                                                                                          | TH2832                           |
| Basic measurement accuracy<br>(See details in technical specification) | LCRZ                       | 0.05%                                                                                                                                           | 0.05%                            |
|                                                                        | DCR                        | 0.1%                                                                                                                                            |                                  |
|                                                                        | Calibration condition      | Warm up time: ≥ 30 minutes ; Environment temperature: 23±5°C<br>Signal level: 1Vrms ; Corretion: after OPEN, SHORT<br>Testing cable length: 0 m |                                  |
| Test signal frequency                                                  |                            | 20Hz-100kHz , Continuous                                                                                                                        | 20Hz-200kHz, Continuous          |
| Signal source output impedance                                         |                            | Selectable 30Ω, 100Ω, ±1% @1kHz                                                                                                                 |                                  |
| AC test signal level                                                   | Normal                     | 10mV—2Vrms                                                                                                                                      |                                  |
|                                                                        |                            | Resolution: 10mV,<br>Accuracy: 10% x setting voltage+2mV                                                                                        |                                  |
|                                                                        |                            | 100μA—20mArms                                                                                                                                   |                                  |
|                                                                        |                            | Resolution: 0.1mA                                                                                                                               |                                  |
|                                                                        | Constant level<br>(ALC ON) | -----                                                                                                                                           | 20mV—1Vrms                       |
|                                                                        |                            | -----                                                                                                                                           | Resolution: 10mV , Accuracy: 10% |
|                                                                        |                            | -----                                                                                                                                           | 200μA—10mArms                    |
|                                                                        |                            | -----                                                                                                                                           | Resolution: 0.1mA                |
| DCR test signal level                                                  |                            | 1V DC                                                                                                                                           | 50mV—2V DC                       |
|                                                                        |                            | -----                                                                                                                                           | Resolution: 0.5mV                |

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## I. TH283X Series Compact LCR Meter

|                              |                                                                                                                                                                                                                                                                                                                            |                                               |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| DC bias voltage source       | -----                                                                                                                                                                                                                                                                                                                      | 0V— ± 5V                                      |
|                              | -----                                                                                                                                                                                                                                                                                                                      | Resolution: 0.5mV, Accuracy: 1%               |
|                              | -----                                                                                                                                                                                                                                                                                                                      | 0mA—± 50mA                                    |
|                              | -----                                                                                                                                                                                                                                                                                                                      | Resolution: 0.5μA                             |
| Test parameters              | Z ,  Y , C, L, X, B, R, G, D, Q, θ, DCR                                                                                                                                                                                                                                                                                    |                                               |
| DCR display range            | 0.00001 Ω – 99.9999 MΩ                                                                                                                                                                                                                                                                                                     |                                               |
| LCR parameters display range | Z , R, X    0.00001Ω — 99.9999MΩ<br> Y , G, B    0.00001μs — 99.9999s<br>C            0.00001pF — 9.99999F<br>L            0.00001μH — 99.9999kH<br>D            0.00001 — 9.99999<br>Q            0.00001 — 99999.9<br>θ(DEG)    -179.999° — 179.999°<br>θ(RAD)    -3.14159 — 3.14159<br>Δ%          -999.999% — 999.999% |                                               |
| Display digits               | 6                                                                                                                                                                                                                                                                                                                          | 6                                             |
| Measurement time (≥10 kHz)   | Fast: 75 meas/sec(13ms), Medium:11 meas/sec(90 ms), Slow: 2.7meas/sec(370 ms)                                                                                                                                                                                                                                              |                                               |
| Equivalent circuit           | Serial, Parallel                                                                                                                                                                                                                                                                                                           |                                               |
| Range mode                   | Auto, Hold                                                                                                                                                                                                                                                                                                                 |                                               |
| Trigger mode                 | Internal, Manual, External, Bus                                                                                                                                                                                                                                                                                            |                                               |
| Average time                 | 1–255                                                                                                                                                                                                                                                                                                                      |                                               |
| Correction                   | Open, Short, Load                                                                                                                                                                                                                                                                                                          |                                               |
| Math operation               | Direct reading, ΔABS, Δ%                                                                                                                                                                                                                                                                                                   |                                               |
| Trigger delay time setting   | 0 - 60.000s, 1ms steps                                                                                                                                                                                                                                                                                                     |                                               |
| Step delay time setting      | 0 - 60.000s, 1ms steps                                                                                                                                                                                                                                                                                                     |                                               |
| List Sweep                   | ·10 points list sweep<br>·Frequency, AC voltage/current, internal/ external bias voltage/ current can be swept.<br>·Each sweep point can be sorted separately.                                                                                                                                                             |                                               |
| Comparator function          | 10 bins, BIN1–BIN9, NG, AUX                                                                                                                                                                                                                                                                                                |                                               |
|                              | Bin count function                                                                                                                                                                                                                                                                                                         |                                               |
|                              | PASS, FAIL LED display on front panel                                                                                                                                                                                                                                                                                      |                                               |
| Built-in Storage             | Internal 100 LCRZ instrument setting files, 201 times test results                                                                                                                                                                                                                                                         |                                               |
| USB Storage                  | Instrument setting files , measurement result CSV files, printed screen (GIF format)                                                                                                                                                                                                                                       |                                               |
| Interface                    | Control interface                                                                                                                                                                                                                                                                                                          | HANDLER                                       |
|                              | Communication interface                                                                                                                                                                                                                                                                                                    | USB HOST, RS232C, RS485(option), GPIB(option) |
|                              | Storage interface                                                                                                                                                                                                                                                                                                          | USB DEVICE (U-disk storage)                   |

## Standard Accessories

Three core power cord

TH26010 Gold-plated short circuit board

TH26011CS 4 terminal pair Kelvin test clip leads

TH26048A Four-terminal test fixture