

Component Parameter Test Instruments

I. TH2827 Series of Precision LCR Meter

Features

- 4.3-inch TFT LCD display
- Selectable Chinese and English operation interfaces
- Maximum test frequency of 1MHz, resolution of 10mHz
- Transformer parameter test function
- Maximum test speed: 13ms/time
- Automatic level control (ALC) function for V and I
- Test signal level monitor function for V and I
- Included interior DC bias source
- External DC bias source of large current
- 10-point list sweep function
- Selectable internal resistance of 30Ω, 50Ω and 100Ω
- Built-in comparator: 10-bin sorting and bin counter
- Internal file storage and external USB-disk file storage
- Test data can be saved to USB-disk directly
- RS232C, USB, LAN, HANDLER, GPIB, DCI interface

Applications

- **Passive component:**
Impedance parameter estimation and performance analysis of capacitor, inductor, magnetic core, resistor, piezoelectric devices, transformers, chip components and network components
- **Semiconductor component**
Parasitic parameter test and analysis of LED driver integrated circuit
C-VDC features of varactors
Parasitic parameter analysis of transistors or integrated circuit
- **Other components**
Impedance assessment of printed circuit boards, relays, switches, cables, batteries

Specifications

Display			800×RGB×480 4.3-inch TFT LCD display
Frequency of test signal	TH2827A		20Hz—300kHz
	TH2827C		20Hz—1MHz
	Minimum resolution		10mHz, 4-digit frequency input
	Accuracy		0.01%
AC Level	Voltage range of test signal		5mV—2Vrms
	Minimum resolution of voltage		100μV, 3-digit input
	Accuracy	ALC ON	10% x set voltage + 2mV
		ALC OFF	6% x set voltage + 2mV
	Current range of test signal		100μA—20mA
	Minimum resolution of current		1μA, 3-digit input
	Accuracy	ALC ON	10% x set current + 20μA
		ALC OFF	6% x set voltage + 20μA
DC bias voltage source	Voltage/Current range		0V— ±5V / 0mA—±50mA
	Resolution		0.5mV / 5μA
	Voltage accuracy		1% x set voltage + 5mV
	ISO ON		Be used for the bias test of inductance and transformer
AC Source impedance		ISO ON	100Ω
		ISO OFF	30Ω, 50Ω, 100Ω selectable
DCR source impedance			30Ω, 50Ω, 100Ω selectable
Test parameters of LCR			Z , Y , C, L, X, B, R, G, D, Q, θ, DCR, Vdc-Idc
Parameter display of test page			One set of main/sub parameter, 10-point list sweep
Test parameters of transformer			DCR1(primary, 2-terminal), DCR2(secondary, 2-terminal), M (mutual inductance), N, 1/N,Phase, Lk(leakage inductance), C(primary, secondary capacitance),



RS232	USB HOST	USB DEVICE	HANDLER	LAN	GPIB
standard	standard	standard	standard	standard	option

TH2827A/TH2827C

Rack mount (mm): 320(W) x 88(H) x 370(D)

Dimension (mm): 369(W) x 108(H) x 408(D)

Net weight: 5kg

■ Dielectric material

Dielectric constant and loss angle evaluation of plastics, ceramics and other materials

■ Magnetic materials

Magnetic permeability and loss angle assessment of ferrite, amorphous body and other magnetic materials

■ Semiconductor materials

Dielectric constant, electrical conductivity and C-V characteristics of semiconductor materials

■ Liquid crystal cell

Dielectric constant, elastic constant and C-V characteristics of liquid crystal cell

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Basic accuracy	LCR test parameter	0.05%
	N	0.1%
	Calibration	Warm-up time ≥ 30 seconds; Environment temperature: $23 \pm 5^{\circ}\text{C}$; Signal voltage: 0.3Vrms-1Vrms; Zeroing: After OPEN or SHORT; Length of test cable: 0 m
Measurement time (≥ 10 kHz)		Fast: 13 ms / time , Medium: 67 ms / time, Slow:187 ms / time Plus the refresh time of display character
Display range of LCR parameter	Z ,R, X, DCR	0.00001 Ω — 99.9999M Ω
	Y ,G,B	0.00001 μs — 99.9999s
	C	0.00001pF — 9.99999F
	L	0.00001 μH — 99.9999kH
	D	0.00001 — 9.99999
	Q	0.00001 — 99999.9
	$\theta(\text{DEG})$	-179.999° — 179.999°
	$\theta(\text{RAD})$	-3.14159 — 3.14159
$\Delta\%$		-999.999% — 999.999%
Equivalent circuit		Serial, Parallel
Range mode		Auto, Hold
Trigger mode		Internal, Manual, External, Bus
Average times		1-255
Calibration function		Open, short calibration with full frequency or dot frequency, Load
Math operation		Direct reading, ΔABS , $\Delta\%$
Delay time setup		0-999, minimum resolution: 100us
Comparator	10-bin sorting, BIN1-BIN9, NG, AUX	
	Bin counter	
	PASS/FAIL on front panel, LED indication	
List sweep		·201 points list sweep ·Frequency, AC voltage/current, internal/external bias voltage/ current can be swept. ·Each sweep point can be sorted separately.
Internal nonvolatile memory		40 sets of LCRZ setting files
External USB memory		GIF files, LCRZ setting files, Test data can be stored via USB memory directly.
Interface	I/O interface	HANDLER on rear panel
	SCI	USB, RS232C
	PCI	GPIB (optional)
	NI	LAN
	Memory interface	USB HOST (front panel)
General Specifications		
Operating temperature and humidity		0°C – 40°C, $\leq 90\%\text{RH}$
Power supply	Voltage	99V-121V, 198V-242V AC
	Frequency	47Hz-63Hz
Consumption		Max. 80 VA
Dimension(W×H×D)		280 mm × 88 mm × 370 mm (with no sheath) 369 mm × 108 mm × 408 mm (with sheath)
Weight		Approx. 5 kg

Standard Accessories

Three core power cord

TH26010 Gold-plated short circuit board

TH26011AS 4 terminal pair Kelvin test clip leads(only TH2827A)

TH26011BS 4 terminal pair Kelvin test clip leads(only TH2827C)

TH26048 Four-terminal test fixture

TH26038 Four-terminal test fixture

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 (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 Signal level: 1Vrms ; Corretion: after OPEN, SHORT 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, Accuracy: 10% x setting voltage+2mV	
		100μA—20mArms	
		Resolution: 0.1mA	
	Constant level (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