Impulsing Winding Tester

Model 19301A

KEY FEATURES

- 10V~1000V impulse voltage test, with 0.25V test resolution
- High impulse test sampling rate (200MHz), 10bits
- <35mS high speed mode (P1.0)
- Inductance contact check function
- Inductance differential voltage compensation function
- Apply to High/low inductance test (0.1uH~100uH)
- Breakdown voltage analysis function
- Low voltage range to increase the sensibility of waveform analysis (32V/64V/128V/256V/ 512V/1024V)
- Traditional Chinese/Simplified Chinese/ English user interface
- USB port for storing waveform & screen capture
- Graphical color display
- Standard LAN,USB and RS232 interfaces

The Chroma 19301A Impulse Winding Tester applied with high/low inductance test technology has 1000V impulse voltage and 200MHz high speed sampling rate that can satisfy most of the power inductors test requirements for wide range of inductance products from 0.1uH to 100uH. The built-in Area Size Comparison, Differential Area Comparison, FLUTTER value, LAPLACIAN value, ΔPeak ratio , and Resonant Area functions are able to inspect the coils for poor insulation effectively.

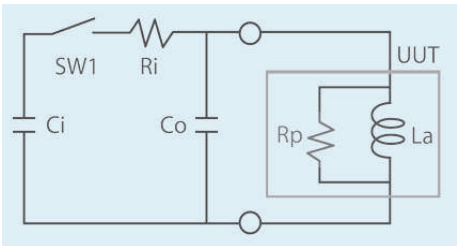
The inspection of winding components includes electrical characteristics and safety withstand voltage tests. Commonly poor insulation of coils is the root for causing layer short and output pin short-circuited during usage. The reason could result from bad initial design, poor molding process or deterioration of insulating materials; therefore, adding the coil layer short test to winding components has its necessity.

The Chroma 19301A is an equipment specifically designed for testing winding components utilizing a high voltage charged micro capacitor (low test energy) and coil under test to form an RLC parallel resonant. Analyzing the oscillation decayed waveform via a high speed and sophisticated sampling process technique can successfully detect the coils with poor insulation, also provide withstand voltage tests on winding quality and cores for power inductor components.

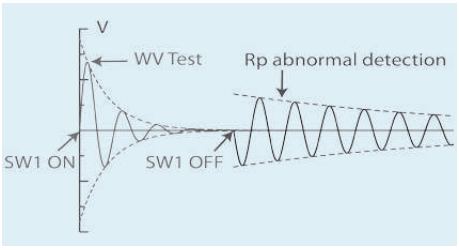
LAN RS-232 HANDLER USB CE

Δ Peak Ratio

The Δ Peak Ratio detection, which can detect the abnormal value of resistance (Rp) of the test object, is Chroma's characteristic testing technique. There might have a small damage inside the inductor before any tests. This inductor might be able to pass the withstand voltage test (Hi-pot test), but it will fail the LS/Q or Rp test easily by using LCR meter. While the SW1 is on, the instrument is doing the withstand voltage test (WV Test). After the SW1 is off, the instrument is using the Δ Peak Ratio detection to detect the item with abnormal Rp value, which can be detected by observing the damping decay rate.



Rp Schematic Diagram

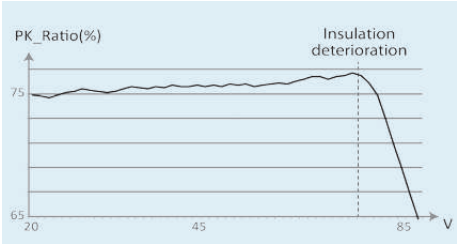


Δ Peak Ratio Waveform

Breakdown Voltage (B.D.V)

The Breakdown Voltage test function of Chroma 19301A uses the voltage slew rate to detect if the Area Size and Laplacian are over the set value and test the coil withstand voltage by setting the start/end voltage and the slew rate. The R&D engineers can perform the product analysis and research to improve the weakness spot of coil via this function.

The breakdown voltage test has added the Δ Peak Ratio detection and automatic data output functions. Chroma 19301A is able to recode all the test results in its temporary memory during the test, and save those results into USB flash drive after the test. User can analyze the insulation deterioration issue by creating a chart of voltage versus Rp in Excel file from those test results.



BDV vs. Rp

Contact Check (Patent)

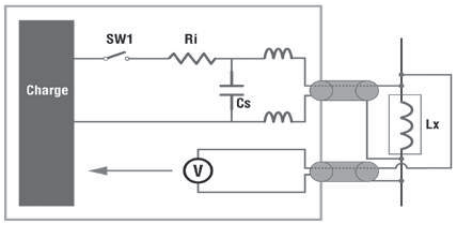
To avoid poor contact or open circuit that made the fixture probe to flash due to maximum internal voltage output and cause the DUT to be damaged, the Chroma 19301A will perform Contact Check before testing to prolong the probe's life.

High/Low Inductance Products Testing

Besides the low inductance products testing technology, the Chroma 19301A also covers the testing for high inductance products from 0.1uH ~ 100uH. The internal inductance detection function is a very convenient operation that enables the user to learn the amount of DUT inductance, switch to proper range for testing and perform comparison under a proper waveform. A single layer short tester combined with the high/ low inductance product testing application not only shortens the time for equipment change when switching the product line but also reduces the factory facility expense .

4-Wire Test

Since the voltage detection of common 2-wire layer short test device is inside the current loop, the measured voltage is quite different from the DUT for low inductance measurement. The Chroma 19301A uses dual coaxial 4-wire detection to significantly improve the voltage accuracy for correct test results.



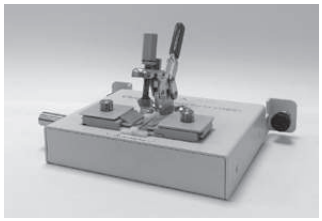
Product Application

High Speed Automatic Testing Application

The low inductance applied to smart phone or tablet PC tended to be slim and light on the appearance. Since fully automatic testing and packing devices are adopted for inductance production, high speed tester equipment is required to satisfy the high speed production. To fulfill this test application, the Chroma 19301A is equipped with high speed and dual coaxial 4-wire test functions that can reduce the impact of wiring length and work with the layer test automation machine to bring greater efficiency to customers.

SMD Power Choke Test Fixture

The size of low inductance Power Choke is quite small and to facilitate the testing of layer short, Chroma has developed an SMD Power Choke 4-side test fixture (patent) that can work with the 19301A inductance difference voltage compensation to assist the product developer or QA staff in improving the test efficiency .



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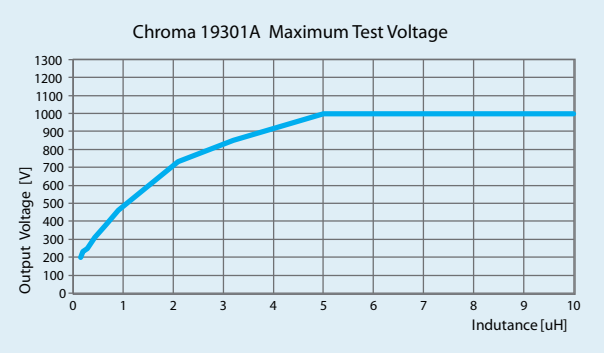
SPECIFICATIONS	
Model	**19301A**
Channel	1ch
Applied Voltage(Vpeak), Step	10V~1000V, 1V (Note1,2)
Test Inductance Range	0.1uH~100uH
Voltage Accuracy	± [1 % of setting x (1 + 0.5 uH/Lx) + 2% of range]
Sampling Speed	10bit / 5ns (200MHz)
Sampling Range	8 Range : 0, 1, 2, 3, 4, 5, 6, 7
Pulse Number	Pulse Number: 1~32, Dummy Pulse Number: 0~9
Screen Display Resolution	640× 480 Dots (VGA)
Waveform Display Range	Colors Display 512×256 Dots
Detection Mode	Area / Differential Area ; Flutter Value / Laplacian Value / ΔPeak ratio / Resonant Area
Test Time	Pulse 1.0 : <35mS ; +20~70mS/pulse (charge interval time 20mS~70mS programmable) ; +45mS when screen on
Electrical Hazard Protection Function	
Key Lock	Yes (password control)
Interlock	Yes
Indication, Alarm	GO : Short sound, Green LED; NG : Long sound, Red LED
Interface	RS232, Handler ,USB , LAN interface
General	
Operation Environment	Temperature: 0˚C ~ 45˚C, Humidity: 15% to 95% R.H@≦ 40˚C
Power Consumption	No Load: <150VA ; Rated Load: <1000VA
Power Requirements	100~240Vac, 50 / 60Hz
Dimension (W × H ×D)	177 x 428 x 500mm / 16.85 x 6.97 x 19.69 inch
Weight	26kg / 57.32 lbs

Notes

* Suggest to use Chroma's standard test wire, overlong test wire would influence maximum output voltage.
* The maximum test voltage of using standard 1m test wire is as below:



ORDERING INFORMATION

19301A : Impulsing Winding Tester
A193001 : SMD Choke Test Fixture
A193002 : 1m Test Wire + Test Clip
A193003 : : 1m Test Wire + Flat Head Cutting
A193004 : 1m Test Cable BNC to BNC (including BNC Male Connector x 2)