



KEY FEATURES

- Apply high/low inductance test (0.1uH~100uH)
- 10V~1000V impulse voltage test, with 0.06V test resolution
- 20mS high speed test (P1.0 for ACQ)
- Inductance contact check function
- Inductance differential voltage compensation function
- High impulse test sampling rate (200MHz), 10bits
- Breakdown Voltage Analysis (BDV)
- Low voltage range to increase the sensibility of waveform analysis (25V/50V/100V/200V/400V/800V/1000V)
- Traditional Chinese/Simplified Chinese/English user interface
- USB port for storing waveform & screen capture
- Graphical color display
- Standard LAN, USB and RS232 interface

The Chroma 19301A impulse Winding Tester combines high & low inductance test technologies, has a maximum impulse voltage of 1000V, and a high speed sampling rate of 200MHz which satisfies most of the test requirements for power inductor products with a wide inductance range from 0.1uH to 100uH. The built-in functions of Area Size Comparison, Differential Area Comparison, FLUTTER Value, LAPLACIAN Value, Δ PEAK or Δ PEAK RATIO, PEAK RATIO and Δ RESONANT AREA functions are able to inspect coils for poor insulation effectively.

The inspection of wound components for production includes the electrical characteristics test and the withstand voltage test of the electrical safety standard. Poor insulation of a coil, which is a common issue that causes layer short and/or short circuit with the output pin during use, can be caused by bad design, bad molding process, or deterioration of the insulation material. Therefore, it is necessary to perform the layer short test on any winding component or coil.

The 19301A, which is specifically designed for wound component tests, utilizes a high voltage & low capacitance capacitor (low test energy) in parallel with a coil to form an RLC resonant, which is called damping. Analyzing the decay of the waveform via an analysis technology with high speed, precise, and accurate sampling can successfully detect poor insulation within a



All specifications are subject to change without notice.

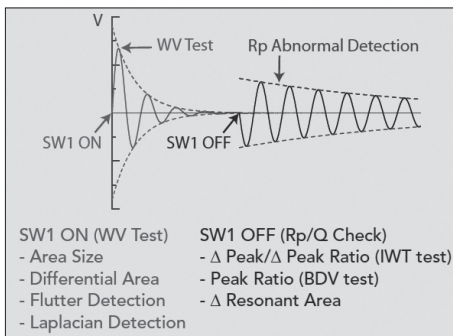
coil. It provides the winding quality test and the withstand voltage test on the cores for power inductors, and also makes the manufacturer and user checks of the quality of winding component products more efficient.

Rp Check

The Peak Ratio and the Δ Peak or Δ Peak Ratio are unique testing technologies from Chroma. Before performing any tests, a large core loss or a short circuit between the core and enamel insulated wire of wound components can cause the Q values to drop (smaller Rp).

Under the breakdown voltage (BDV) test mode, the Peak Ratio can be used to detect the changes of the parallel resistance (Rp) of the DUT for inspecting the abnormality or deterioration of the Rp. After the withstand voltage test is done and the switch is opened (SW1 OFF), it calculates the Peak Ratio from the measurement, which is the ratio of the 2nd peak value to the 1st peak value of the oscillatory voltage waveform. As the voltage increases continuously, the Peak Ratio can inspect the changes of the Rp that are caused by the abnormality or deterioration in order to find the breakdown voltage (BDV) or the deterioration voltage (DTR.V). The larger Peak Ratio indicates the greater Rp value, which also means the higher Q value.

Under the impulse winding test (IWT) mode, the Δ Peak or Δ Peak Ratio can be used for detecting defective products by comparing the Peak Ratio from the test product with a known good product. After the withstand voltage test is done and the switch is opened (SW1 OFF), it uses the Peak Ratios from the DUT and the sample to calculate the Δ Peak or Δ Peak Ratio, which is the difference of the Peak Ratio between the DUT and the sample or the difference of the Peak Ratio between the DUT and the sample in the decay ratio from the sample for identifying defective products.

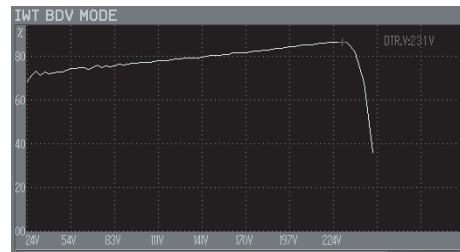


WV Test & Peak Ratio Waveform

Breakdown Voltage (B.D.V)

The 19301A has breakdown voltage analysis built in. The start voltage, end voltage, and percentage between each step can be set under the breakdown voltage (BDV) test mode. While the test voltage increases in each step, it can use Area Size, Laplacian, and Peak ratio functions to judge whether the result from each function is over

the specified limit in order to find the withstand voltage of the test coil. In addition, it can also use the Deterioration Detection function to find the deterioration voltage (DTR.V). R&D engineers can analyze and research the product and improve any weaknesses of a coil design by using these functions under BDV test mode.



Deterioration Detection

Contact Check (Patent: I516773)

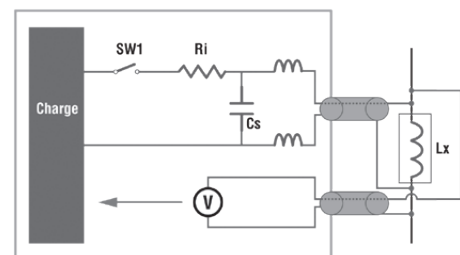
The Chroma 19301A performs a Contact Check, which can extend the service life of the fixture or probe, before the test in order to avoid poor contact or open circuits that would cause the 19301A to generate a high voltage output, preventing arcing to the fixture or probe and damage to the DUT.

High/Low Inductance Products Test

The 19301A not only has low inductance product test technology but also covers high inductance product tests. It is able to test products with inductance values from 0.1uH to 100uH. When the sample is measured for inductance, the 19301A automatically switches to the proper range according to the measurement for the sample and test. This waveform sample is then used to compare with the DUT to verify that the DUT has the proper waveform. This is a very convenient function for the operator. Combining the applications of the high & low inductance test technologies into a single layer short tester not only reduces changeover time on the production line helping production management, but also reduces the cost of facility/equipment for the factory.

4-Terminal Measurement

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.



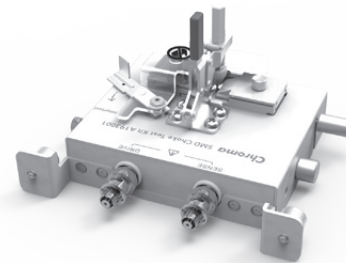
4-Terminal Measurement Diagram

High Speed Automated Testing Application

The low inductance products are used in smartphones, tablet PCs, etc., so the size of the inductor trends toward smaller, thinner and lighter. Fully automated test and packing machines, which have a high production speed, are used in producing these inductors. Therefore, high speed test equipment is required to satisfy the high speed of production. The Chroma 19301A provides high speed tests and uses dual coaxial 4-wire detection (4-Terminal Measurement) to reduce the impact of wiring length, which can work perfectly with automated machines for layer tests in order to provide greater benefit for customers. The shortest length of time for the high speed test has been improved to 18ms, which can considerably improve the quantity of automated production output.

SMD Power Choke Test Fixture

The size of a low inductance Power Choke is quite small. Chroma has developed a 4-Terminal measurement fixture (patent), which can work with the voltage compensation by inductance difference, specifically for the SMD Power Choke in order to facilitate the operation of the layer short test and to improve test efficiency for the R&D engineer, the product developer, and the QA staff.

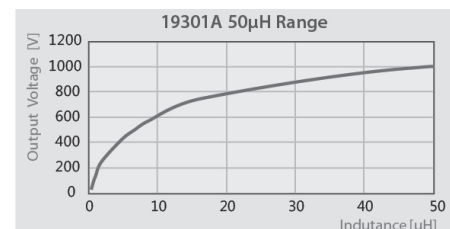
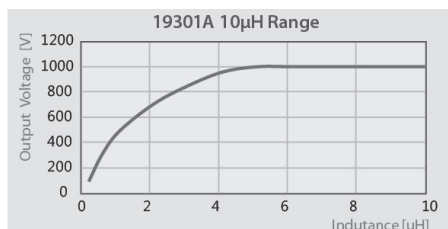
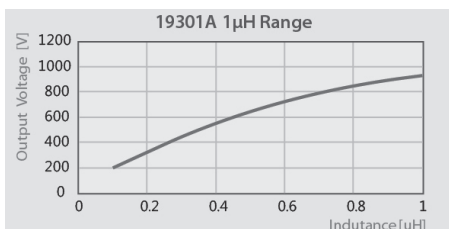


SMD Power Choke Test Fixture (A193001)

SPECIFICATIONS	
Model	19301A
Applied Voltage (Vpeak), Step	10V~1000V, 1V *1, *2
Test Inductance Range	0.1μH ~ 100μH
Voltage Accuracy	± [1% of setting x (1+0.5μH / Lx) + 2% of Range]
Sampling Rate	10bit / 5ns (200MHz)
Sampling Range	8 Ranges : 0, 1, 2, 3, 4, 5, 6, 7
Pulse Number	Pulse Number : 1~32 ; Excitation Pulse Number : 0~9
Screen Display Resolution	640 x 480 dots (VGA)
Waveform Display Range	colors display 512 x 256 dots
Detection Mode	Area / Differential Area / Flutter Value / Laplacian Value / Δ Peak Ratio / Δ Resonant Area
Test Time	Pulse1.0 : 20ms (ACQ)
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 x H x D)	177 x 428 x 500 mm / 16.85 x 6.97 x 19.69 inch
Weight	26 kg / 57.32 lbs

Note *1 : Using standard test cable shipped along with Chroma's Tester is suggested as long test cable will affect the maximum voltage output.

Note *2 : Use a standard 1 meter test cable to test the maximum voltage spec. as the table shown 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)
- A193005** : 19301A Software