QT55

V-I Signature Test Trainer System

To educate the students on the basic principles of testing discrete components such as resistance, capacitance, inductance, diodes, transistors and filter circuits using voltage *vs* current (V-I) characteristics. Using this trainer basic power electronics components such as MOSFETs, diacs, triacs, SCRs and opto couplers can also be tested using trigger pulse & signature method.

Signature Method of Testing is also known as VI Trace Characteristics, is a proven fault diagnostics technique in Power-Off state while testing a board. By applying known wave from signal with desired Voltage, Source impedance and Frequency of the stimulus signals, depending upon the test node and its characteristics, a Voltage (V) *vs* Current (I) graph is plotted and studied.
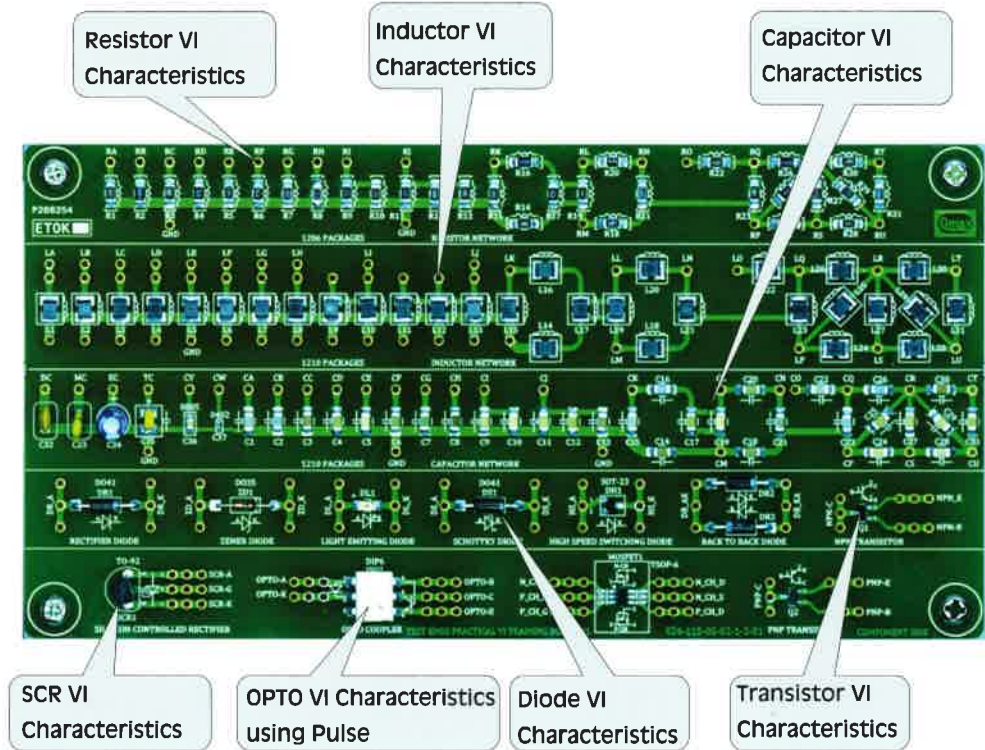
V-I Signature method is safe while testing components because the signatures are acquired without applying power to the board / device under test. More importantly, the Signature method can be used to test components even on a damaged PCB, which cannot be powered up for testing.

The trainer system also helps to plot Voltage *vs* Time and Voltage *vs* Impedance characteristics of the node under test in a board.

Analysing and comparing signatures obtained can lead to find faults in a board such as;

- Leaky components
- Damaged components (Internally)
- Intermittent behavior of device with frequency
- Short / Open circuits in board interconnections

Graphical representation a quick to understand the phenomenon, will be an useful methodology for the student to learn the component/nodal characteristics and troubleshoot.

Experiment

Resistor VI Characteristics

Inductor VI Characteristics

Capacitor VI Characteristics

SCR VI Characteristics

OPTO VI Characteristics using Pulse

Diode VI Characteristics

Transistor VI Characteristics

By doing these VI Characteristics experiments, one can understand the concepts of analog signature analysis and its test methods. It is also called as VI-Characteristics. By this students will come to know how to learn the characteristics of each and every passive and active components using test engineering practical trainer kit.

Experiments cover the fundamentals of VI-Characterises and its test methods using the QT55 VI Signature test trainer system.

These will cover the concepts of VI-Characteristics and its various curve traces like, Short Circuit trace, Open Circuit trace, Resistor Capacitor Inductor and Diode trace, Traces using triggering pulse for SCR, and much more; in this student will understand how and where to adopt the VI-Characteristics test methods while diagnosing the PCBs in power-off conditions.

Recommended minimum PC/AT configuration : Core i3 processor, 4GB RAM, 500GB HDD, CD/DVD combo drive, 2 USB ports, Key board, Mouse, 15" Monitor, Windows7 Professional 32/64 bit OS.

Qmax ®

— *where standards are set; not matched.*

For more information, mail to :
sales@qmaxtest.com

Or visit us at :
www.qmaxtest.com

TOLL-FREE PHONE – INDIA : 1-800-425-9627

AUTHORIZED DISTRIBUTOR

QESP / EDU / QT55 / Bro / Ver1.0 / Jun17 / 2000