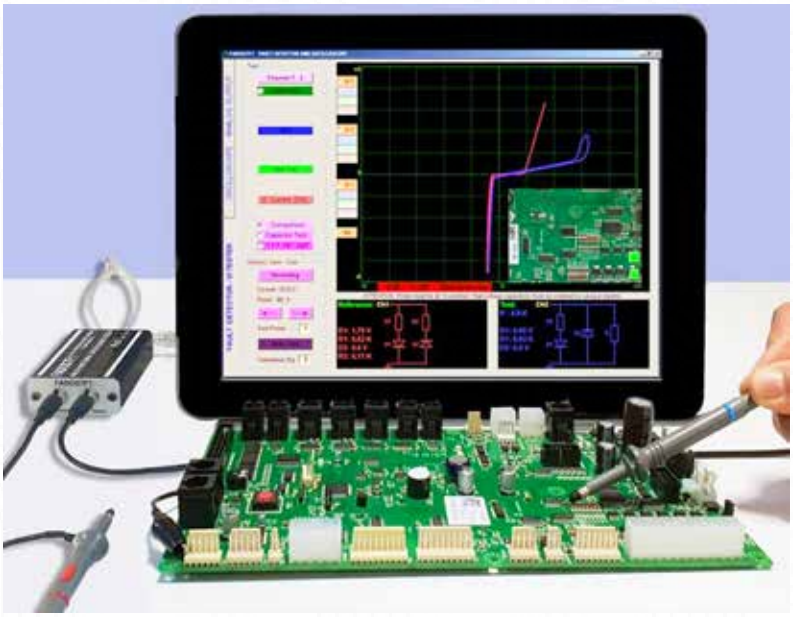
GSAS MICRO SYSTEMS
ISO 9001:2015 CERTIFIED

ProT Ar-Ge

FADOS7F1 Datasheet



FADOS is built to improve the efficiency, accuracy, and sustainability of electronics testing and troubleshooting processes. Its benefits encompass accelerated fault detection, reduced downtime, E-Waste, environmental sustainability, etc.

Features

1. **Dual channel fault detection by V-I tester**
   Identify faults by directly comparing the voltage-current characteristics of a functional circuit board and a faulty one, all without powering the circuit board.
2. **Fault Detection by Comparison with Stored Signatures**
   Signatures of a functioning board can be saved and used at a later time as a reference for troubleshooting a faulty board.
3. **Equivalent Circuit Diagram** ***
   Display of an equivalent circuit that corresponds to the characteristic of the probe point.
4. **Display Values of Resistor, Capacitor and Diode*****
   Display the measured values of resistance, capacitors and diode threshold voltages corresponding at the contacted node. Can also be used for components identification (out of the circuit).
5. **Dual-Channel Digital Basic PC Oscilloscope**
   If the situation calls for, the device can be used as basic oscilloscope.
6. **0.2 to 25kHz Square Wave Generator**
   Channel 2 is used as a square wave generator. Channel 1 can be used as an oscilloscope.
7. **Analog Voltage Output**
   Channel 2 is used as Analog DC output. Channel 1 can be used as an oscilloscope.

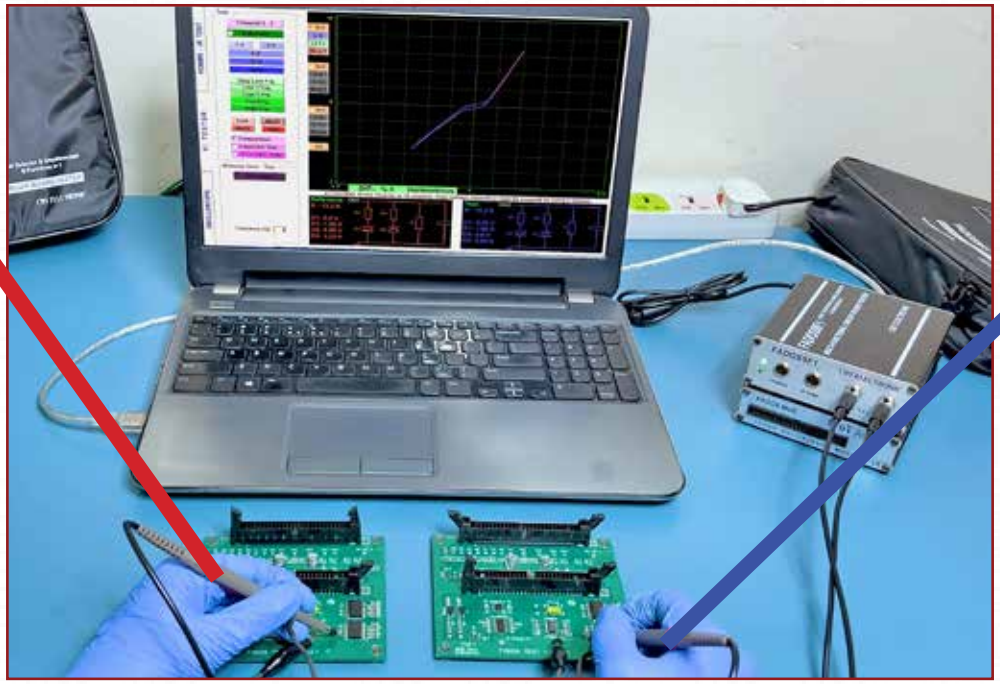
*** These Functions are Unique Features of FADOS7F1 and FADOS9F1

GSAS MICRO SYSTEMS
ISO 9001:2015 CERTIFIED

ProT Ar-Ge

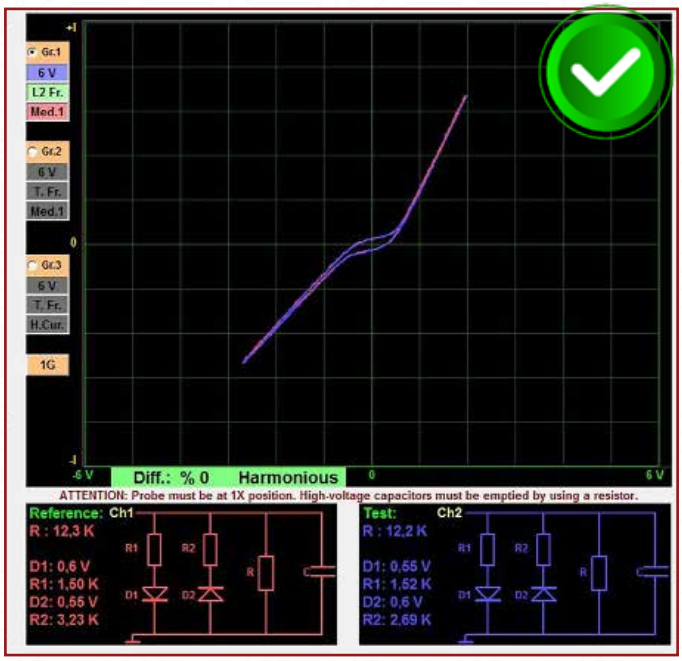
Live Comparison V-I Tester

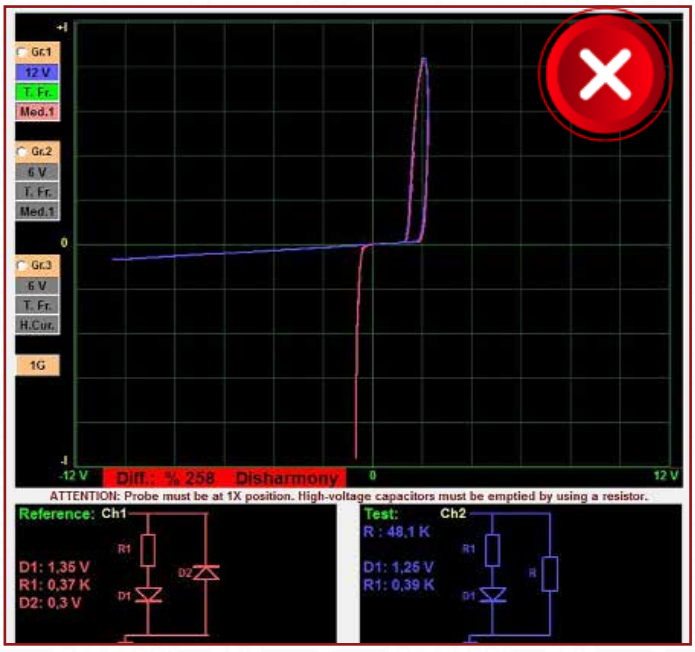
Channel 1
RED
Probe for Good Board



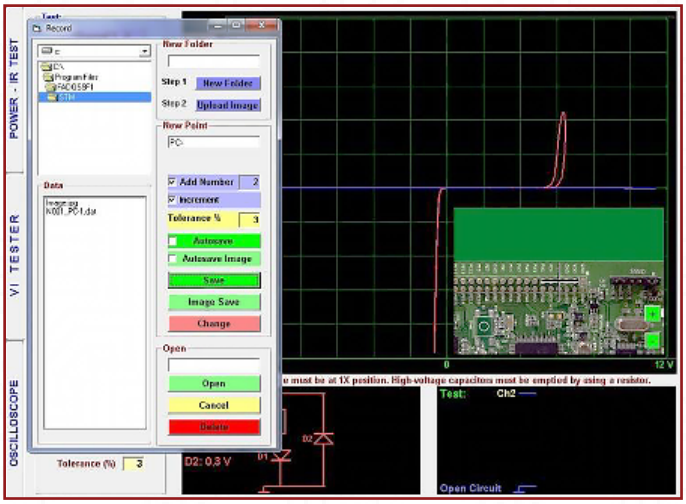
Channel 2
BLUE
Probe for Faulty Board

FADOS perform live comparison by transmitting a precisely controlled sinusoidal wave through the electronic circuit board, using the ground as its reference point. Subsequently, the V-I graph, often referred to as Analogue Signal Analysis (ASA), or in certain scenarios as Impedance Test, is visually presented on the computer screen. Notably, ASA conducted in power OFF condition of the PPBC.

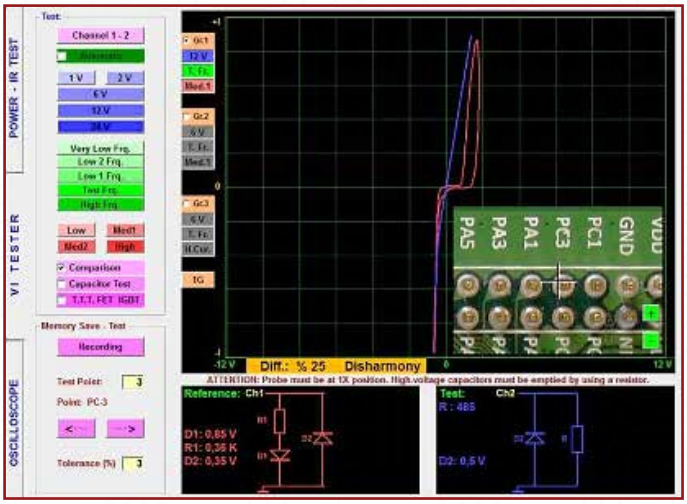




Comparison from stored V-I data



Record / Save Good Board V-I



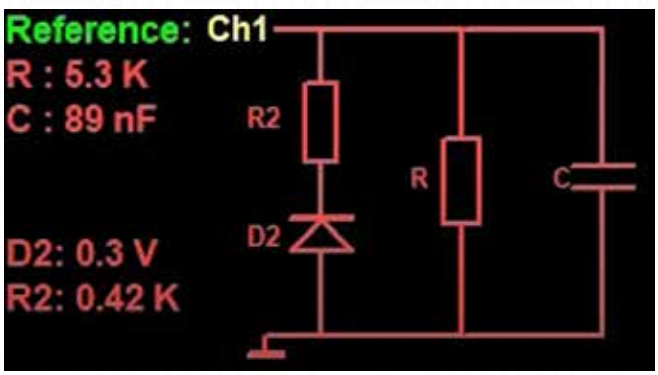
Comparison: Faulty Board with Good Board V-I Data

An additional advantageous facet of FADOS lies in its capacity to capture and store V-I data from the PPCB directly into a computer. The extent of data is contingent upon the hard disk capacity of the computer. This attribute, allows retrieval and comparison of stored V-I data in cases where a reference board is unavailable in the future.

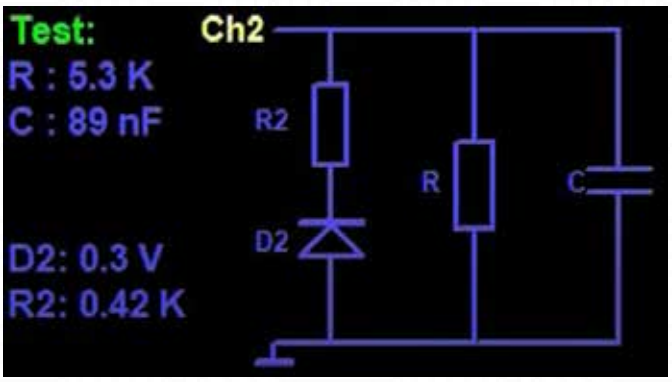
Equivalent Circuit Diagram & Component Values

Displays both the circuit diagram and values of components (e.g., parallel resistor and capacitor).

Testing of all types of electronic components (resistors, capacitors, inductors, diodes, transistors, SCR, triac, optocouplers, integrated circuits, etc.)



Reference Data

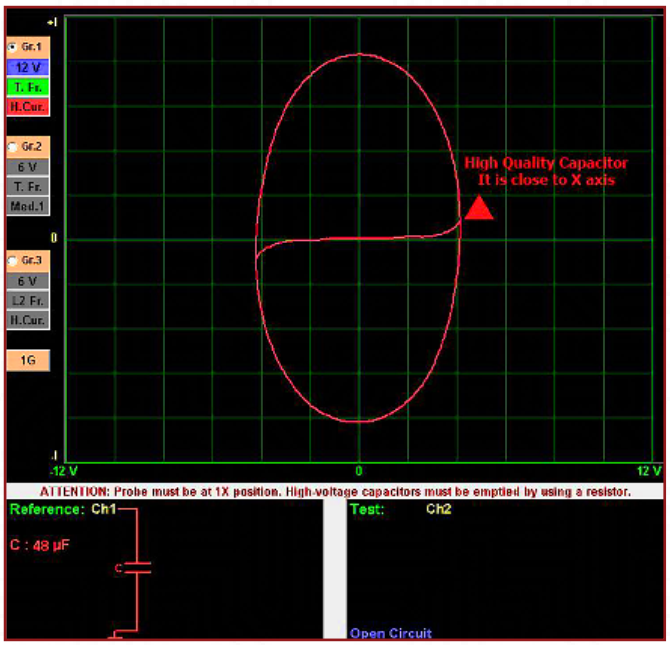


Test Data

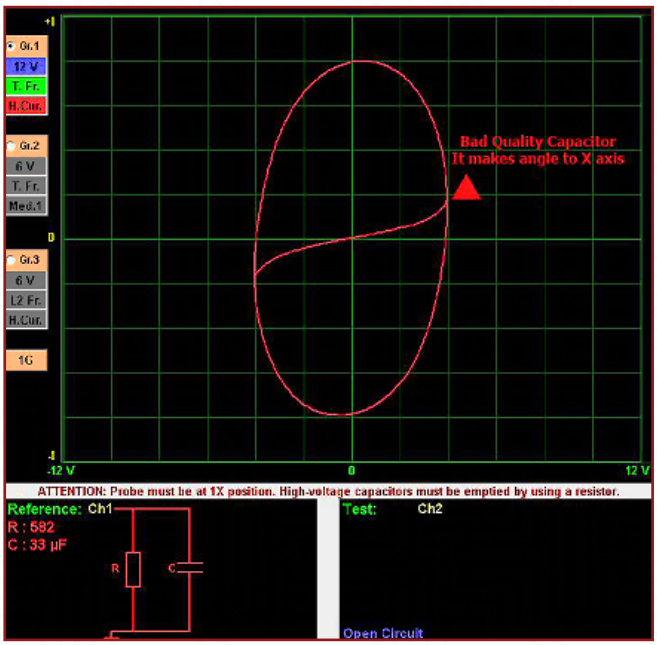
GSAS MICRO SYSTEMS
ISO 9001:2015 CERTIFIED

ProT Ar-Ge

Capacitor Quality



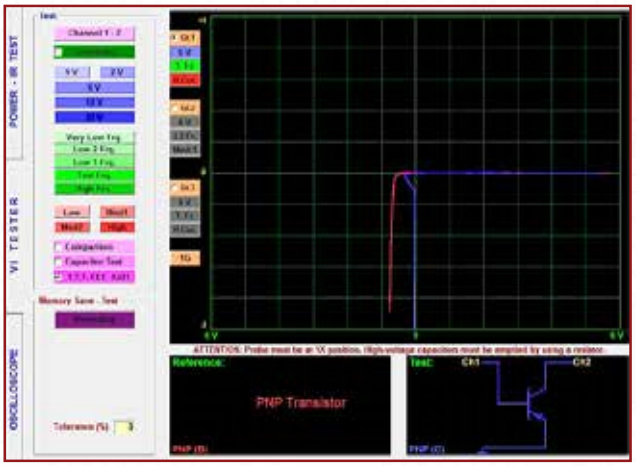
High Quality Capacitor



Low Quality Capacitor

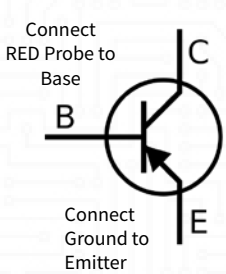
Component Identification

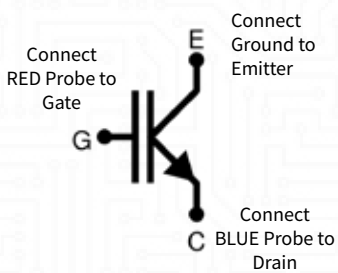
FADOS identifies the Transistor, Triac, Thyristor, FET, IGBT

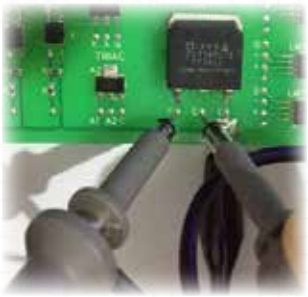


PNP Transistor

IGBT



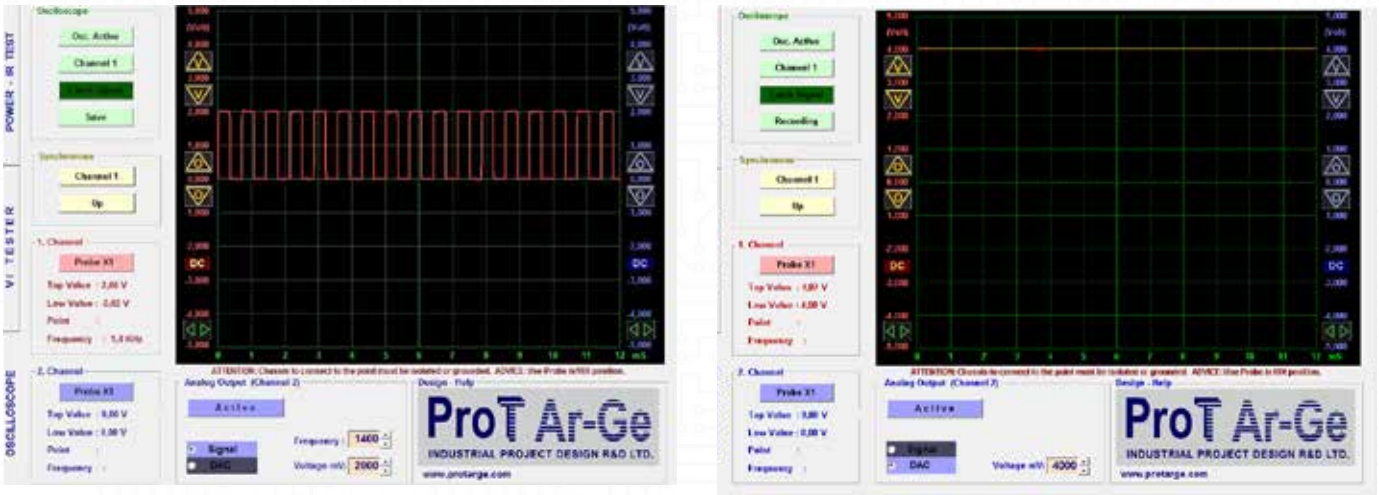


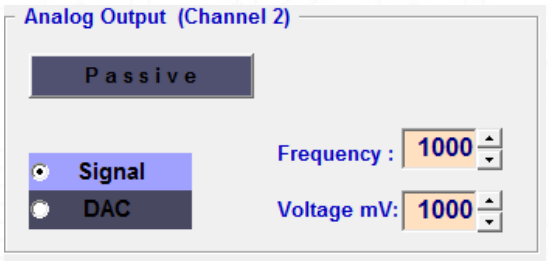


OSCILLOSCOPE – PROGRAM CHARACTERISTICS

As a device with extensive measurement capabilities, the oscilloscope is used to measure and evaluate electrical signals, allowing the determination of waveform, frequency, and amplitude. The waveform is displayed on the screen, showing the electrical wave signal, and enabling the observation of its frequency and amplitude.

The oscilloscope is an integral feature of the FADOS, with a maximum measuring frequency of 400 KHz and a measurement voltage of 50 V when the probe is set to 10X. The FADOS can also function as a square wave generator and analogue voltage output. The square wave signal output can apply a signal to the electronic circuit board, with the resulting output signals displayed on the oscilloscope screen.





The Dual Channel Oscilloscope can also function as analog voltage output. The signal output applies to the electronic circuit board, and the other channels display the output signals on the oscilloscope screen.

When measuring a signal with the oscilloscope, it is recommended to use the probe at the 10X setting. Ensure that the chassis is either isolated or grounded. Connect the crocodile probe to the chassis of the board. Touch the probe to the material to be tested to measure its voltage and frequency.

Note: Please use the probe at the 10X stage for signal measurements above 5 V.

GSAS MICRO SYSTEMS
ISO 9001:2015 CERTIFIED

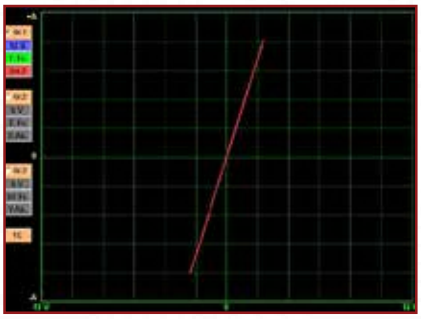
ProT Ar-Ge

Comparison between FADOS7F1 & FADOS9F1		
V-I Tester Features	**FADOS7F1**	**FADOS9F1**
Step of Voltages Plus Values	±1V, ±2V, ±6V, ±12V, ±18V	±1V, ±3V, ±6V, ±12V, ±24V
Step of Resistances Plus Values	Low 47 kΩ, Medium 2.6 kΩ, High 385 Ω	Low 47 kΩ, Med1 3.5 kΩ, Med2 700Ω, High 250 Ω
Step of Frequencies Plus Values	2.71Hz, 5.71Hz, 45.68Hz, 781.2Hz	2.16Hz, 6.85Hz, 20.56Hz, 54.82Hz @ ±1V : 7.8kHz , @ ±3V : 2.2kHz
Number of Channels	2 Channels: Channel1, Channel2	
Scan Modes	Manual / Automatic selection steps of voltage, current, and frequency	
Memory Function: Recording data with image & Fault detection by comparison with stored signatures.	Yes	
Equivalent Circuit Diagram	Yes	
Resistor, Capacitors, Diodes etc Measurement.	Yes	
3 graphs at different adjustments can be screened simultaneously.	Yes	
Test sounds different at points	Yes	
POWER – IR TEMPERATURE FEATURES		
Variable DC Power Supply	No	0 to 16V @ 0 to 1500 mA
Non touched IR Temperature	No	Room temperature to 120°C
BASIC PC OSCILLOSCOPE FEATURES	Sampling Rate: 400 K/S, Channel / ADC: 2 Channel / 12 Bit, Sensitivity: 2.5 mV, Image Rate: 0.02 mS/div….100 mS/div, Instant Memory: 64 Kbyte	
Input Voltage	Probe 1X: ±5 V, 10X: ±50 V	
SQUARE WAVE GENERATOR	From 0.2 to 25kHz	
ANALOG OUTPUT SIGNAL	-5V to +5V	-12V to +12V
OTHERS		
USB Digital Microscope	No	Yes
FADOS MUX (Optional)	No	Yes
Content of FADOS MUX	FADOS MUX x1, 50 pin FRC x2, 10 pin FRC x1	
Dimensions	105mm L x 54mm W x 24mm H	125mm L x 113mm W x 40mm H
Weight	500 grams approx	1500 grams approx
Content of FADOS	FADOS7F1 x1, Probe x2 (oscilloscope probes) A-B USB Cable x1 CD x1 FADOS7F1 Carry Case x1	FADOS9F1 x1, Probe x2 (Oscilloscope Probes) A-B USB Cable x1 DC Power Cable x1 IR Temperature Probe x1 Power Adapater x1 USB Digital Microscopex1 CD x1 FADOS9F1 Carry Case x1

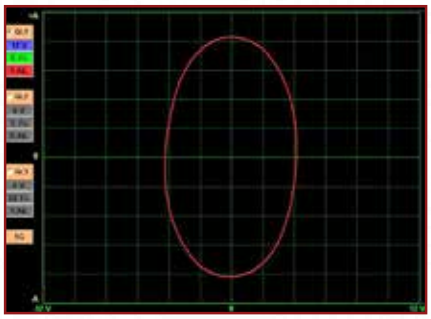
GSAS MICRO SYSTEMS
ISO 9001:2015 CERTIFIED

ProT Ar-Ge

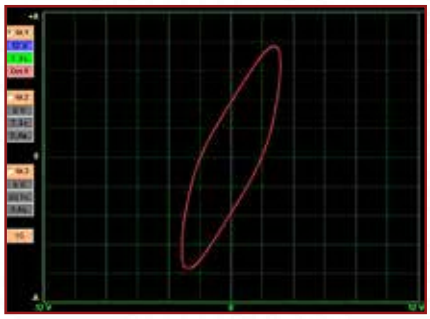
The V-I characteristics of a few electronic components



Resistor V-I Curve



Capacitor V-I Curve



Inductor V-I Curve

Diode - Forward Bias V-I Curve

Diode - Reverse Bias V-I Curve

Zener Diode V-I Curve

It facilitates the identification of faults across diverse electronic circuit boards in every industry

- Automotive
- Defence/Aerospace
- Electronic Devices

- Home Appliances
- Medical Devices
- Transportation & Logistics

* Specifications are subject to change without prior notice.
* Trademarks or logos used in this document belong to the respective IP owners.

BENGALURU	CHENNAI	DELHI	HYDERABAD	MUMBAI & PUNE	VIZAG & VIJAYAWADA
sales@gsasmspl.com +91 98450 82950	tn@gsasmspl.com +91 98450 19071	delhi@gsasmspl.com +91 98450 55228	ts@gsasmspl.com +91 98450 19029	mh@gsasmspl.com +91 98450 42976	ap@gsasmspl.com +91 98450 25622

GSAS MICRO SYSTEMS PVT LTD

147/107, 6th Main, Mahalakshmipuram, Bengaluru - 560086

fados@gsasmspl.com | www.gsasindia.com

Ph:+91 80 23496051/52 | +91 80 23499000