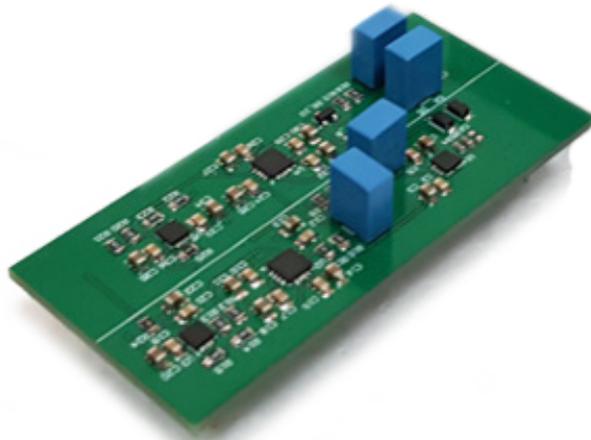


Impedance Reader FEM (Front End Module)



Overview

The Impedance reader FEM is designed to be used in ATE for on-wafer or packaged semiconductor IC and piezo structures impedance measurements.

The module is composed of a high input impedance variable gain instrumental amplifier and a current to voltage converter. The typical system setup for impedance measurement requires a digitizer or an oscilloscope, a waveform generator and a low noise DC power source.

Features

- Frequency range - 500 Hz - 4MHz
- Single frequency or fast sweep measurement mode
- AC coupled front end (allows external DC bias, or polarization voltage)
- DC bias voltage up to 45V
- Fixed or external controlled gain of VGA's
- 4 wire measurement (Hpot, Hcur, Lpot, Lcur)
- Excellent measurement repeatability

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Technical specifications

Absolute maximum ratings		
Supply voltage	±5 V	
Supply current	±150 mA	
Input		
Input type	AC coupled, unbalanced, single-ended input	
Input bias current	2 pA typ.	
Input noise	Voltage noise:	Current noise:
	4 nV/√Hz at 100 kHz	2.5 fA/√Hz at 100 kHz
Output		
Output type	DC coupled, unbalanced, single-ended output	
Polarity	Voltage	Current
	Non-Inverting	Inverting
Output impedance	50 Ohm±10%	
Maximum output voltage	±4 V (typ.)	
Maximum output current	±10 mA (typ.)	
Output offset voltage	≤±10 mV	
Amplifier		
Gain	Voltage	Current
	1 ±1%	100 V/A ±1%
Frequency Range*	Min	Max
	500 Hz	4 MHz

*The frequency and the impedance measurement ranges can be adjusted according to the customer requirements

Dimensional drawing

Bottom View

