

# Atlas ZEN

Zener diode analyser  
Model: ZEN50

**PEAK**  
electronic design ltd

## PRODUCT BRIEF

### Designed and made in the UK

The *Atlas ZEN* is a unique instrument that allows you to test components that were previously very tricky to test. Now Zener diodes, avalanche diodes, transient suppressors, LEDs (even long LED strings) can be easily tested.

The *Atlas ZEN* generates short pulses of current (selectable from 2mA up to 15mA) with voltages of up to 50V. So even fairly high voltage Zeners can be properly tested.

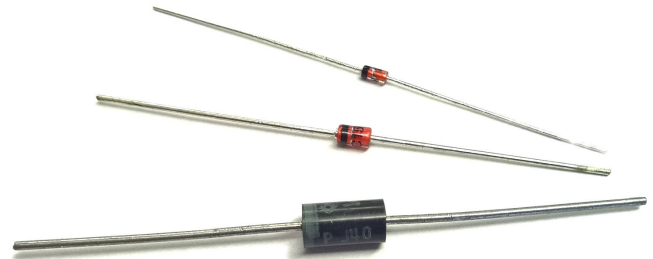
The voltage and test current are displayed along with the component's slope resistance (sometimes known as dynamic impedance).

Test pulses are kept short to minimise any temperature rise of the component under test and also to provide very long battery life from the single Alkaline AAA cell (included).



### Features

- Measure Zener voltage up to 50V.
- Selectable test currents: 2mA, 5mA, 10mA and 15mA.
- Measure slope resistance.
- Also tests LEDs, VDRs, TVSs.
- Narrow test pulses to minimise temperature rise.
- Long life from single AAA cell.
- Gold plated crocodile probes.
- Continuous measurement display (updated at 2Hz).
- Supplied with battery and guide.
- Ultra-slim and compact design.



| Parameter                             | Min.   | Typ.       | Max.  | Notes   |
|---------------------------------------|--|------------|-------|---------|
| Zener voltage range (Vz)              | 0.0V   |            | 50.0V |         |
| Nominal test currents (Iz)            | 2mA, 5mA, 10mA, 15mA   |            |       |         |
| Set test current accuracy             | ±2% ±0.2mA   |            |       |         |
| Zener voltage accuracy                | ±1% ±40mV  |            |       |         |
| Zener voltage resolution              | 20mV   |            | 40mV  |         |
| O/C test voltage (pulsed)             |  |            | 60V   |         |
| S/C test current (pulsed)             |  |            | 35mA  |         |
| Test current duty cycle               | 0.5%   | 3%         | 3.5%  |         |
| Test pulse duration                   | 100µs  | 260µs      |       |         |
| External abuse voltage                |  |            | ±50V  |         |
| Slope resistance range                | 0Ω   |            | 8000Ω | Iz=2mA  |
|                                       | 0Ω   |            | 3200Ω | Iz=5mA  |
|                                       | 0Ω   |            | 1600Ω | Iz=10mA |
|                                       | 0Ω   |            | 1000Ω | Iz=15mA |
| Displayed Slope resistance resolution |  | 5Ω         |       | Iz=2mA  |
|                                       |  | 2Ω         |       | Iz=5mA  |
|                                       |  | 1Ω         |       | Iz=10mA |
|                                       |  | 1Ω         |       | Iz=15mA |
| Slope resistance accuracy             |  | ±2% ±10Ω   |       | Iz=2mA  |
|                                       |  | ±2% ±4Ω    |       | Iz=5mA  |
|                                       |  | ±2% ±2Ω    |       | Iz=10mA |
|                                       |  | ±2% ±2Ω    |       | Iz=15mA |
| Slope res. current span               | (Iz-50%) to (Iz+50%)   |            |       |         |
| Slope resistance measurement method   | Differentiation of curve that fits: (Iz-50%, Vz1), (Iz, Vz2) and (Iz+50%, Vz3) |            |       |         |
| Measurement rate                      |  | 10Hz       | 21Hz  |         |
| Display update rate                   | 1Hz  | 2Hz        | 3Hz   |         |
| Auto-off period                       |  | 60 seconds |       |         |
| Battery type                          | AAA Alkaline, NiMh or Lithium-Iron-Disulphide                                  |            |       |         |
| Battery voltage range                 | 1.0V   |            | 1.6V  |         |
| Battery life                          | Typically ~1400 operations   |            |       |         |
| Low battery warning                   | 1.1V ± 0.1V  |            |       |         |
| Dimensions (excl. leads)              | 103 x 70 x 20mm  |            |       |         |
| Operating temperature                 | 15°C   |            | 35°C  |         |

The *Atlas ZEN* fits a curve to the Zener's V/I characteristic to determine the slope resistance:



Test long LED strings too:



Please note that specifications of our products are subject to change without notice. E&OE.

### Peak Electronic Design Limited

Atlas House, 2 Kiln Lane, Harpur Hill Business Park, Buxton, Derbyshire, SK17 9JL, UK. Tel.+44 (0)1298 70012

See us on the Web: [www.peakelec.co.uk](http://www.peakelec.co.uk) Email: [sales@peakelec.co.uk](mailto:sales@peakelec.co.uk)