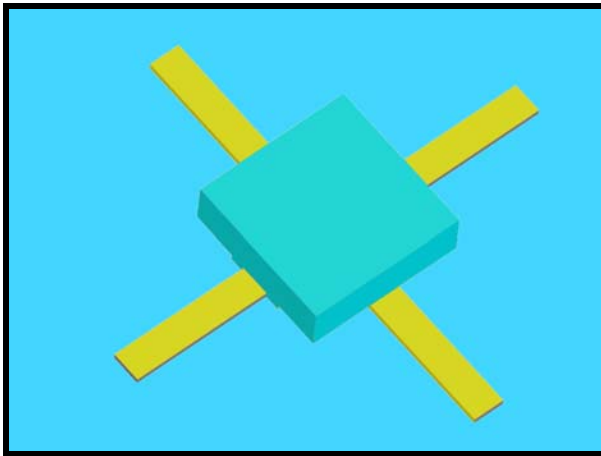




**Product Note: B6135702**

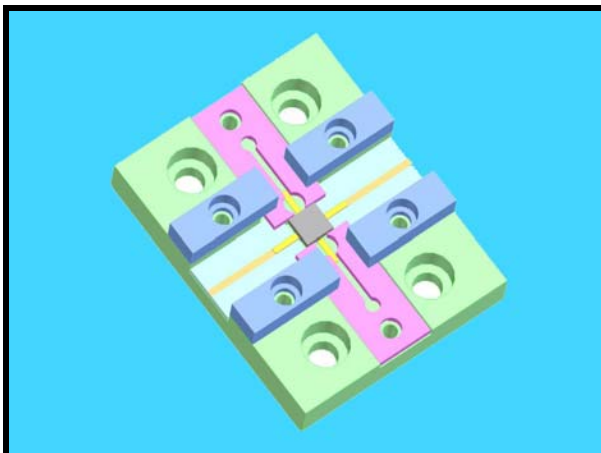
## Packaged Transistor Testing

### Overview



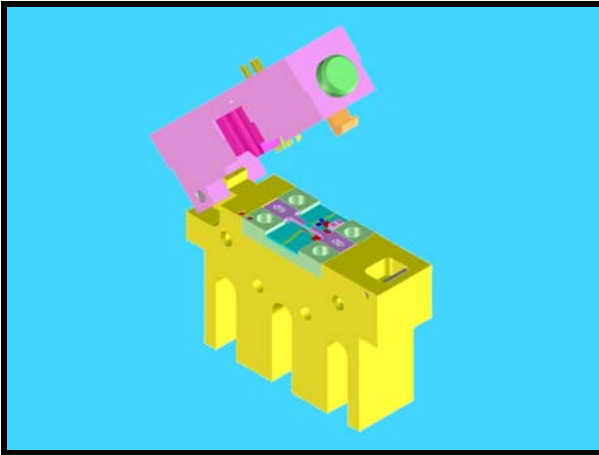
Low Power Packaged Transistors come in many package types. On a typical DUT, there is an RF-in and an RF-out lead, and usually two or more ground leads. For measuring the characteristics of the device only, the measurement reference planes are established on each side of the device where the lead exits the body of the DUT.

### Insert Assembly



The insert assemblies use 25 mil Alumina microstrip to launch to the DUT. The standard launch length on the substrate is 330 mil. This length permits utilization of standard TRL Calibration Kits which allows the user to establish the reference plane at the interface with the DUT. Adjustable DUT guides position the device under test to achieve repeatable data. Field replaceable DURA contacts on the microstrip provide long life for the insert assemblies.

## Midsection Adapter

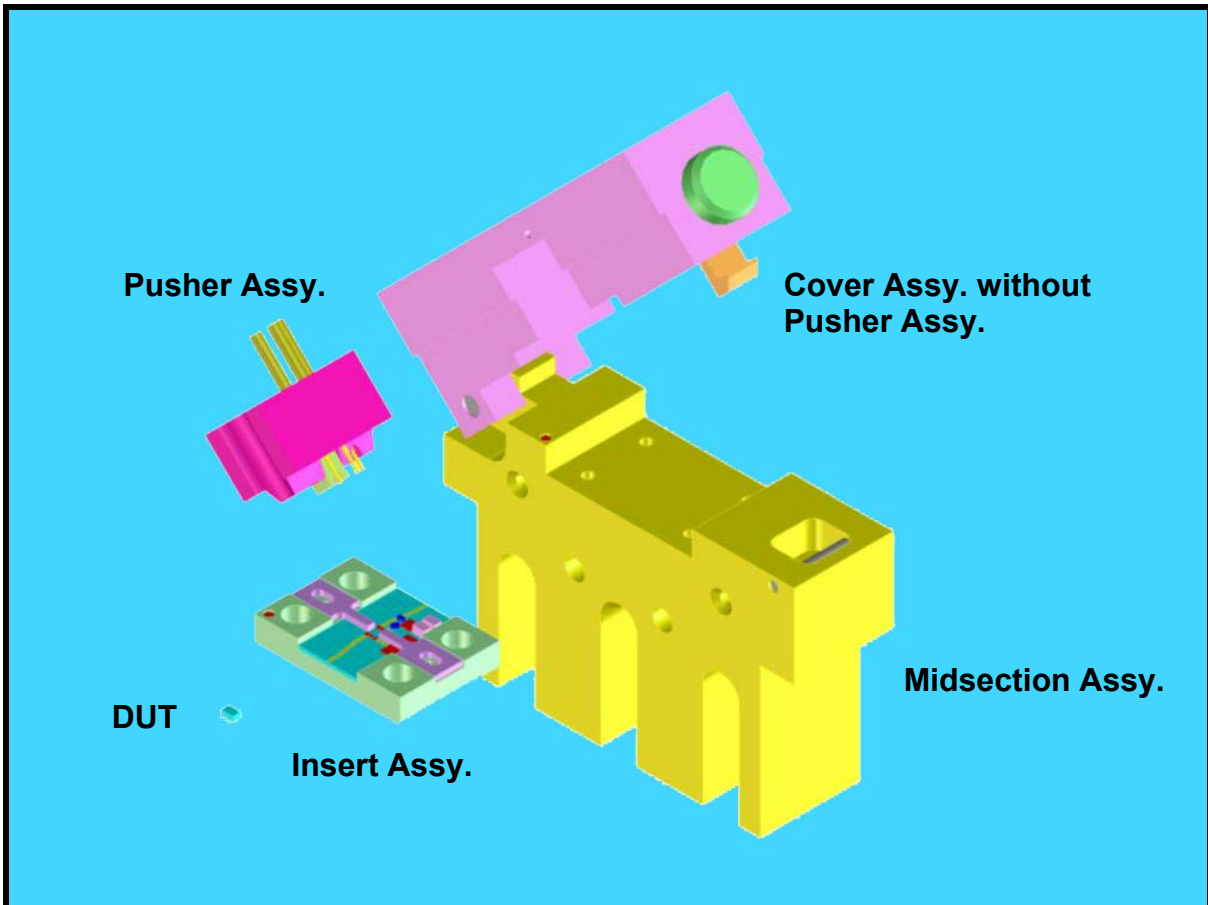


The complete Midsection Adapter consists of the Midsection Assembly with the Cover and Pusher Assembly and the Insert Assembly.

For certain packages (e.g., SOT-343), only the Insert Assembly has to be changed in order to accommodate different pin assignments.

For some packages, control voltages can be introduced through pogo pins in the Cover Assembly.

## Assemblies of the Midsection Adapter



## Service for Midsection Adapters

If spare parts are required, please provide the part number of the Midsection Adapter and/or the Insert Assembly and describe the parts required.

## Midsection Adapter Considerations

1) The Insert Assembly has to be designed to accommodate the Device Under Test (DUT). The RF launches are coordinated with the calibration kit in order to establish the reference planes at the interface with the DUT. This influences the dimensions of the Insert Assembly (from RF-in to RF-out), and it also determines the width of the Midsection Assembly.

2) Depending on the shape of the DUT, proper grounding and heat sinking (if required) has to be provided.

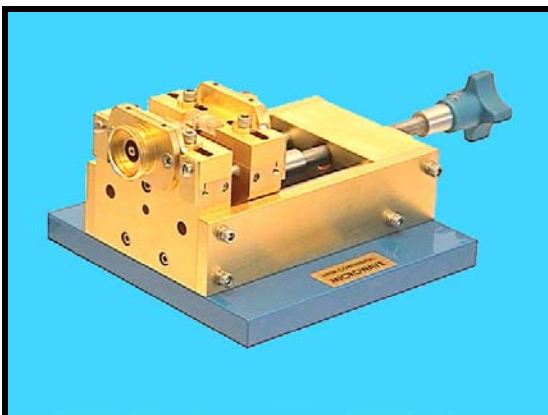
3) During the test, the DUT has to be pushed down to make proper contact with the Insert Assembly. The push down is achieved by one or multiple spring loaded push pins. The Pusher Assembly is mounted into the Cover Assembly. Sometimes the DUT needs control voltages which are supplied through pogo pins in the Cover Assembly to the Insert Assembly.

4) Dielectric guides have to position the DUT in order to make repeatable measurements. The guides have to be set up to allow insertion of the DUT with maximum tolerances.

5) In order to provide long contact life for the DUT testing, ICM uses a proprietary DURA contact which is attached to the microstrip. These contacts are field replaceable.

## Complete Test Solution # 1

For testing, the Midsection Adapter is placed into an Adjustable Mainframe Test Fixture and tightly closed. TOSL or TRL Calibration Kits are available for calibrating the Mainframe/Midsection Adapter combination from DC to 26.5 GHz.



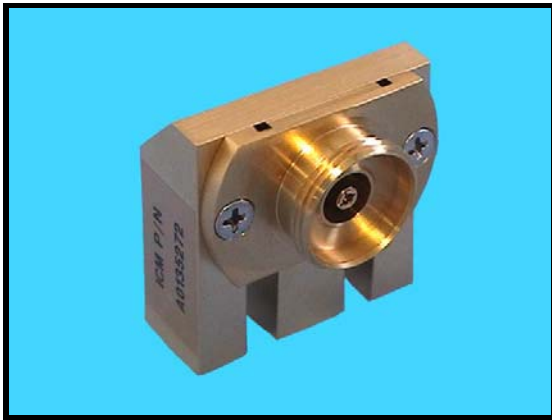
Adjustable Mainframe Test Fixture



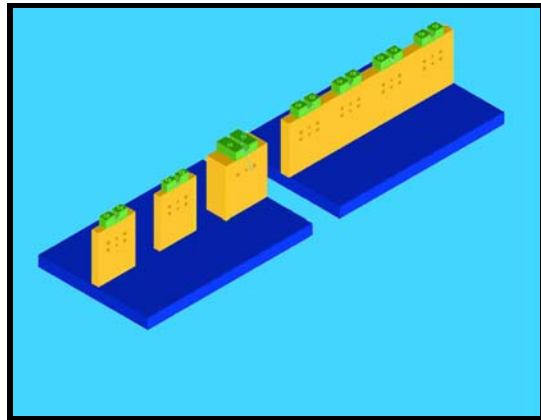
TRL-Calibration Kit Series 3000

## Complete Test Solution # 2

The Midsection Adapters can also be used with two Wide Body Coax-to-Microstrip Transitions. An ICM Economy TRL Calibration Kit Series 2000 can be used to de-embed the transitions so the measured data represents the DUT. The solution requires some additional work from the operator, but can reduce the price.



Wide Body Coax-to-Microstrip Transition



TRL-Calibration Kit Series 2000

## What to Do Next

After collecting the necessary information on the DUT to be tested, send all the information to ICM for a quotation. If necessary, use the "Customer Requirements Form" and the "Guide for the Customer Requirements Form" to specify your requirements

11/21/03

## Inter-Continental Microwave

1515 Wyatt Drive, Santa Clara, CA 95054-1586

Tel: (408) 727-1596 Fax: (408) 727-0105

E-mail: [sales@icmicrowave.com](mailto:sales@icmicrowave.com) website: [www.icmicrowave.com](http://www.icmicrowave.com)