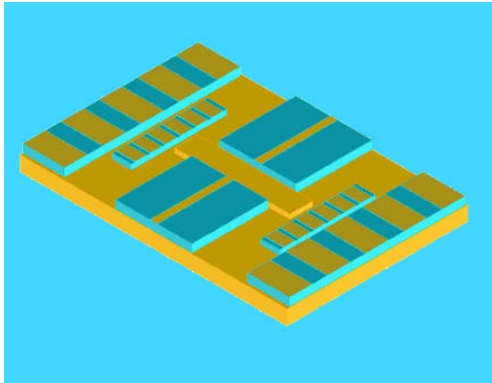




Product Note: B6137206

MMIC Carrier Assemblies



The MMIC Carrier Assembly consists of a metal carrier with a raised center area (pedestal) for mounting the MMIC chip. On each side, there is a 50 ohm microstrip substrate for the input and output of the microwave signal. Two Alumina substrates allow you to bring in five DC signals on each side for biasing, gain control, etc. Between the pedestal and the DC substrates are two bar capacitors with six each 100 pf capacitors available as an option. Often, the customer prefers to mount his own capacitors as needed.

Available Substrates

The Alumina microstrip substrates used for the microwave signals are available in 10, 15, and 25 mil thickness. Other thickness sizes are available upon special request. The standard length of the substrate is 100 mil. This permits use of standard TRL Calibration Kits and allows the user to establish the reference plane at the end of the substrate next to the DUT.

The RF substrates are attached with silver epoxy and are capable of withstanding 400 degrees Celsius. Optionally, the substrates can be attached using a Gold-Germanium alloy. Using silver epoxy to mount the substrates allows the removal of the substrates and attachment of new substrates after the carrier assembly has been used several times and wire bonding becomes more difficult. The DC substrates are always 10 mil thick and are attached with silver epoxy.

How to Specify a MMIC Carrier Assembly

Specifying the MMIC Carrier Assembly starts with the dimensions of the chip including the tolerances. Decide what substrate thickness to use. If possible, select the same substrate thickness that will be used in the final application (10 and 15 mil substrates can be used up to 50 GHz; 25 mil substrates can be used up to 26.5 GHz).

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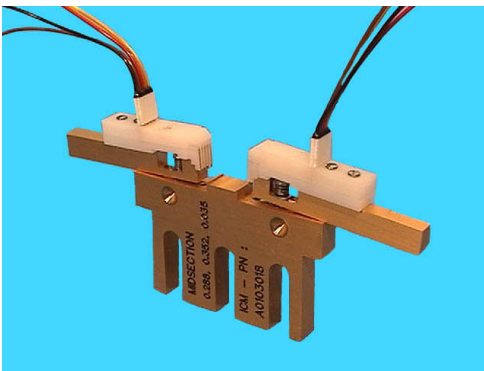
6849 W Frye Rd, Chandler, AZ 85226 USA
Tel: (480) 940-0740 Fax: (480) 961-4754
E-mail: sales@icmicrowave.com Website: www.icmicrowave.com



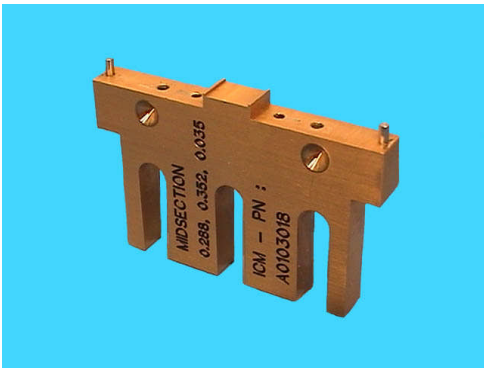
Use the attached form to enter the dimensions and determine the values required.

- 1) Enter substrate thickness "A"
- 2) Enter length of the DUT (from RF-in to RF-out) as "B"
- 3) Enter the thickness of the DUT, including the die attachment as "D"
- 4) Calculate pedestal height "C"
- 5) Calculate the carrier length "E"
- 6) Select RF substrate attachment type
- 7) Select capacitor option

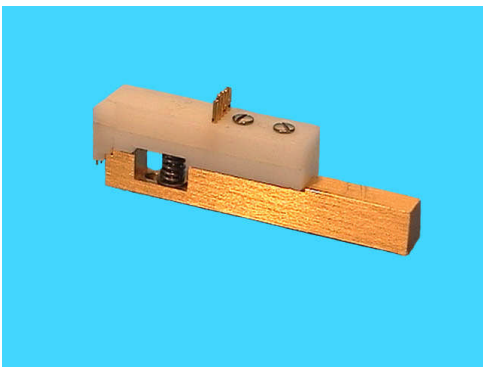
MMIC Midsection Adapter



The MMIC Midsection Adapter holds the MMIC Carrier Assembly and provides the DC inputs (10 lines) to power and control the DUT. Two cable assemblies connect the unit to the power supplies.



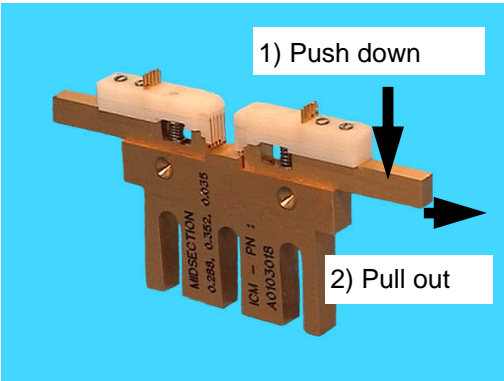
The MMIC Midsection Adapter dimensions have to match the MMIC Carrier Assembly in order to hold and position the DUT properly in the test fixture.



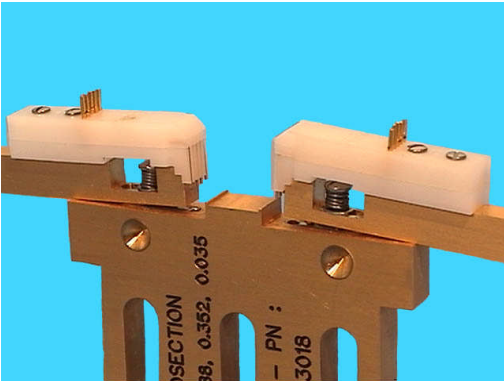
The DC Contact Assembly and the Lever Assembly are the same for all MMIC Midsection Adapters. If necessary, they can be taken off a MMIC Midsection Adapter and mounted onto another midsection in order to reduce cost when testing many different size DUTs.

See our website at www.icmicrowave.com for more details

How to Operate the MMIC Midsection

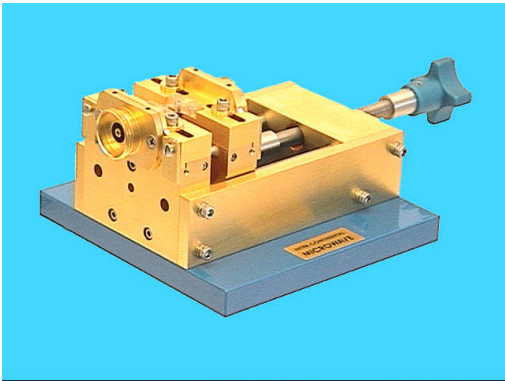


The adjacent picture shows the MMIC Midsection Assembly in the closed position. To open, push down on the lever and pull out. The Probe Assembly will stay in the open position.



The adjacent picture shows the DC Probes in the open position. Insert the MMIC Carrier Assembly, and simply push the Lever Assembly forward. It will close automatically.

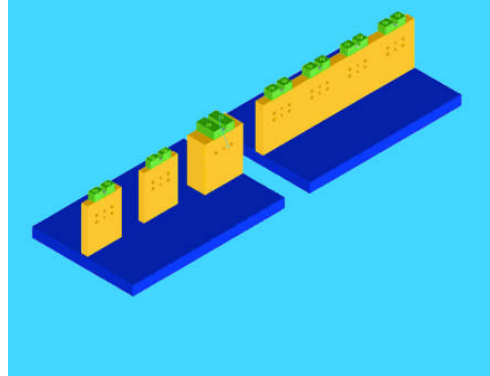
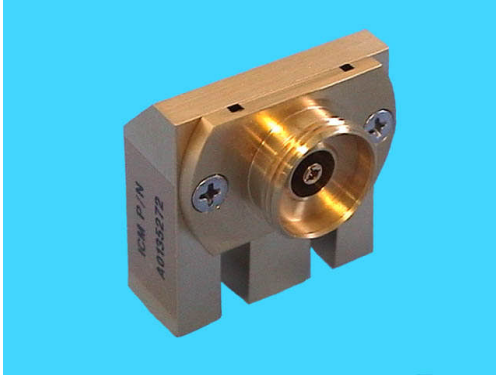
Complete Test Solution #1



The MMIC Midsection Adapter is placed into an Adjustable Mainframe Test Fixture for testing the DUT. An ICM TRL Calibration Kit is used to de-embed the test fixture, so the measured data represents the DUT and its bonding wires only.

See our website at www.icmicrowave.com for more details

Complete Test Solution #2



The MMIC Midsection Adapter can also be used with two Wide Body Coax-to-Microstrip Transitions for testing of the DUT. An ICM Economy TRL Calibration Kit Series 2000 can be used to de-embed the test fixture so the measured data represents the DUT and its bonding wires only. The solution requires some additional work from the operator but can reduce the price.

What to Do Next

After collecting the necessary information, complete form *MMIC Carrier Assembly Data Input Form* B0137207. Fax the completed form to ICM for a quotation. This form is available from our office or from our website at www.icmicrowave.com.

7/31/03

Inter-Continental Microwave

6849 W Frye Rd, Chandler, AZ 85226 USA
Tel: (480) 940-0740 Fax: (480) 961-4754
E-mail: sales@icmicrowave.com Website: www.icmicrowave.com