

CW Power Transistor, 1W 2.3 GHz

PH2323-1

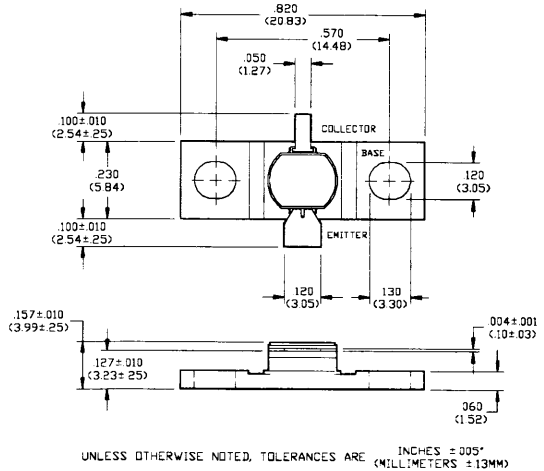
V2.00

Features

- NPN Silicon Microwave Power Transistor
- Common Base Configuration
- Class C Operation
- Interdigitated Geometry
- Diffused Emitter Ballasting Resistors
- Gold Metalization System
- Hermetic Metal/Ceramic Package

Absolute Maximum Ratings at 25°C

Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V_{CES}	60	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	0.2	A
Power Dissipation	P_D	7.0	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +200	°C
Thermal Resistance	θ_{JC}	25	°C/W

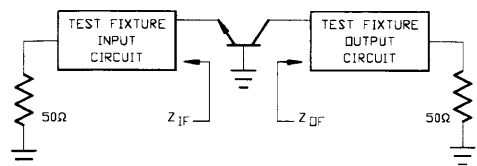


Electrical Characteristics at 25°C

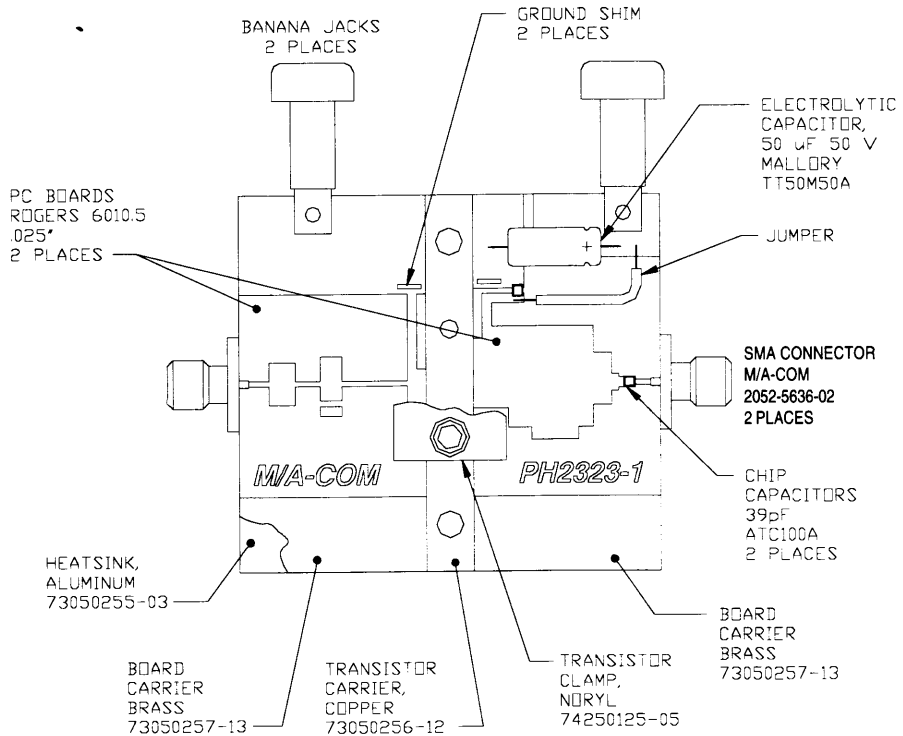
Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	60	-	V	$I_C=2.5$ mA
Collector-Emitter Leakage Current	I_{CES}	-	0.5	mA	$V_{CE}=28$ V
Input Power	P_{IN}	-	0.158	W	$V_{CC}=28$ V, $P_{OUT}=1.0$ W, $F=2.3$ GHz
Power Gain	G_P	8	-	dB	$V_{CC}=28$ V, $P_{OUT}=1.0$ W, $F=2.3$ GHz
Collector Efficiency	η_C	30	-	%	$V_{CC}=28$ V, $P_{OUT}=1.0$ W, $F=2.3$ GHz
Input Return Loss	RL	6	-	dB	$V_{CC}=28$ V, $P_{OUT}=1.0$ W, $F=2.3$ GHz
Load Mismatch Tolerance	VSWR-T	-	3:1	-	$V_{CC}=28$ V, $P_{OUT}=1.0$ W, $F=2.3$ GHz

Test Fixture Impedances

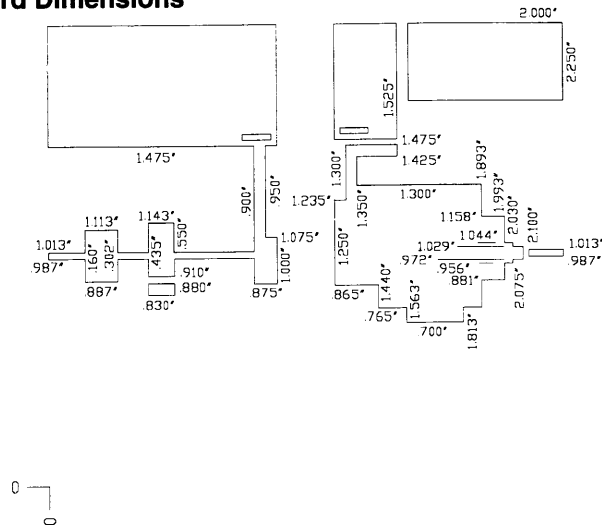
F(GHz)	$Z_{IF}(\Omega)$	$Z_{OF}(\Omega)$
2.30	12.5 - j26.0	3.7 + j10.4



RF Test Fixture



Test Fixture PC Board Dimensions



Specifications Subject to Change Without Notice.

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CW Power Transistor, 3.5W 2.3 GHz

PH2323-3

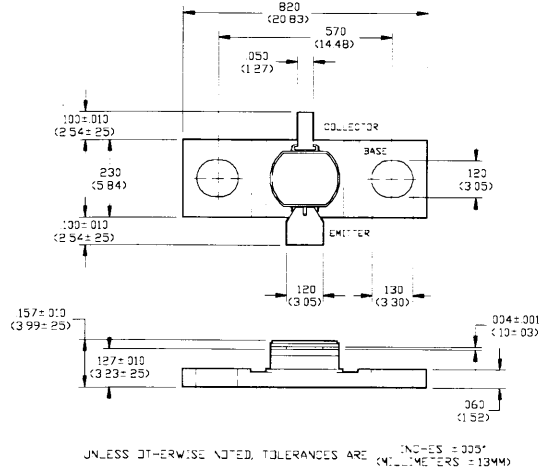
V2.00

Features

- NPN Silicon Microwave Power Transistor
- Common Base Configuration
- Class C Operation
- Interdigitated Geometry
- Diffused Emitter Ballasting Resistors
- Gold Metalization System
- Hermetic Metal/Ceramic Package

Absolute Maximum Ratings at 25°C

Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V_{CES}	60	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	0.4	A
Power Dissipation	P_D	11	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +200	°C
Thermal Resistance	θ_{JC}	15	°C/W

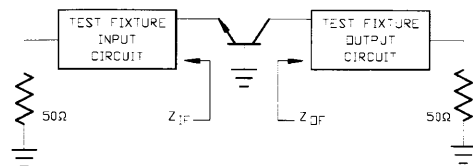


Electrical Characteristics at 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	60	-	V	$I_C=5$ mA
Collector-Emitter Leakage Current	I_{CES}	-	1.0	mA	$V_{CE}=28$ V
Input Power	P_{IN}	-	0.48	W	$V_{CC}=28$ V, $P_{OUT}=3.0$ W, $F=2.3$ GHz
Power Gain	G_P	8	-	dB	$V_{CC}=28$ V, $P_{OUT}=3.0$ W, $F=2.3$ GHz
Collector Efficiency	η_C	30	-	%	$V_{CC}=28$ V, $P_{OUT}=3.0$ W, $F=2.3$ GHz
Input Return Loss	RL	6	-	dB	$V_{CC}=28$ V, $P_{OUT}=3.0$ W, $F=2.3$ GHz
Load Mismatch Tolerance	VSWR-T	-	3:1	-	$V_{CC}=28$ V, $P_{OUT}=3.0$ W, $F=2.3$ GHz

Test Fixture Impedances

F(GHz)	$Z_{IF}(\Omega)$	$Z_{OF}(\Omega)$
2.30	$6.5 - j23.0$	$6.3 + j5.4$



Specifications Subject to Change Without Notice.

9-200

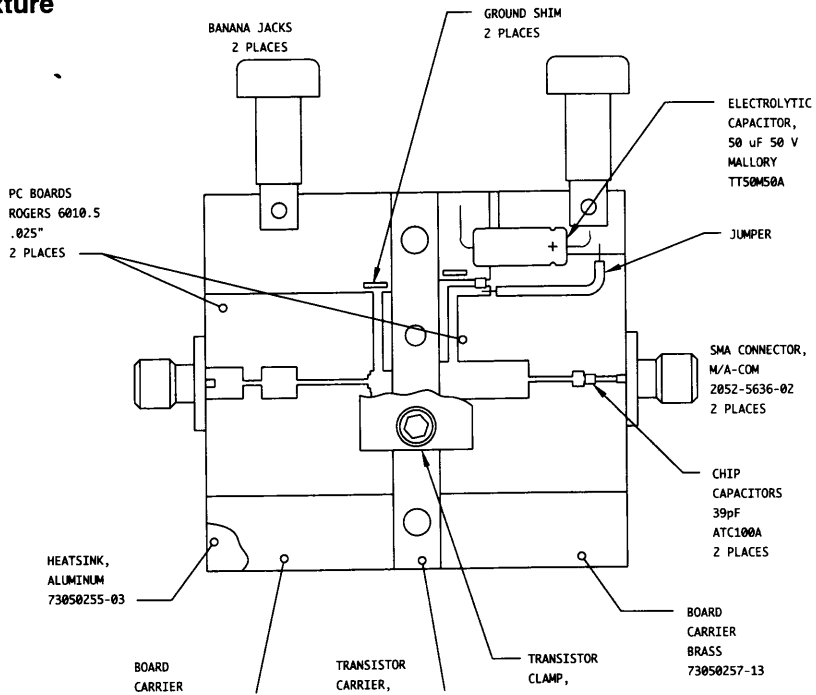
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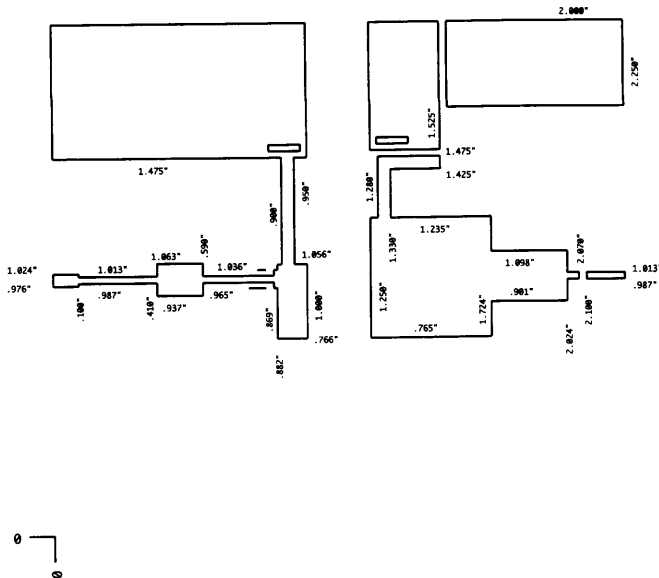
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RF vTest Fixture



Test Fixture PC Board Dimensions



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CW Power Transistor, 5W

2.3 GHz

PH2323-5

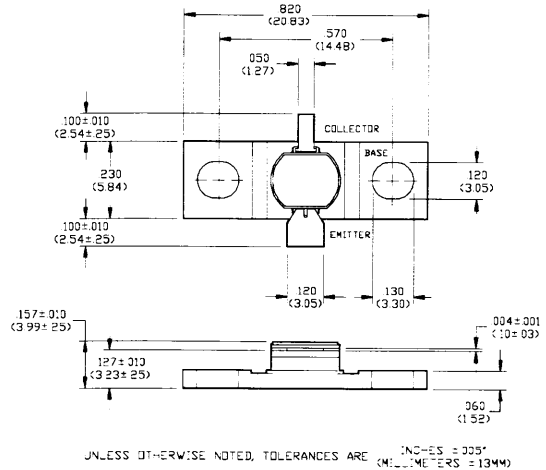
V2.00

Features

- NPN Silicon Microwave Power Transistor
- Common Base Configuration
- Class C Operation
- Interdigitated Geometry
- Diffused Emitter Ballasting Resistors
- Gold Metalization System
- Hermetic Metal/Ceramic Package

Absolute Maximum Ratings at 25°C

Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V_{CES}	60	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	0.8	A
Power Dissipation	P_D	25	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +200	°C
Thermal Resistance	θ_{JC}	7.0	°C/W

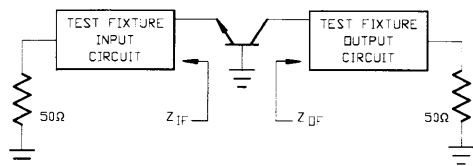


Electrical Characteristics at 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	60	-	V	$I_C=10$ mA
Collector-Emitter Leakage Current	I_{CES}	-	2.0	mA	$V_{CE}=28$ V
Input Power	P_{IN}	-	0.79	W	$V_{CC}=28$ V, $P_{OUT}=5.0$ W, $F=2.3$ GHz
Power Gain	G_P	8	-	dB	$V_{CC}=28$ V, $P_{OUT}=5.0$ W, $F=2.3$ GHz
Collector Efficiency	η_C	35	-	%	$V_{CC}=28$ V, $P_{OUT}=5.0$ W, $F=2.3$ GHz
Input Return Loss	RL	6	-	dB	$V_{CC}=28$ V, $P_{OUT}=5.0$ W, $F=2.3$ GHz
Load Mismatch Tolerance	VSWR-T	-	3:1	-	$V_{CC}=28$ V, $P_{OUT}=5.0$ W, $F=2.3$ GHz

Test Fixture Impedances

F(GHz)	$Z_{in}(\Omega)$	$Z_{out}(\Omega)$
2.30	$3.5 - j17.0$	$4.0 + j0.3$



Specifications Subject to Change Without Notice.

9-202

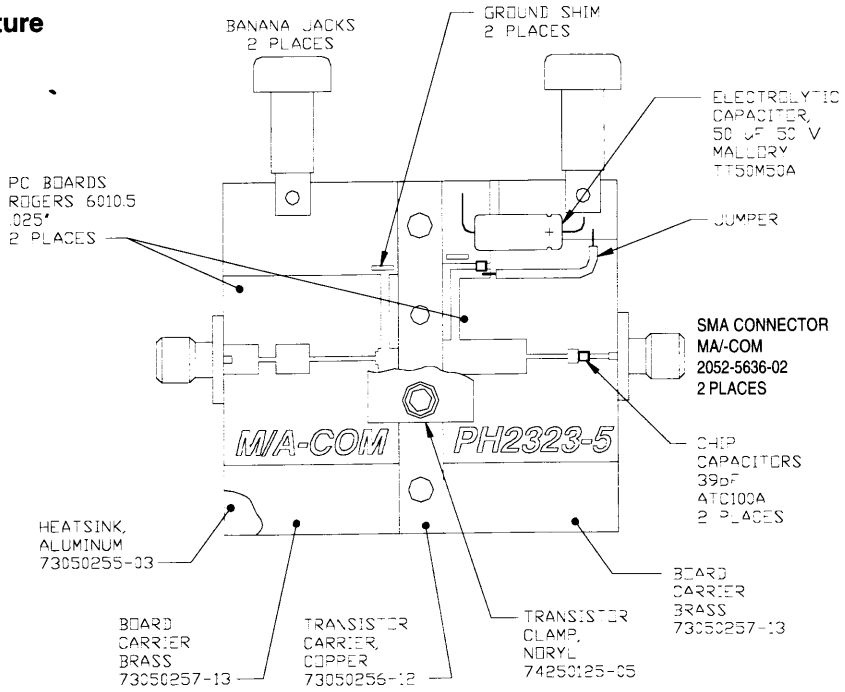
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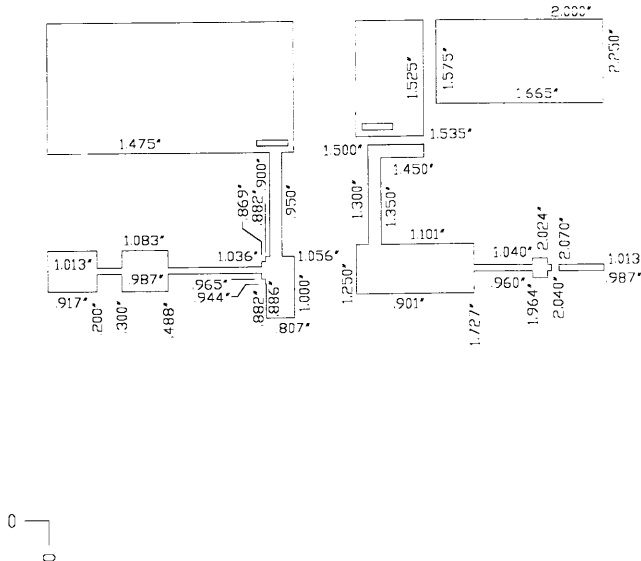
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RF Test Fixture



Test Fixture PC Board Dimensions



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CW Power Transistor, 14W

2.3 GHz

PH2323-14

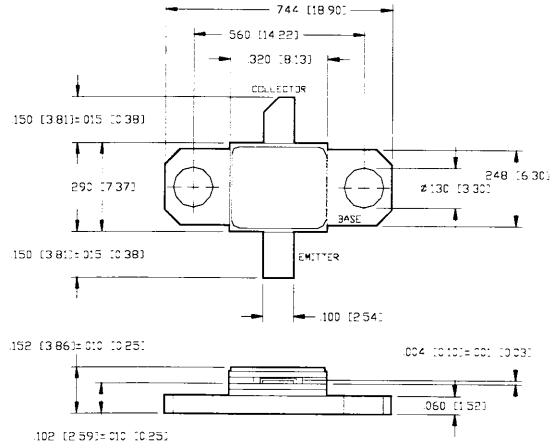
V2.00

Features

- NPN Silicon Microwave Power Transistor
- Common Base Configuration
- Class C Operation
- Interdigitated Geometry
- Gold Metalization System
- Hermetic Metal/Ceramic Package
- Diffused Emitter Ballasting Resistors
- Internal Input and Output Impedance Matching

Absolute Maximum Ratings at 25°C

Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V_{CES}	60	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	0.8	A
Power Dissipation	P_D	25	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +200	°C
Thermal Resistance	θ_{JC}	4.5	°C/W



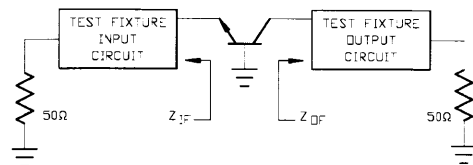
UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES = 0.001" MILLIMETERS = 0.050mm

Electrical Characteristics at 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	60	-	V	$I_C = 10$ mA
Collector-Emitter Leakage Current	I_{CES}	-	2.0	mA	$V_{CE} = 28$ V
Output Power	P_{OUT}	14	-	W	$V_{CC} = 28$ V, $P_{IN} = 2.5$ W, $F = 2.3$ GHz
Power Gain	G_P	7.6	-	dB	$V_{CC} = 28$ V, $P_{IN} = 2.5$ W, $F = 2.3$ GHz
Collector Efficiency	η_C	35	-	%	$V_{CC} = 28$ V, $P_{IN} = 2.5$ W, $F = 2.3$ GHz
Input Return Loss	RL	10	-	dB	$V_{CC} = 28$ V, $P_{IN} = 2.5$ W, $F = 2.3$ GHz
Load Mismatch Tolerance	VSWR-T	-	2:1	-	$V_{CC} = 28$ V, $P_{IN} = 2.5$ W, $F = 2.3$ GHz

Test Fixture Impedances

F(GHz)	$Z_{IF}(\Omega)$	$Z_{OF}(\Omega)$
2.30	4.1 - j8.5	11.0 + j4.0



Specifications Subject to Change Without Notice.

9-204

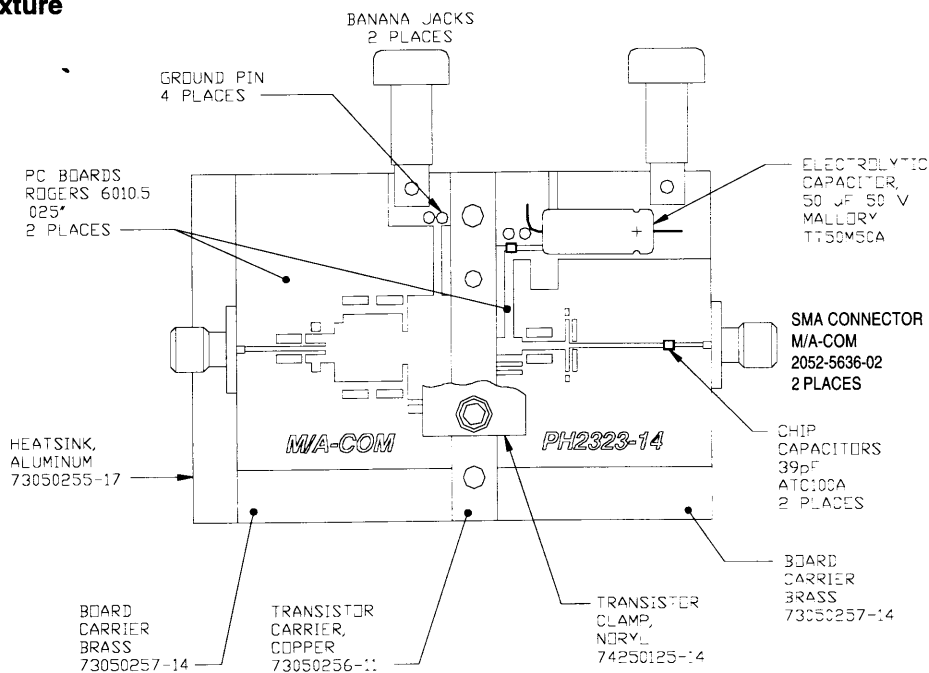
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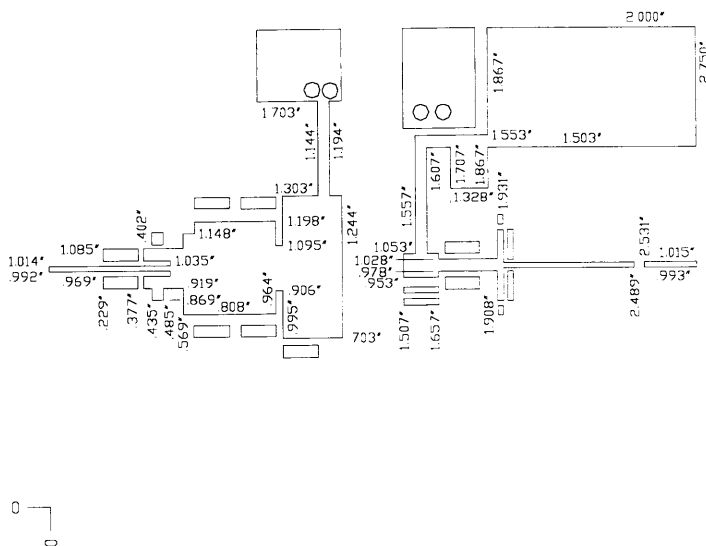
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RF Test Fixture



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