

Wireless Bipolar Power Transistor 60W, 1450-1550 GHz

M/A-COM Products
Released - Rev. 07.07

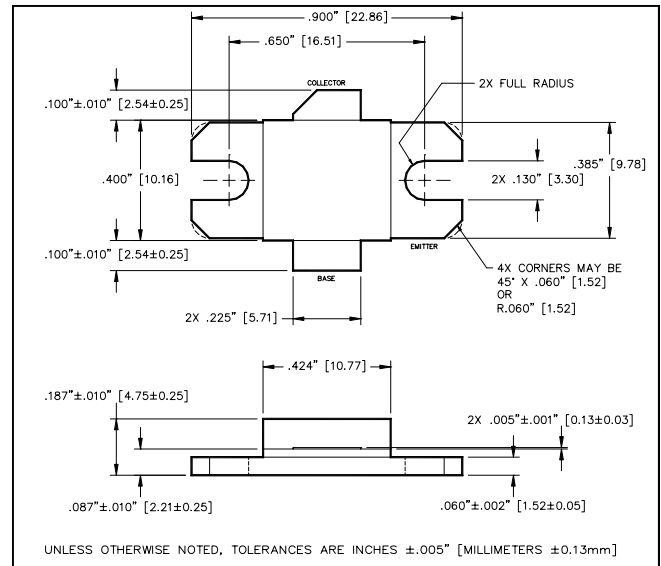
Features

- Designed for linear amplifier applications
- Class AB: -30 dBc typ. 3rd IMD at 60 W PEP
- Class A: + 53 dBm typ. 3rd order intercept point
- Common emitter configuration
- Internal input impedance matching
- Diffused emitter ballasting

ABSOLUTE MAXIMUM RATING AT 25°C

Parameter	Symbol	Rating	Units
Collector-Base Voltage	V_{CBO}	65	V
Collector-Emitter Voltage	V_{CES}	65	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	10	A
Power Dissipation	P_D	116	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-55 to + 150	°C
Thermal Resistance	θ_{JC}	1.5	°C/W

Outline Drawing

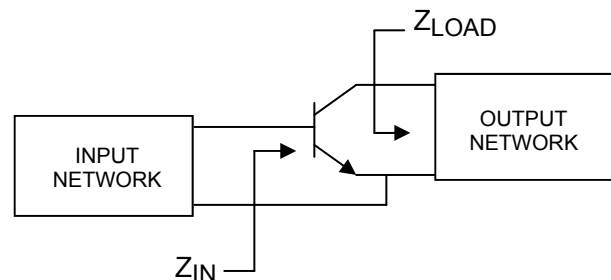


ELECTRICAL SPECIFICATIONS AT 25°C

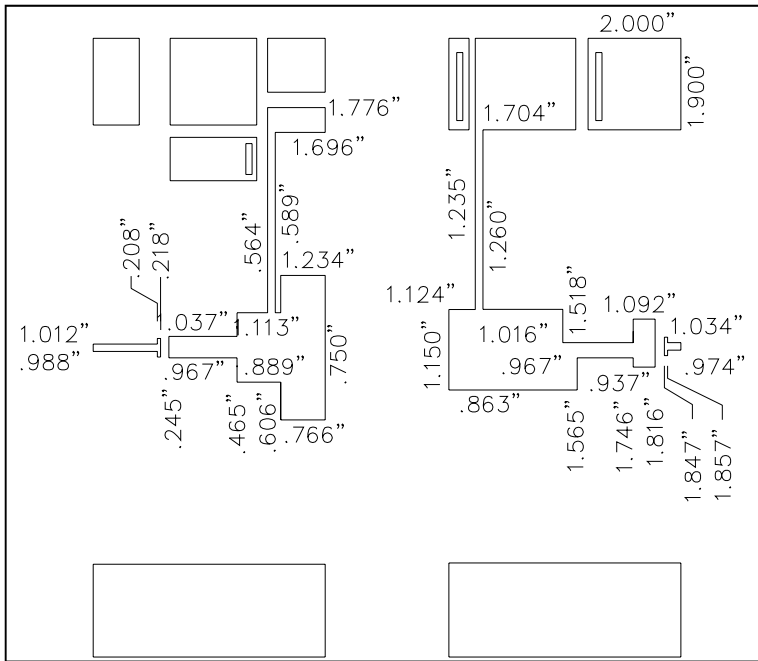
Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	60	-	V	$I_C = 40\text{mA}$
Collector-Emitter Leakage Current	I_{CES}	-	10	mA	$V_{CE} = 26\text{V}$
Collector-Emitter Breakdown Voltage	BV_{CEO}	24	-	V	$I_C = 40\text{mA}$
Emitter-Base Breakdown Voltage	BV_{EBO}	3.0	-	V	$I_B = 40\text{mA}$
DC Forward Current Gain	h_{FE}	15	120	-	$V_{CE} = 5\text{V}, I_C = 1\text{A}$
Power Gain	G_P	8	-	dB	$V_{CC} = 26\text{V}, I_{CO} = 50\text{mA}, P_{out} = 60\text{W PEP}, F = 1500\text{MHz}, \Delta F = 100\text{kHz}$
Collector Efficiency	η_C	30	-	%	$V_{CC} = 26\text{V}, I_{CO} = 50\text{mA}, P_{out} = 60\text{W PEP}, F = 1500\text{MHz}, \Delta F = 100\text{kHz}$
Input Return Loss	RL	10	-	dB	$V_{CC} = 26\text{V}, I_{CO} = 50\text{mA}, P_{out} = 60\text{W PEP}, F = 1500\text{MHz}, \Delta F = 100\text{kHz}$
Load Mismatch Tolerance	VSWR	-	5.0:1	-	$V_{CC} = 26\text{V}, I_{CO} = 50\text{mA}, P_{out} = 60\text{W PEP}, F = 1500\text{MHz}, \Delta F = 100\text{kHz}$
3rd Order IMD	IMD ₃	-	-28	dBc	$V_{CC} = 26\text{V}, I_{CO} = 50\text{mA}, P_{out} = 60\text{W PEP}, F = 1500\text{MHz}, \Delta F = 100\text{kHz}$

TYPICAL OPTIMUM DEVICE IMPEDANCES

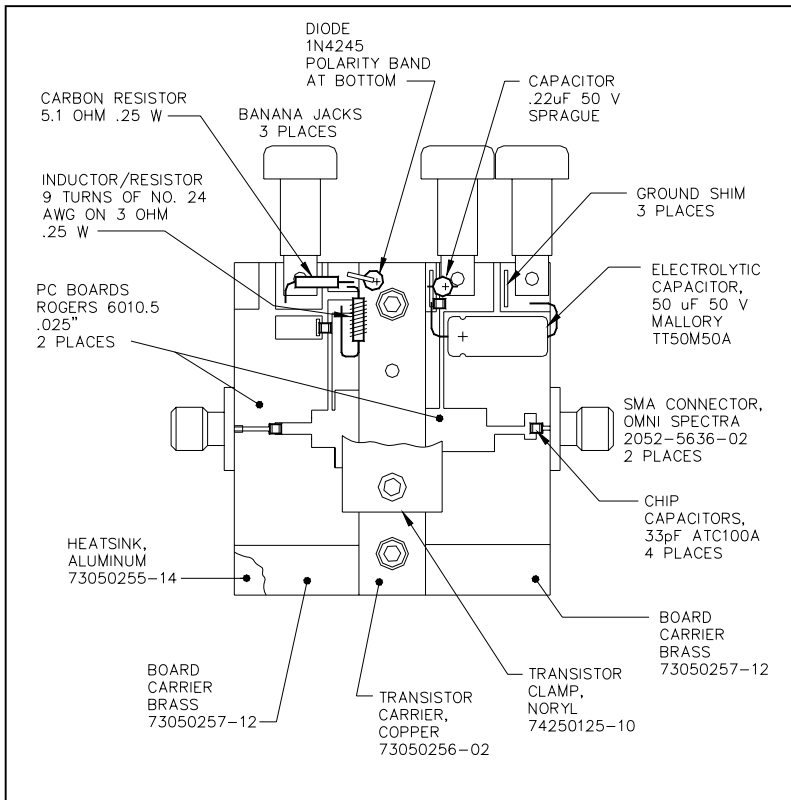
F (MHz)	$Z_{IN} (\Omega)$	$Z_{LOAD} (\Omega)$
1450	2.2+j5.0	3.0-j3.8
1500	2.7+j4.5	2.2-j4.0
1550	2.1+j3.7	1.5-j4.1



TEST FIXTURE DIMENSIONS



TEST FIXTURE SCHEMATIC



Typical Broadband Performance Curves

