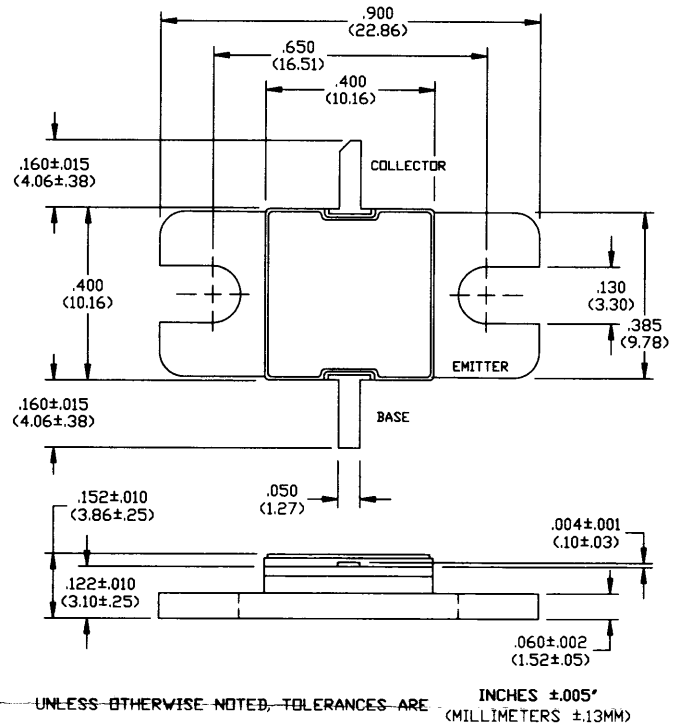


Features

- NPN Silicon Power Transistor
- Common Emitter Configuration
- Class AB Broadband Operation
- Diffused Emitter Ballasting Resistors
- Gold Metallization System
- Internal Input Impedance Matching
- Hermetic Metal/Ceramic Package

Outline Drawing



Absolute Maximum Ratings at 25°C

Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V_{CES}	60	V
Emitter-Base Voltage	V_{EBO}	3.5	V
Collector Current	I_C	2	A
Power Dissipation	P_D	35	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +200	°C
Thermal Resistance	θ_{JC}	5.0	°CAW

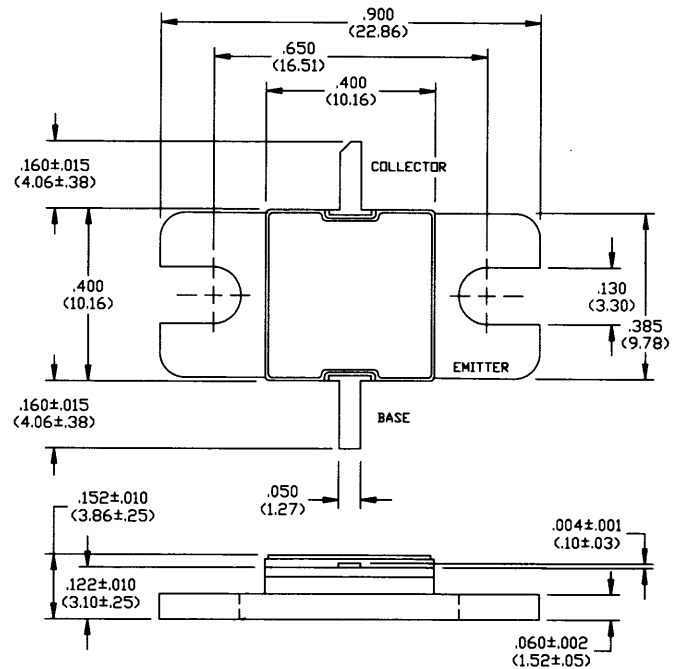
Electrical Characteristics at 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	60	-	V	$I_C=10\text{ mA}, V_{BE}=0.0\text{ V}$
Base-Emitter Breakdown Voltage	BV_{EBO}	3.5	-	V	$I_B=2.0\text{ mA}, I_C=0.0\text{ A}$
Collector-Emitter Leakage Current	I_{CES}	-	0.5	mA	$V_{CE}=30\text{ V}$
DC Forward Current Gain	h_{FE}	20	85	-	$V_{CE}=5.0\text{ V}, I_C=500\text{ mA}$
Input Power	P_{IN}	-	.50	W	$V_{CC}=26\text{ V}, I_{CQ}=10\text{ mA}, P_{OUT}=8.0\text{ W}, F=300, 324\text{ MHz}$
Power Gain	G_p	12	-	dB	$V_{CC}=26\text{ V}, I_{CQ}=10\text{ mA}, P_{OUT}=8.0\text{ W}, F=300, 324\text{ MHz}$
Collector Efficiency	η_C	45	-	%	$V_{CC}=26\text{ V}, I_{CQ}=10\text{ mA}, P_{OUT}=8.0\text{ W}, F=300, 324\text{ MHz}$
Input Return Loss	RL	9	-	dB	$V_{CC}=26\text{ V}, I_{CQ}=10\text{ mA}, P_{OUT}=8.0\text{ W}, F=300, 324\text{ MHz}$
Load Mismatch Tolerance	VSWR-T	-	3:1	-	$V_{CC}=26\text{ V}, I_{CQ}=10\text{ mA}, P_{OUT}=8.0\text{ W}, F=300, 324\text{ MHz}$

Features

- NPN Silicon Power Transistor
- Common Emitter Configuration
- Class AB Linear Operation
- Diffused Emitter Ballasting Resistors
- Gold Metallization System
- Internal Input Impedance Matching
- Hermetic Metal/Ceramic Package

Outline Drawing



UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ±.005" (MILLIMETERS ±.13MM)

Absolute Maximum Ratings at 25°C

Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V_{CES}	60	V
Emitter-Base Voltage	V_{EBO}	3.5	V
Collector Current	I_C	4	A
Power Dissipation	P_D	103	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +200	°C
Thermal Resistance	θ_{JC}	1.7	°C/W

Electrical Characteristics at 25°C

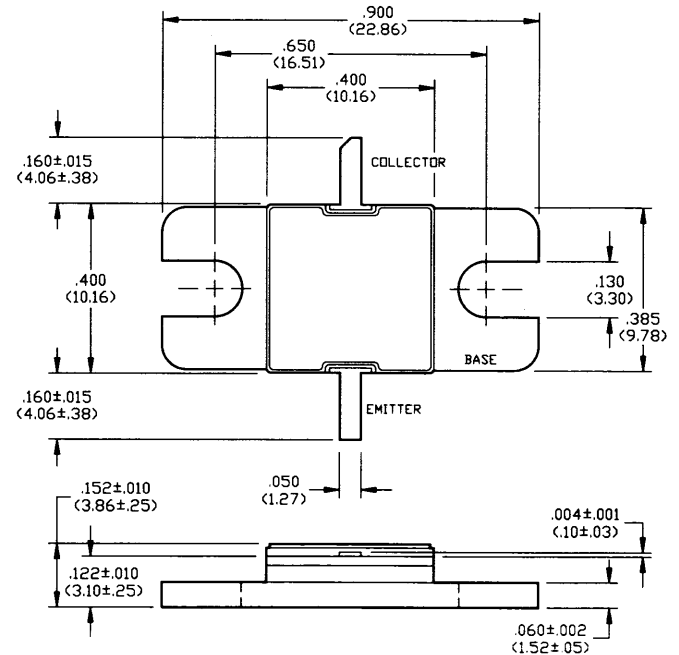
Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	60	-	V	$I_C=50\text{ mA}, V_{BE}=0.0\text{ V}$
Base-Emitter Breakdown Voltage	BV_{EBO}	3.5	-	V	$I_B=5.0\text{ mA}, I_C=0.0\text{ A}$
Collector-Emitter Leakage Current	I_{CES}	-	2.5	mA	$V_{CE}=30\text{ V}$
DC Forward Current Gain	h_{FE}	20	85	-	$V_{CE}=5.0\text{ V}, I_C=500\text{ mA}$
Input Power	P_{IN}	-	3.7	W	$V_{CC}=26\text{ V}, I_{CO}=50\text{ mA}, P_{OUT}=37\text{ W}, F=300, 325\text{ MHz}$
Power Gain	G_p	10	-	dB	$V_{CC}=26\text{ V}, I_{CO}=50\text{ mA}, P_{OUT}=37\text{ W}, F=300, 325\text{ MHz}$
Collector Efficiency	η_C	55	-	%	$V_{CC}=26\text{ V}, I_{CO}=50\text{ mA}, P_{OUT}=37\text{ W}, F=300, 325\text{ MHz}$
Input Return Loss	RL	9	-	dB	$V_{CC}=26\text{ V}, I_{CO}=50\text{ mA}, P_{OUT}=37\text{ W}, F=300, 325\text{ MHz}$
Load Mismatch Tolerance	VSWR-T	-	3:1	-	$V_{CC}=26\text{ V}, I_{CO}=50\text{ mA}, P_{OUT}=37\text{ W}, F=300, 325\text{ MHz}$

7 Watts, 0.420-0.450 GHz, 20 ms Pulse, 20% Duty

Features

- NPN Silicon Microwave Power Transistor
- Common Emitter Configuration
- Broadband Class C Operation
- Reliable Fishbone Geometry
- Diffused Emitter Ballasting Resistors
- Gold Metallization System
- Internal Input Impedance Matching
- Hermetic Metal/Ceramic Package

Outline Drawing



UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ± 0.005
(MILLIMETERS ± 0.13 MM)

Absolute Maximum Ratings at 25°C

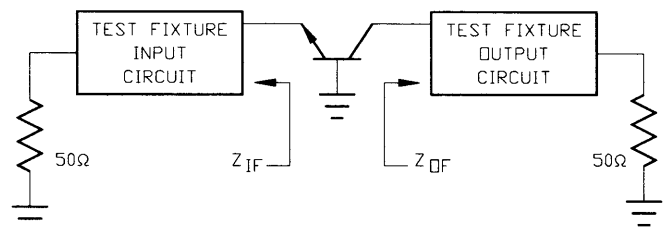
Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V_{CES}	65	V
Emitter-Base Voltage	V_{EBO}	3.5	V
Collector Current (Peak)	I_C	0.510	mA
Power Dissipation	P_D	16.6	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +200	°C

Electrical Characteristics at 25°C

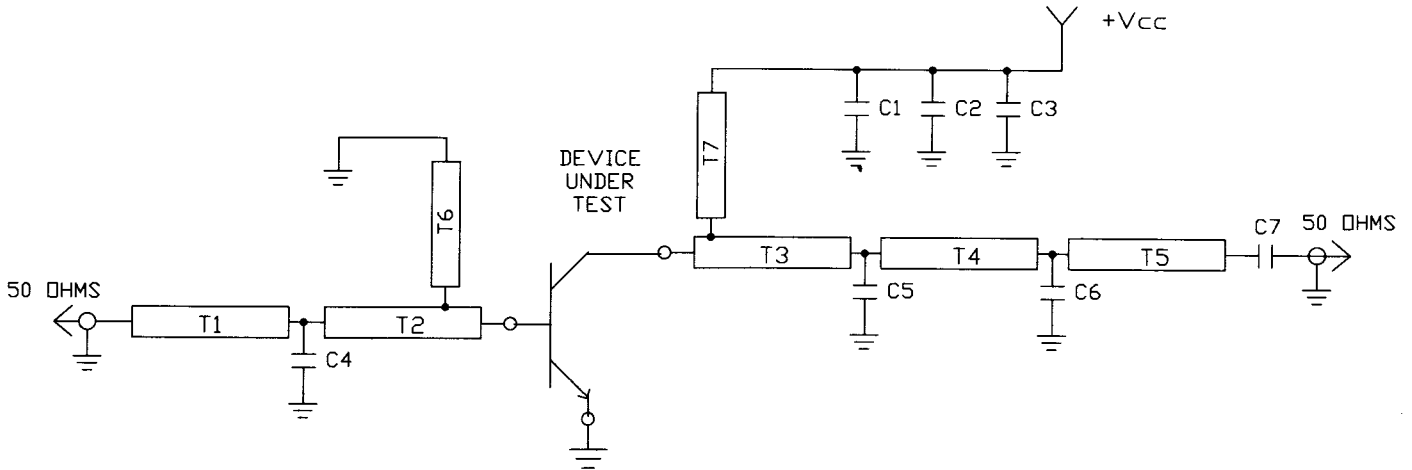
Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	65	-	V	$I_C=5$ mA
Collector-Emitter Leakage Current	I_{CES}	-	1.0	mA	$V_{CE}=31.5$ V
Thermal Resistance	$R_{TH(JC)}$	-	9.1	°C/W	$V_{CC}=31.5$ V, $P_{OUT}=7.0$ W, $F=0.420, 0.450$ GHz
Input Power	P_{IN}	-	2.0	W	$V_{CC}=31.5$ V, $P_{OUT}=7.0$ W, $F=0.420, 0.450$ GHz
Power Gain	G_p	5.4	-	dB	$V_{CC}=31.5$ V, $P_{OUT}=7.0$ W, $F=0.420, 0.450$ GHz
Collector Efficiency	η_c	55	-	%	$V_{CC}=31.5$ V, $P_{OUT}=7.0$ W, $F=0.420, 0.450$ GHz
Input Return Loss	RL	10	-	dB	$V_{CC}=31.5$ V, $P_{OUT}=7.0$ W, $F=0.420, 0.450$ GHz
Load Mismatch Tolerance	VSWR-T	-	3:1	-	$V_{CC}=31.5$ V, $P_{OUT}=7.0$ W, $F=0.420, 0.450$ GHz
Load Mismatch Stability	VSWR-S	-	1.5:1	-	$V_{CC}=31.5$ V, $P_{OUT}=7.0$ W, $F=0.420, 0.450$ GHz

Broadband Test Fixture Impedances

F(GHz)	$Z_{IF}(\Omega)$	$Z_{OF}(\Omega)$
0.42	$14 - j4.7$	$6.3 + j6.6$
0.45	$11 - j1.1$	$7.1 + j7.1$



Test Fixture Electrical Schematic



COMPONENT LIST

T1,T2,T3,T4,T5: PRINTED LINE FOR FIXED BROADBAND MATCHING
 T6,T7: PRINTED 1/4 WAVE STUB FOR BIAS
 C1,C2,C3,C7: BYPASS CAPACITORS
 C4,C5,C6: MATCHING CAPACITORS



30 Watts, 0.420-0.450 GHz, 20 ms Pulse, 20% Duty

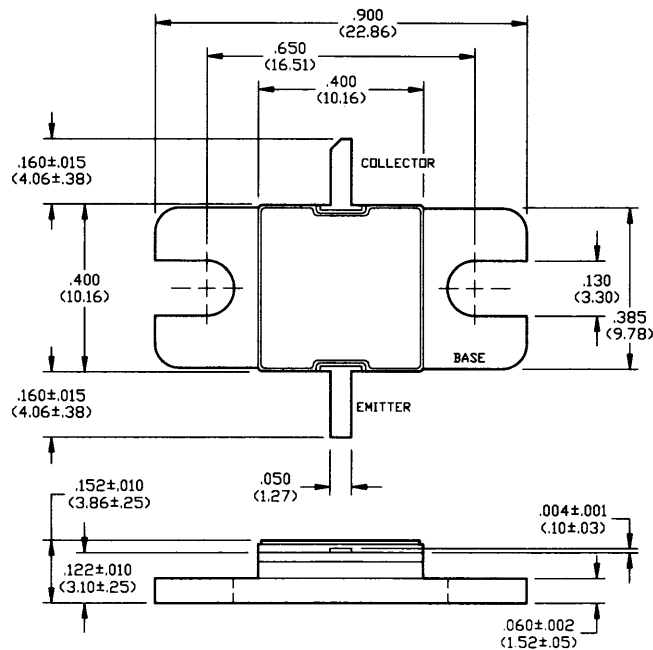
Features

- NPN Silicon Microwave Power Transistor
- Common Base Configuration
- Broadband Class C Operation
- Reliable Fishbone Geometry
- Diffused Emitter Ballasting Resistors
- Gold Metallization System
- Internal Input Impedance Matching
- Hermetic Metal/Ceramic Package

Absolute Maximum Ratings at 25°C

Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V_{CES}	65	V
Emitter-Base Voltage	V_{EBO}	3.5	V
Collector Current (Peak)	I_C	1.8	A
Power Dissipation	P_D	51	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +200	°C

Outline Drawing



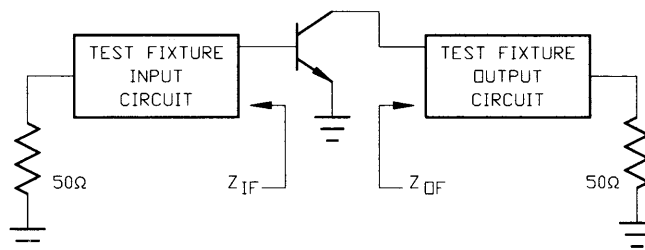
UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ±.005" (MILLIMETERS ±.13MM)

Electrical Characteristics at 25°C

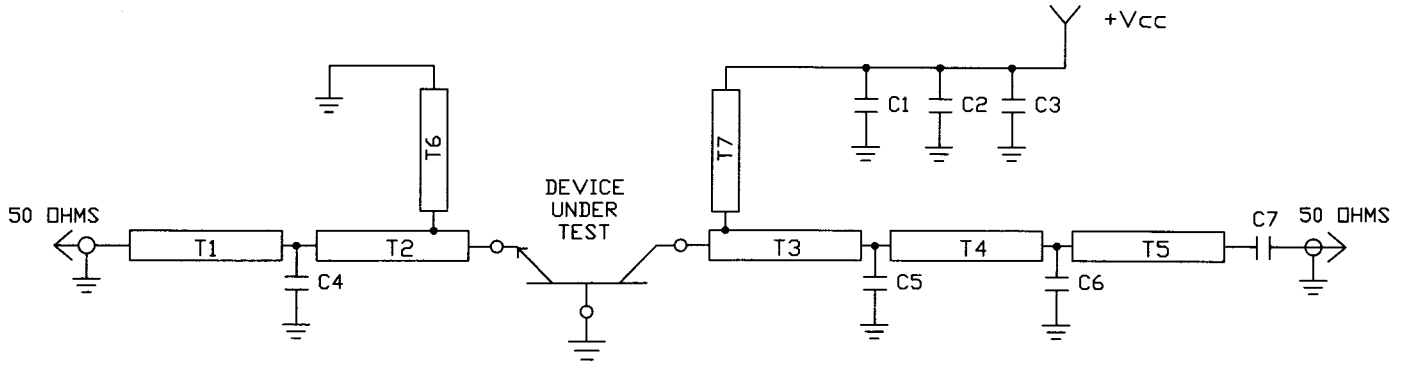
Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	65	-	V	$I_C=10$ mA
Collector-Emitter Leakage Current	I_{CES}	-	2.0	mA	$V_{CE}=31.5$ V
Thermal Resistance	$R_{TH(JC)}$	-	2.9	°C/W	$V_{CC}=31.5$ V, $P_{OUT}=30$ W, $F=0.420, 0.450$ GHz
Input Power	P_{IN}	-	4.0	W	$V_{CC}=31.5$ V, $P_{OUT}=30$ W, $F=0.420, 0.450$ GHz
Power Gain	G_P	8.7	-	dB	$V_{CC}=31.5$ V, $P_{OUT}=30$ W, $F=0.420, 0.450$ GHz
Collector Efficiency	η_C	55	-	%	$V_{CC}=31.5$ V, $P_{OUT}=30$ W, $F=0.420, 0.450$ GHz
Input Return Loss	RL	10	-	dB	$V_{CC}=31.5$ V, $P_{OUT}=30$ W, $F=0.420, 0.450$ GHz
Load Mismatch Tolerance	VSWR-T	-	3:1	-	$V_{CC}=31.5$ V, $P_{OUT}=30$ W, $F=0.420, 0.450$ GHz
Load Mismatch Stability	VSWR-S	-	1.5:1	-	$V_{CC}=31.5$ V, $P_{OUT}=30$ W, $F=0.420, 0.450$ GHz

Broadband Test Fixture Impedances

F(GHz)	$Z_{IF}(\Omega)$	$Z_{OF}(\Omega)$
0.42	10.3 - j8.1	9.6 + j5.6
0.45	10.9 - j8.5	8.6 + j4.0



Broadband Test Fixture Electrical Schematic



COMPONENT LIST

- T1,T2,T3,T4,T5: PRINTED LINE FOR FIXED BROADBAND MATCHING
- T6,T7: PRINTED 1/4 WAVE STUB FOR BIAS
- C1,C2,C3,C7: BYPASS CAPACITORS
- C4,C5,C6: MATCHING CAPACITORS



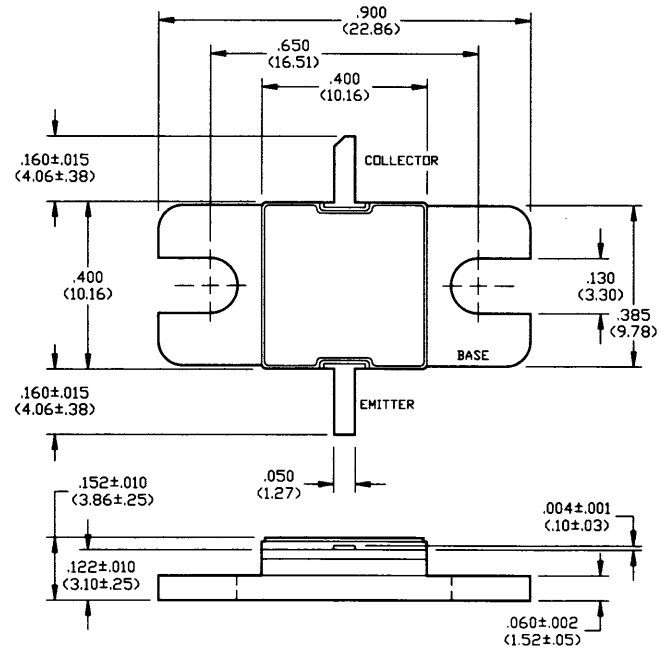
Features

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

Absolute Maximum Ratings at 25°C

Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V_{CES}	65	V
Emitter-Base Voltage	V_{EBO}	3.5	V
Collector Current (Peak)	I_C	5.8	A
Power Dissipation at 25°C	P_D	165	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +200	°C

Outline Drawing



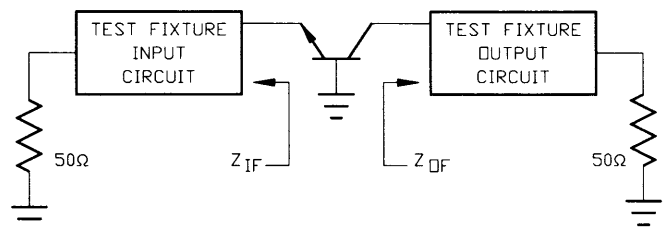
UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ±.005* (MILLIMETERS ±.13MM)

Electrical Characteristics at 25°C

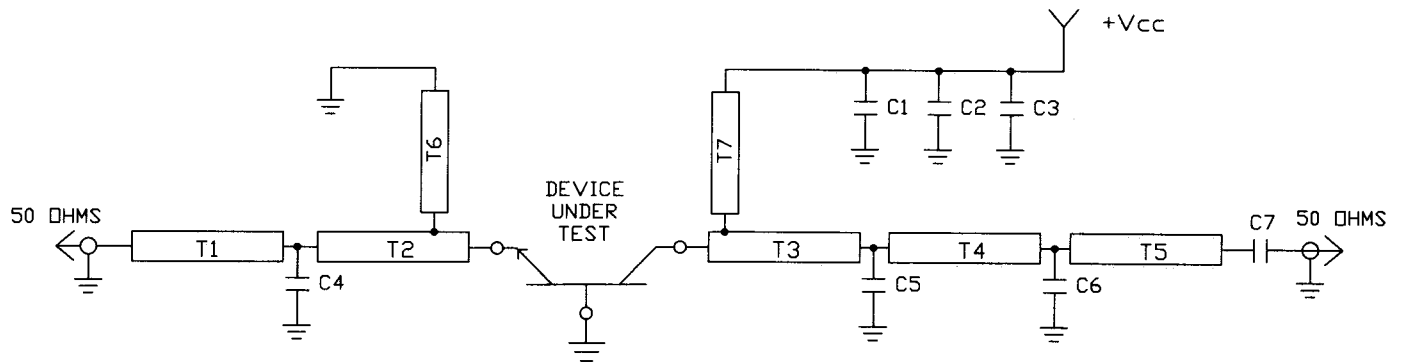
Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	65	-	V	$I_C=20$ mA
Collector-Emitter Leakage Current	I_{CES}	-	4.0	mA	$V_{CE}=31.5$ V
Thermal Resistance	$R_{TH(JC)}$	-	0.9	°C/W	$V_{CC}=31.5$ V, $P_{OUT}=100$ W, $F=0.420, 0.450$ GHz
Input Power	P_{IN}	-	18	W	$V_{CC}=31.5$ V, $P_{OUT}=100$ W, $F=0.420, 0.450$ GHz
Power Gain	G_P	7.5	-	dB	$V_{CC}=31.5$ V, $P_{OUT}=100$ W, $F=0.420, 0.450$ GHz
Collector Efficiency	η_C	55	-	%	$V_{CC}=31.5$ V, $P_{OUT}=100$ W, $F=0.420, 0.450$ GHz
Input Return Loss	RL	10	-	dB	$V_{CC}=31.5$ V, $P_{OUT}=100$ W, $F=0.420, 0.450$ GHz
Load Mismatch Tolerance	VSWR-T	-	3:1	-	$V_{CC}=31.5$ V, $P_{OUT}=100$ W, $F=0.420, 0.450$ GHz
Load Mismatch Stability	VSWR-S	-	1.5:1	-	$V_{CC}=31.5$ V, $P_{OUT}=100$ W, $F=0.420, 0.450$ GHz

Broadband Test Fixture Impedances

F(GHz)	$Z_{IF}(\Omega)$	$Z_{OF}(\Omega)$
0.42	5.6 - j4.5	5.5 - j2.3
0.45	4.8 - j2.7	4.9 - j0.1



Broadband Test Fixture Electrical Schematic

COMPONENT LIST

T1,T2,T3,T4,T5: PRINTED LINE FOR FIXED BROADBAND MATCHING
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 C1,C2,C3,C7: BYPASS CAPACITORS
 C4,C5,C6: MATCHING CAPACITORS