ADVANCED POWER TECHNOLOGY RF®

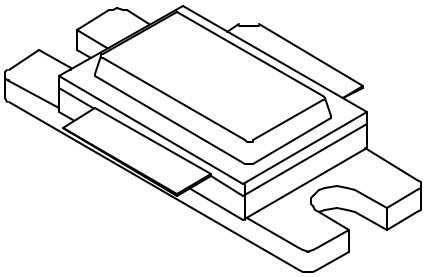
1214 – 370M

370 Watts - 50 Volts, 330 µs, 10%
Radar 1200 - 1400 MHz

GENERAL DESCRIPTION

The 1214-370M is an internally matched, COMMON BASE transistor capable of providing 370 Watts of pulsed RF output power at 330 microseconds pulse width, ten percent duty factor across the band 1200 to 1400 MHz. This hermetically solder-sealed transistor is specifically designed for L-Band radar applications. It utilizes gold metallization and diffused emitter ballasting to provide high reliability and supreme ruggedness.

CASE OUTLINE
55ST, STYLE 1



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C[1]		600 Watts
Maximum Voltage and Current		
BVces	Collector to Emitter Voltage	75 Volts
BVebo	Emitter to Base Voltage	3.0 Volts
Ic	Collector Current	25 Amps
Maximum Temperatures		
Storage Temperature		- 65 to + 200°C
Operating Junction Temperature		+ 200°C

ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out (Note 2) Pulsed	F = 1200-1400 MHz Vcc = 50 Volts,	370		460	Watts
Pg	Power Gain	Pulse Width = 330 µs	8.7	9.0		dB
ηc	Collector Efficiency	Duty = 10 %	50			%
Pd	Pulse Amplitude Droop	As above			0.5	dB
VSWR[1]	Load Mismatch Tolerance	F = 1400MHz, Po =370W			2:1	

**** Design Target**

Bvces	Collector to Emitter Breakdown	Ic = 40 mA	75			Volts
Ices	Collector to Emitter Leakage	Vce = 50 Volts			10	mA
Iebo	Emitter to Base Leakage Current	Veb = 3.0 Volts			5	mA
Hfe	DC Current Gain	Vce = 5 V, Ic = 5 A	10	45		
θjc[1]	Thermal Resistance	Rated Pulse Condition			0.29	°C/W

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Note 1: Pulse width = 330 us, duty = 10%

Note 2: Power Input = 50 Watts Peak Pulsed

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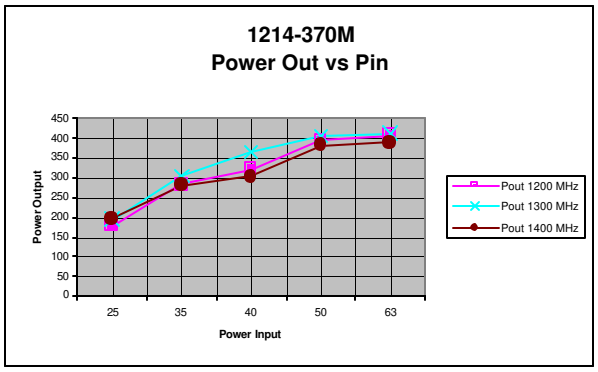
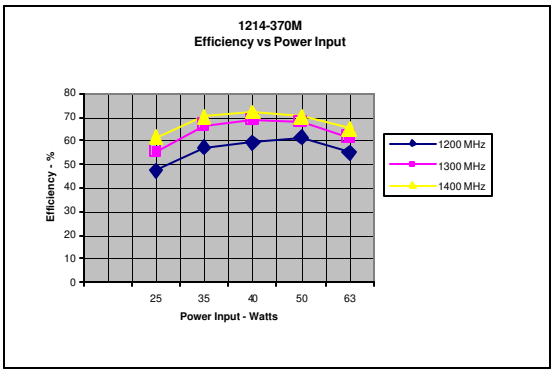
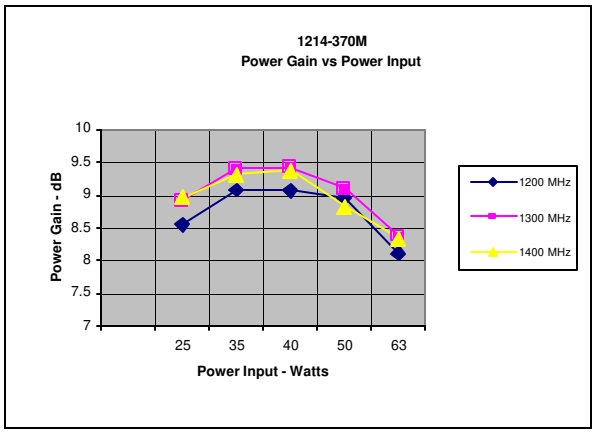
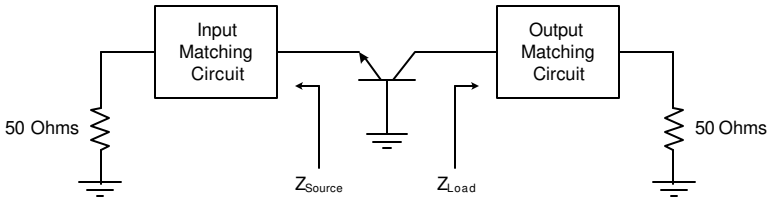
Performance Curves







Impedance Information



Impedance		
Freq	Zs	Zl
1200	1.75-j2.23	1.52-j2.11
1300	1.75-j1.63	1.36-j1.97
1400	1.76-j1.19	1.13-j1.77

Board Material RT 6010.5 LM 25 Mil
TRL Measurement

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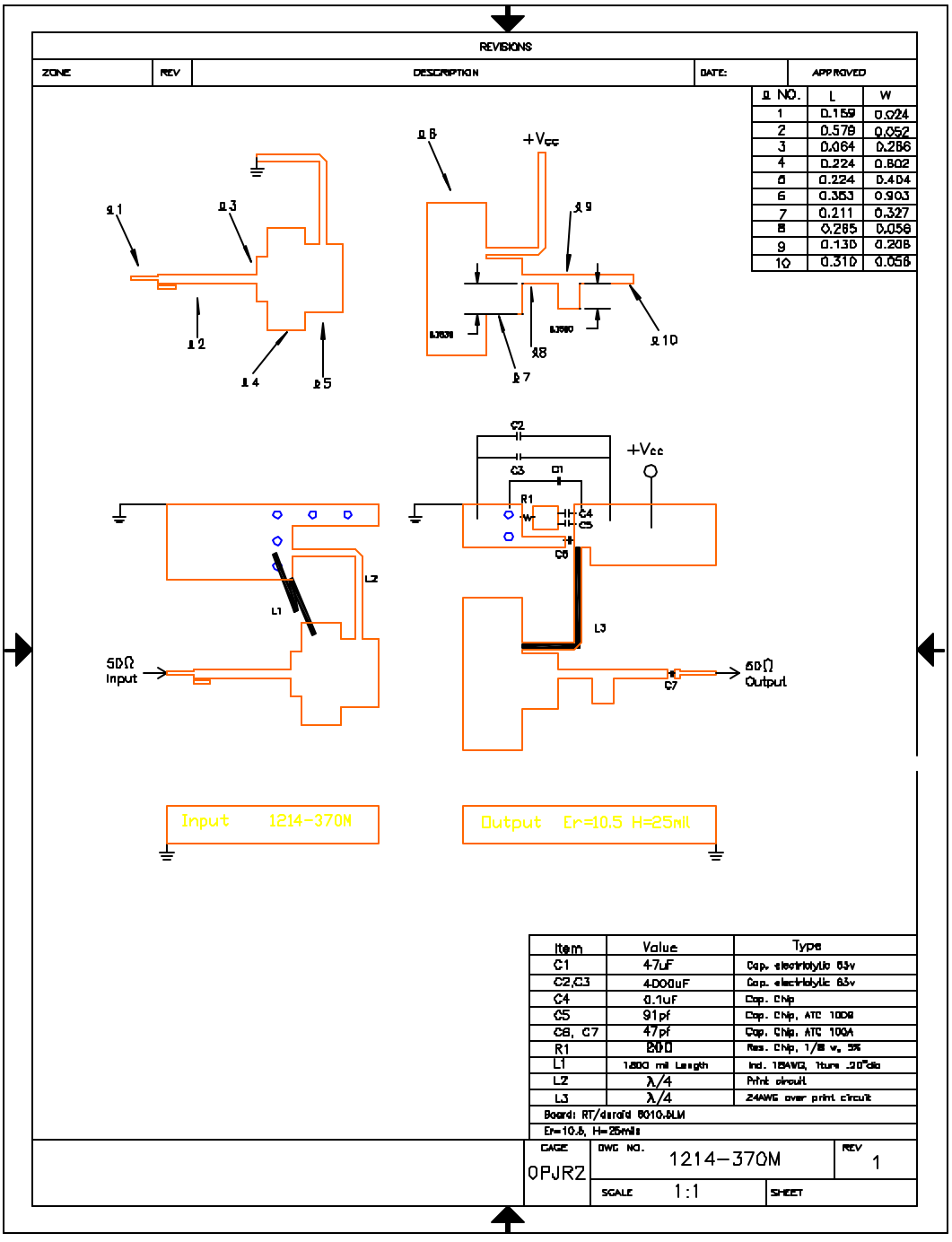
Broadband Test Fixture



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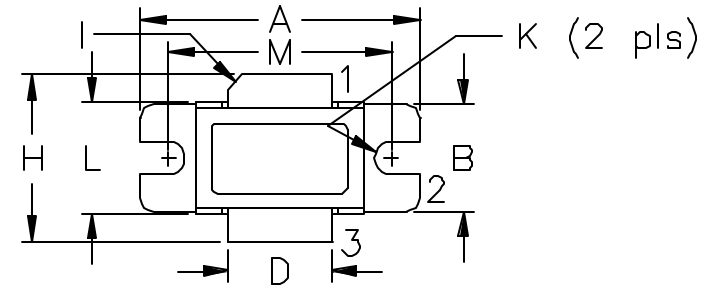
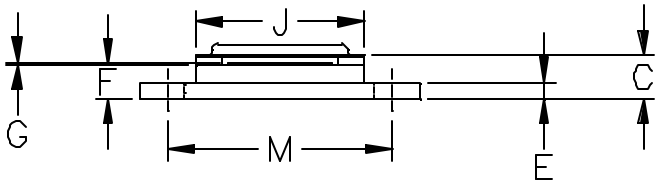
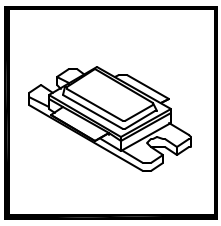




DIM	MILLIMETER	±TOL	INCHES	±TOL
A	25.40	.25	1.000	.010
B	9.78	.25	.385	.010
C	4.00	.19	.142	.007
D	9.40	.13	.370	.005
E	1.53	.13	.060	.005
F	3.18	.13	.125	.005
G	0.08	+.05/-.00	.003	+.002/-.000
H	19.05	0.51	.750	.020
I	45°	5°	45°	5°
J	15.24	.25	.600	.010
K	3.05 DIA	.13	.120 DIA	.005
L	10.15	.13	.400	.005
M	20.32	.25	.800	.010

STYLE 1:
PIN 1 = COLLECTOR
2 = BASE
3 = EMITTER

STYLE 2:
PIN 1 = COLLECTOR
2 = EMITTER
3 = BASE



GHz TECHNOLOGY
RF – MICROWAVE SILICON POWER TRANSISTORS

DWG NO. 55ST

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