



1214 – 370M

370 Watts - 50 Volts, 330 μ s, 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.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C¹ 600 Watts

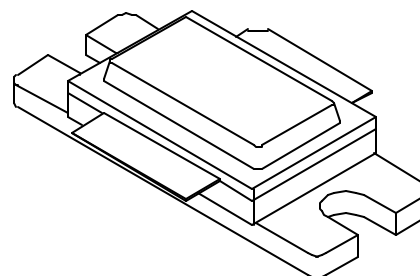
Maximum Voltage and Current

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

CASE OUTLINE 55ST, STYLE 1



ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P_{out}	Power Out (Note 2) Pulsed	F = 1200-1400 MHz V _{cc} = 50 Volts,	370		460	Watts
P_g	Power Gain	Pulse Width = 330 μ s	8.7	9.0		dB
η_c	Collector Efficiency	Duty = 10 %	50			%
P_d	Pulse Amplitude Droop	As above			0.5	dB
VSWR¹	Load Mismatch Tolerance	F = 1400MHz, P _o = 370W			2:1	

** Design Target

Bvces	Collector to Emitter Breakdown	I _c = 40 mA	75			Volts
Ices	Collector to Emitter Leakage	V _{ce} = 50 Volts			10	mA
Iebo	Emitter to Base Leakage Current	V _{eb} = 3.0 Volts			5	mA
H_{fe}	DC Current Gain	V _{ce} = 5 V, I _c = 5 A	10	45		
θ_{jc}¹	Thermal Resistance	Rated Pulse Condition			0.29	°C/W

Issue April 2005

Note 1: Pulse width = 330 μ s, duty = 10%

Note 2: Power Input = 50 Watts Peak Pulsed

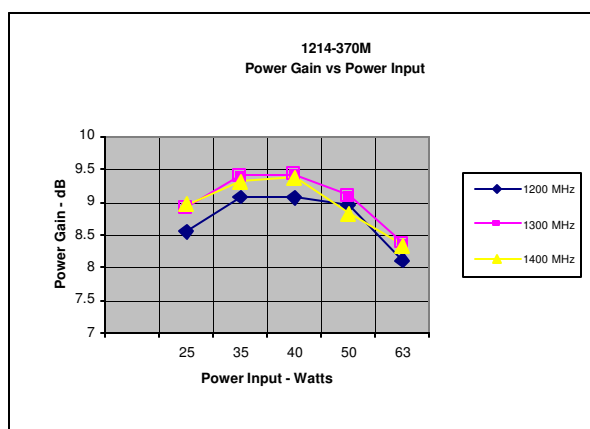
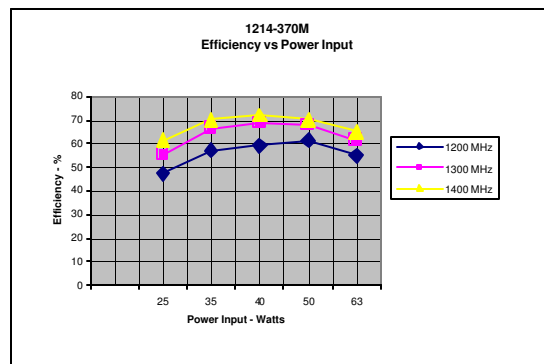
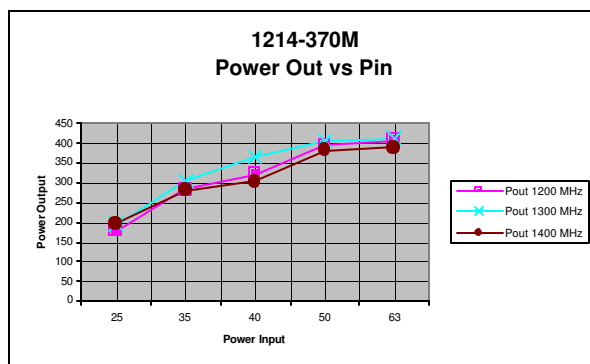
APT-RF, Inc. reserves the right to make changes without further notice. APT-RF recommends that before the product(s) described herein are written into specifications, or used in critical applications, that the performance characteristics be verified by contacting the factory.

APT-RF, Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 TEL. 408-986-8031 FAX 408-869-2324

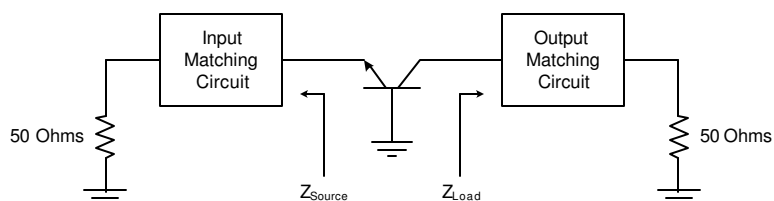


1214-370M

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

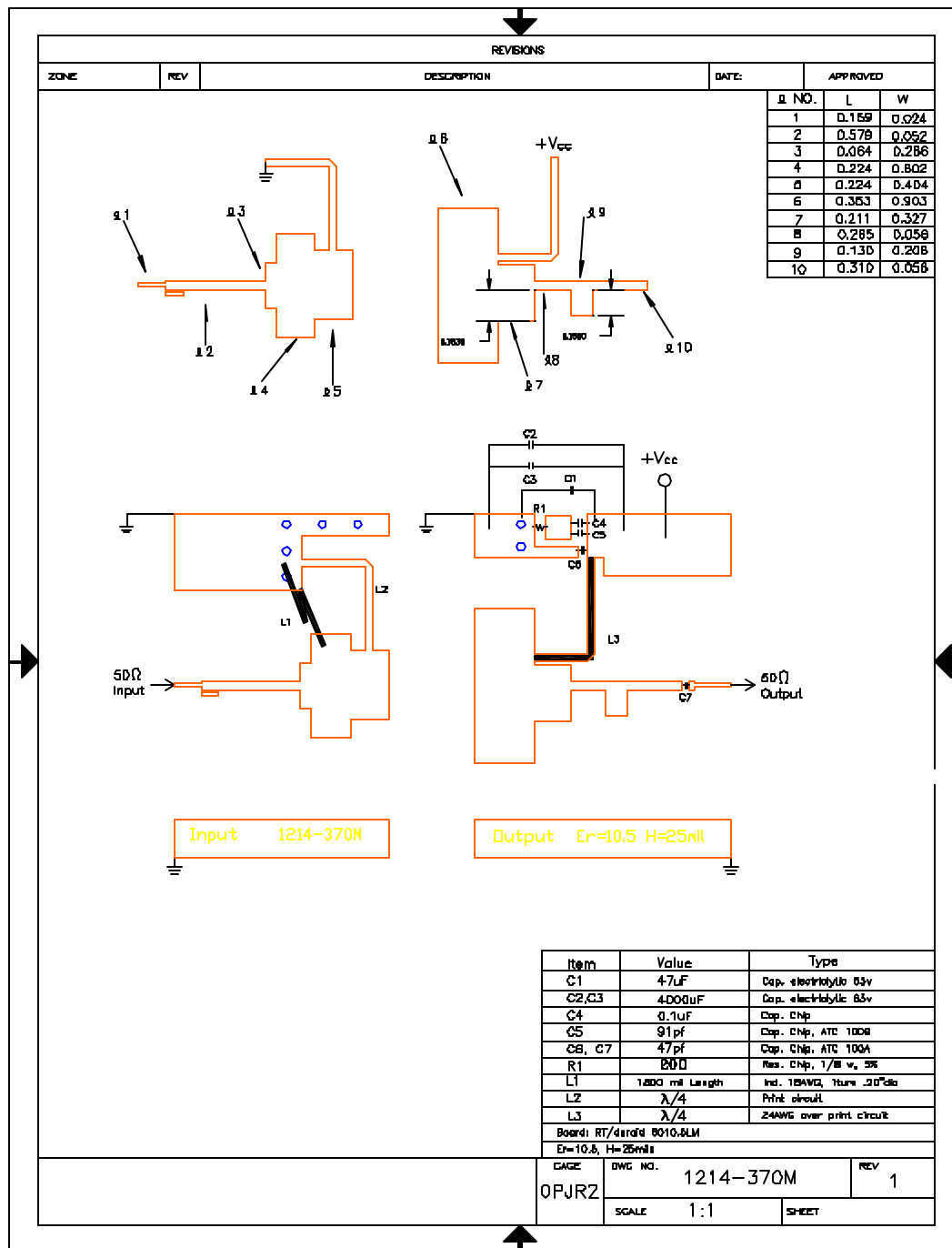
Board Material RT 6010.5 LM 25 Mil
TRL Measurement

APT-RF, Inc. reserves the right to make changes without further notice. APT-RF recommends that before the product(s) described herein are written into specifications, or used in critical applications, that the performance characteristics be verified by contacting the factory.

APT-RF, Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 TEL. 408-986-8031 FAX 408-869-2324

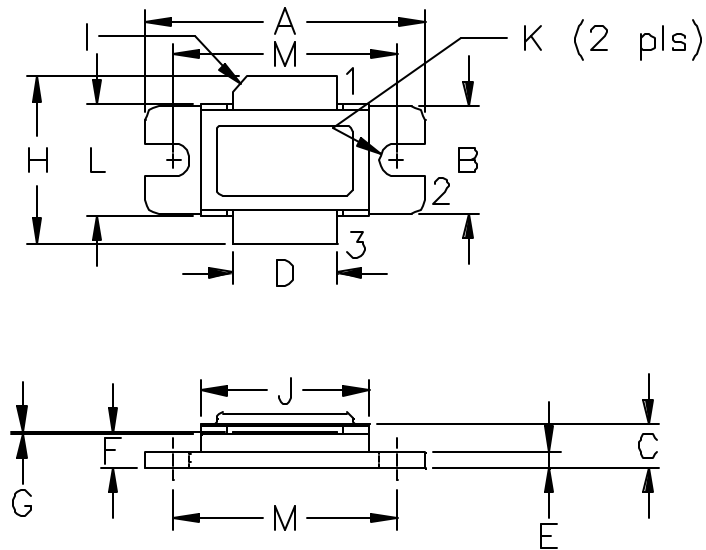
1214-370M

Broadband Test Fixture



APT-RF, Inc. reserves the right to make changes without further notice. APT-RF recommends that before the product(s) described herein are written into specifications, or used in critical applications, that the performance characteristics be verified by contacting the factory.

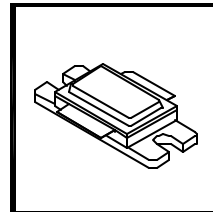
APT-RF, Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 TEL. 408-986-8031 FAX 408-869-2324



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	$\pm .05/- .00$	.003	$\pm .002/- .000$
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



CHz TECHNOLOGY
 RF - MICROWAVE SILICON POWER TRANSISTORS

DWG NO.

55ST