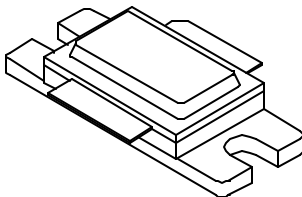


1214 – 220M

220 Watts - 40 Volts, 150μs, 10%
Radar 1200 - 1400 MHz

Final Proof

GENERAL DESCRIPTION The 1214-220M is an internally matched, COMMON BASE transistor capable of providing 220 Watts of pulsed RF output power at one hundred fifty 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 700 Watts Maximum Voltage and Current BVces Collector to Emitter Voltage 70 Volts Iebo Emitter to Base Voltage 5 mA Ic Collector Current 20 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 1)	Vcc=40V, Pin=40W, f = 1.2, 1.3, 1.4 GHz	220		290	Watts
Pg	Power Gain	Vcc=40V, Pin=40W, f = 1.2, 1.3, 1.4 GHz	7.4			dB
hc	Collector Efficiency	Vcc=40V, Pin=40W, f = 1.2, 1.3, 1.4 GHz	45	50		%
RI	Input Return loss	Vcc=40V, Pin=40W, f = 1.2, 1.3, 1.4 GHz	9			dB
VSWR ¹	Load Mismatch Tolerance	Vcc=40V, Pin=40W, f = 1.2 GHz			3:1	
VSWRs	Load Mismatch - Stability	Vcc=40V, Pin=40W, f = 1.2 GHz			2:1	

Note 1: Pulse condition of 150μsec, 10%.

BVces	Collector to Emitter Breakdown	Ic = 100 mA	70			Volts
Ices	Collector to Emitter Leakage	Vce = 40 Volts			10	mA
Iebo	Emitter to Base Breakdown	Veb = 3 Volts			5	mA
Hfe	DC Current Gain	Vce = 5 V, Ic = 1 A	10	45		
qjc ¹	Thermal Resistance	Rated Pulse Condition			0.25	°C/W

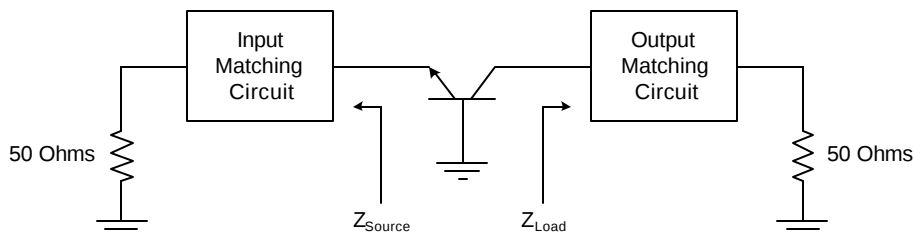
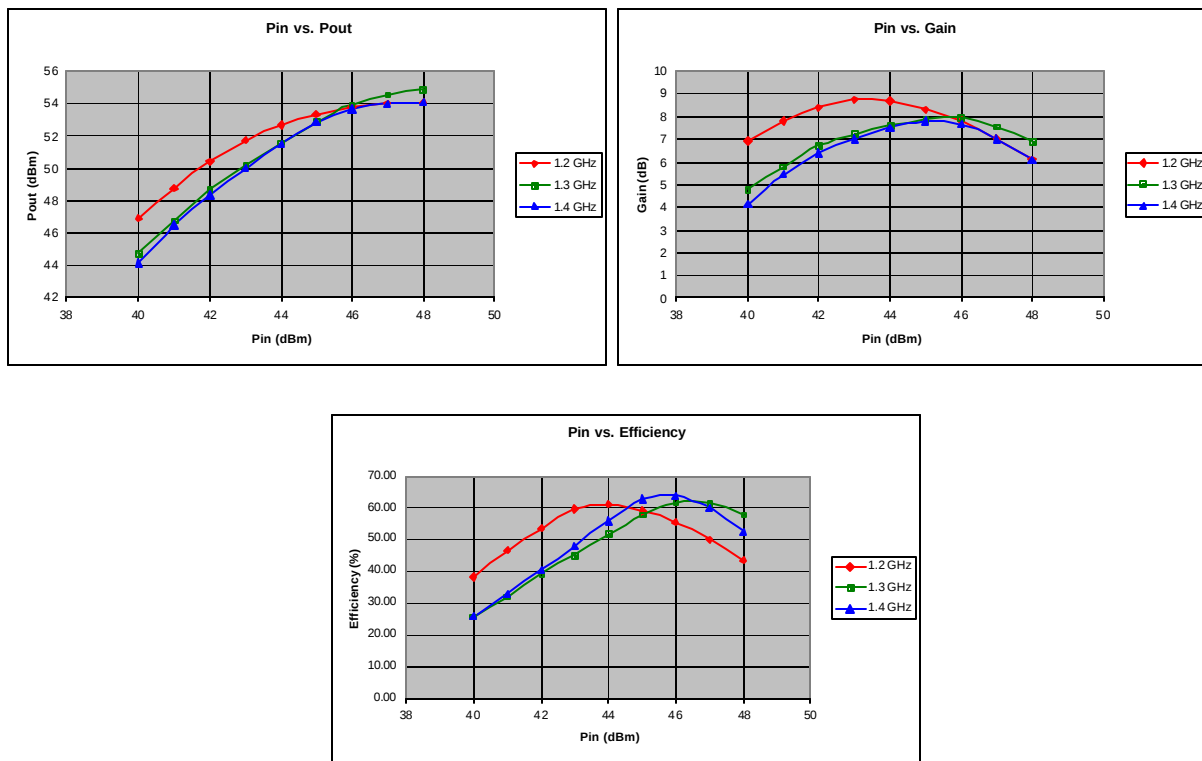
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Issue March 2005

1214 – 220M

Performance Curves



Impedance Information

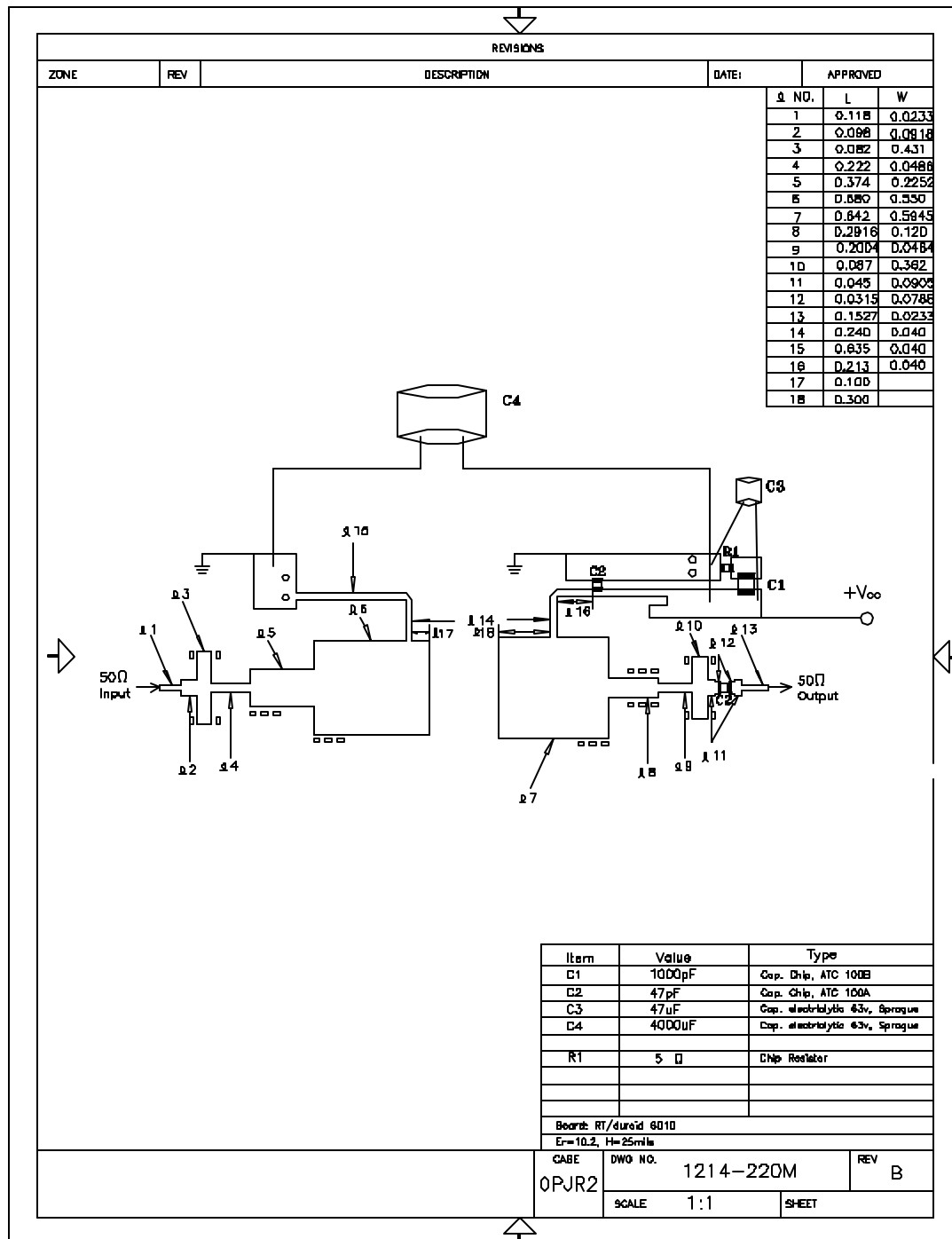
Frequencies (MHz)	$Z_{Source}(\Omega)$	$Z_{Load}(\Omega)$
1200	$3.6 - j0.93$	$2.96 - j1.86$
1300	$2.7 - j1.27$	$2.25 - j2.03$
1400	$1.86 - j0.83$	$1.51 - j1.66$

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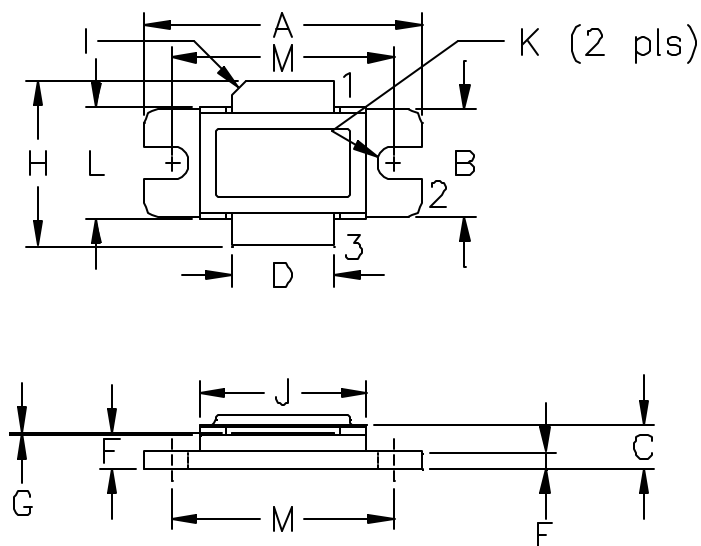
Test Circuit



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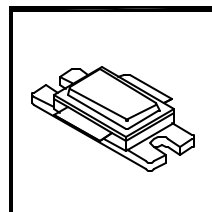
1214 – 220M



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	+.08/- .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



CHz TECHNOLOGY
 RF - MICROWAVE SILICON POWER TRANSISTORS

DWG NO

55ST

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