1214 – 220M

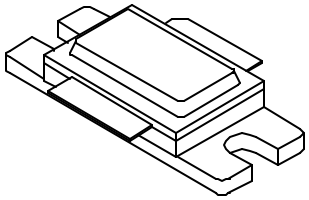
220 Watts - 40 Volts, 150µs, 10%
Radar 1200 - 1400 MHz

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		%
Rl	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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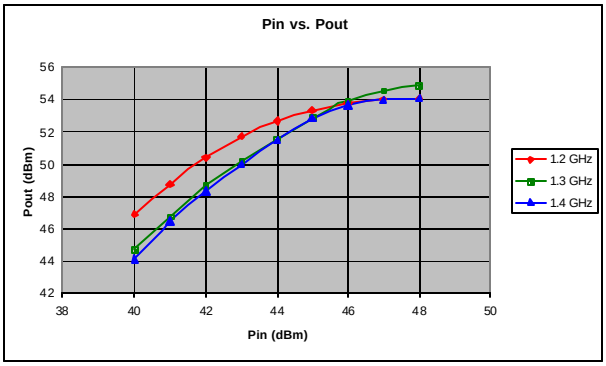
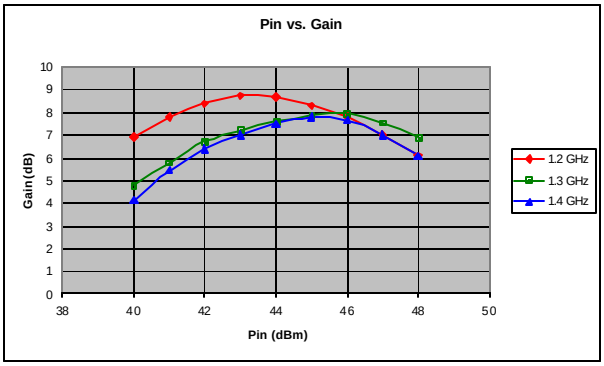
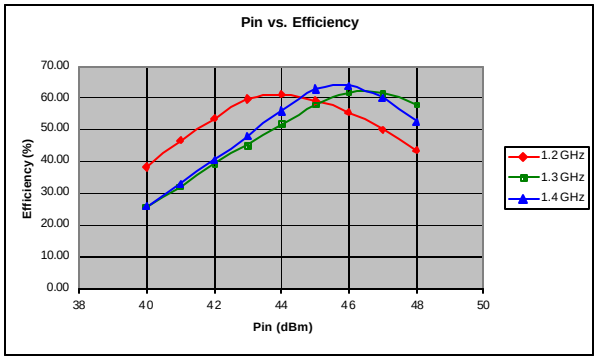
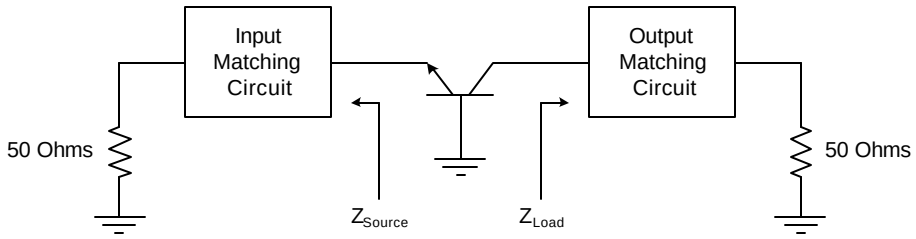
Performance Curves









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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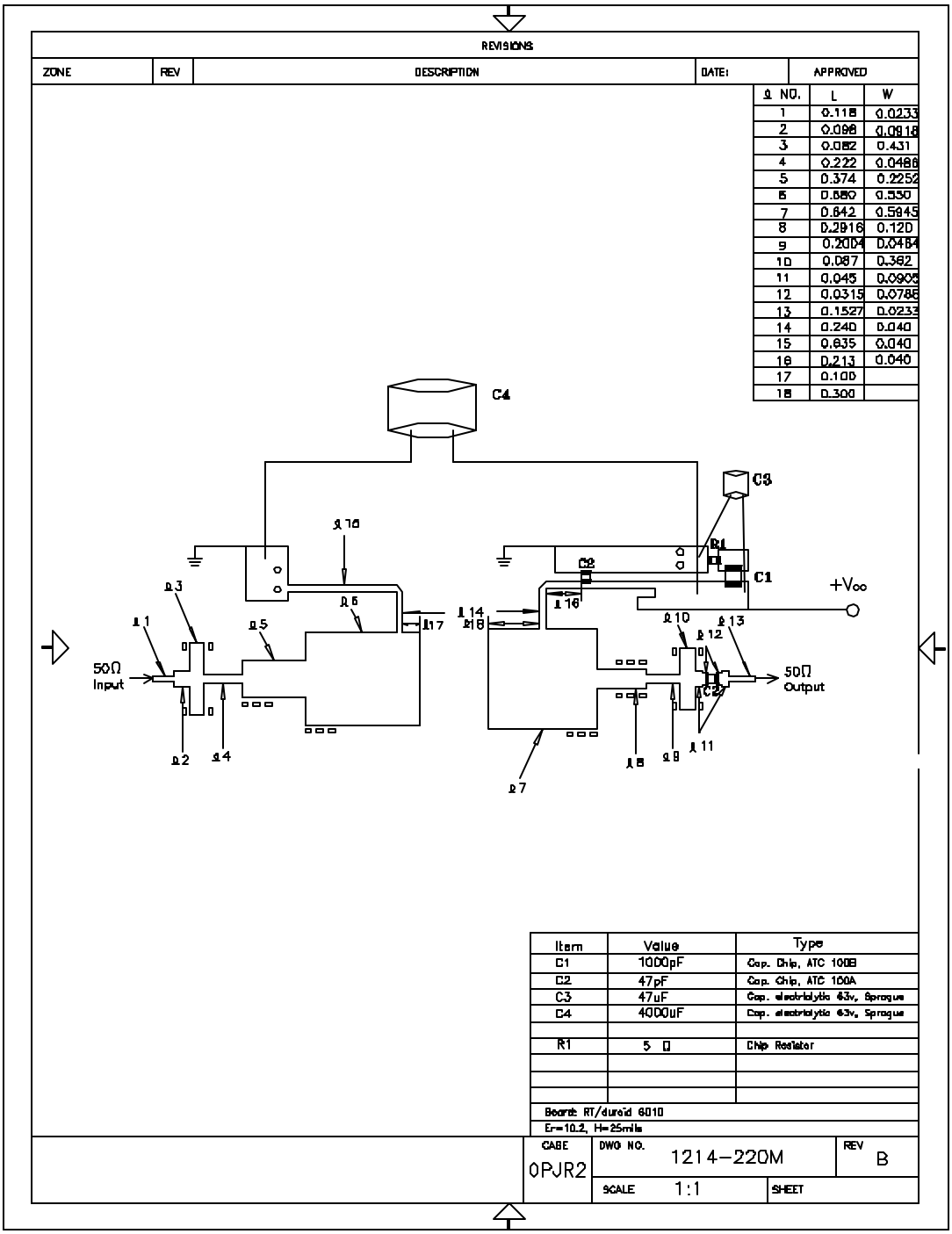
Test Circuit



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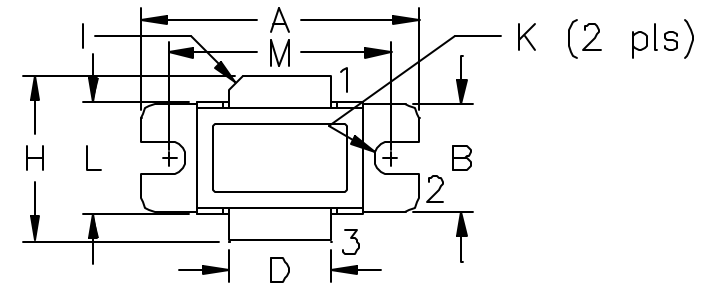
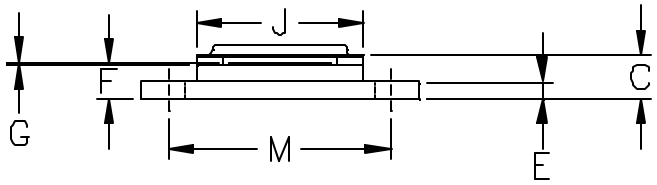
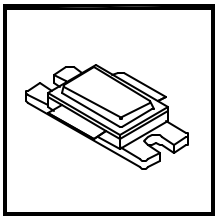




DIM	MILLIMETER	±TOL	INCHES	±TOL
A	25.40	.25	1.000	.010
B	9.78	25	.385	010
C	4.00	.19	.142	.007
D	9.40	.13	.370	.005
E	1.53	13	.060	005
F	3.18	.13	.125	.005
G	0.08	+08/-00	.003	+002/-000
H	19.05	0.51	.750	.020
I	45°	5°	45°	5°
J	15 24	25	.600	010
K	3.05 DIA	.13	.120 DIA	.005
L	10.15	13	.400	005
M	20.32	.25	.800	.010

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

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



GHz TECHNOLOGY
RF – MICROWAVE SILICON POWER TRANSISTORS

DWG NO
55ST

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