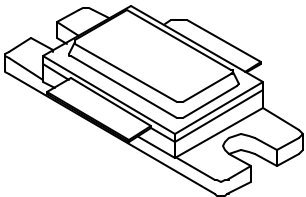




# 1214-150L

150 Watts, 36 Volts, 5 ms, 20%  
Radar 1200 to 1400 MHz

GENERAL DESCRIPTION	CASE OUTLINE 55ST-1
<p>The 1214-150L is an internally matched, COMMON BASE transistor capable of providing 150 Watts of pulsed RF output power at 5 milliseconds pulse width, 20% 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.</p> <p><b>ABSOLUTE MAXIMUM RATINGS</b></p> <p><b>Maximum Power Dissipation</b> Device Dissipation @25°C<sup>1</sup>                      320 W</p> <p><b>Maximum Voltage and Current</b> Collector to Base Voltage (BV<sub>ces</sub>)                70 V Emitter to Base Voltage (BV<sub>ebo</sub>)                3.5 V Collector Current (I<sub>c</sub>)                                15 A</p> <p><b>Maximum Temperatures</b> Storage Temperature                                -65 to +200 °C Operating Junction Temperature                +200 °C</p>	

## ELECTRICAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P <sub>out</sub>	Power Output	F = 1200-1400 MHz	140	150	200	W
P <sub>g</sub>	Power Gain	V <sub>cc</sub> = 36 Volts	7.15		8.7	dB
η <sub>c</sub>	Collector Efficiency	Pin = 27 W	45			%
R <sub>L</sub>	Return Loss	Pulse Width = 5 mS	-9			dB
P <sub>d</sub>	Pulse Droop	Duty Factor = 20%			0.5	dB
VSWR <sup>1</sup>	Load Mismatch Tolerance	F=1200 MHz, Pin = 27W			3.0:1	

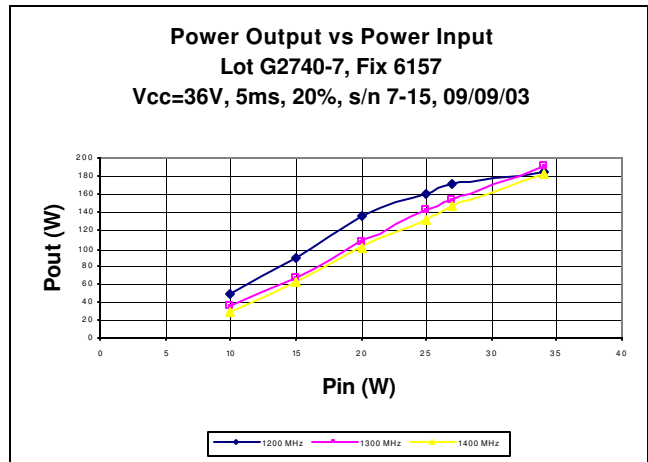
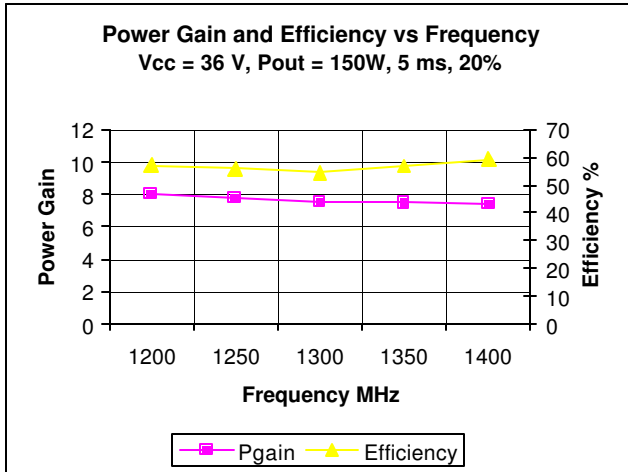
## FUNCTIONAL CHARACTERISTICS @ 25°C

BV <sub>ebo</sub>	Emitter to Base Breakdown	I <sub>c</sub> = 50 mA	3.0			V
BV <sub>ces</sub>	Collector to Emitter Breakdown	I <sub>c</sub> = 100 mA	65			V
h <sub>FE</sub>	DC – Current Gain	V <sub>ce</sub> = 5V, I <sub>c</sub> = 1A	20	55		
θ <sub>jc</sub> <sup>1</sup>	Thermal Resistance				0.55	°C/W

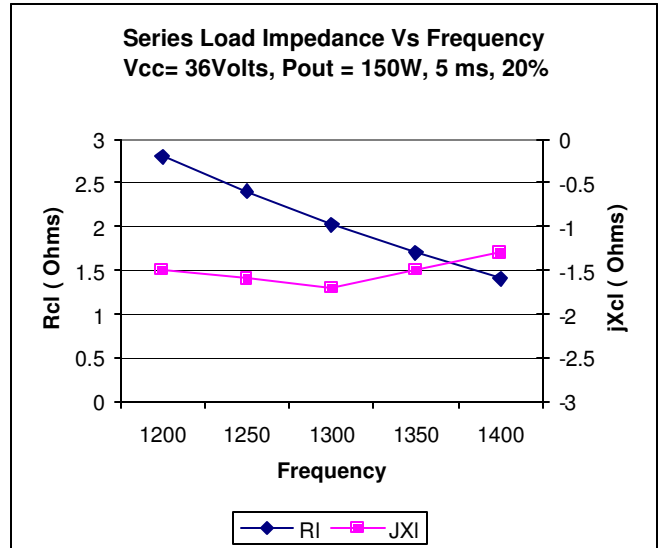
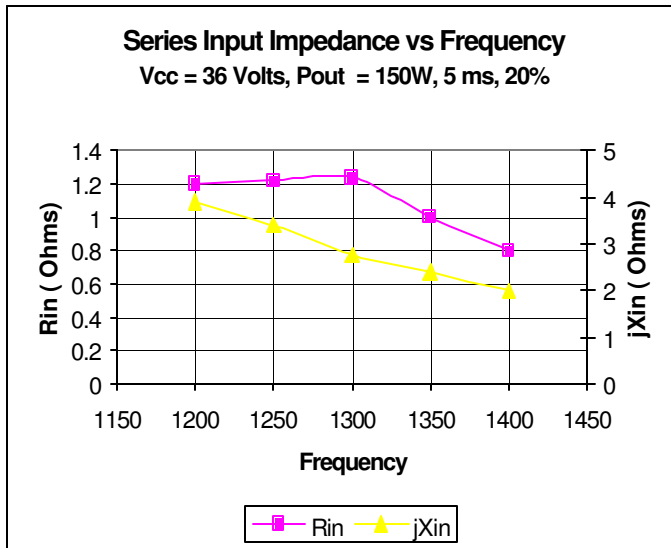
NOTES: 1. Pulse condition of 5 mS, 20%

April 2005

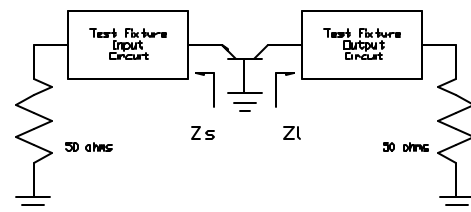
### Performance Curves



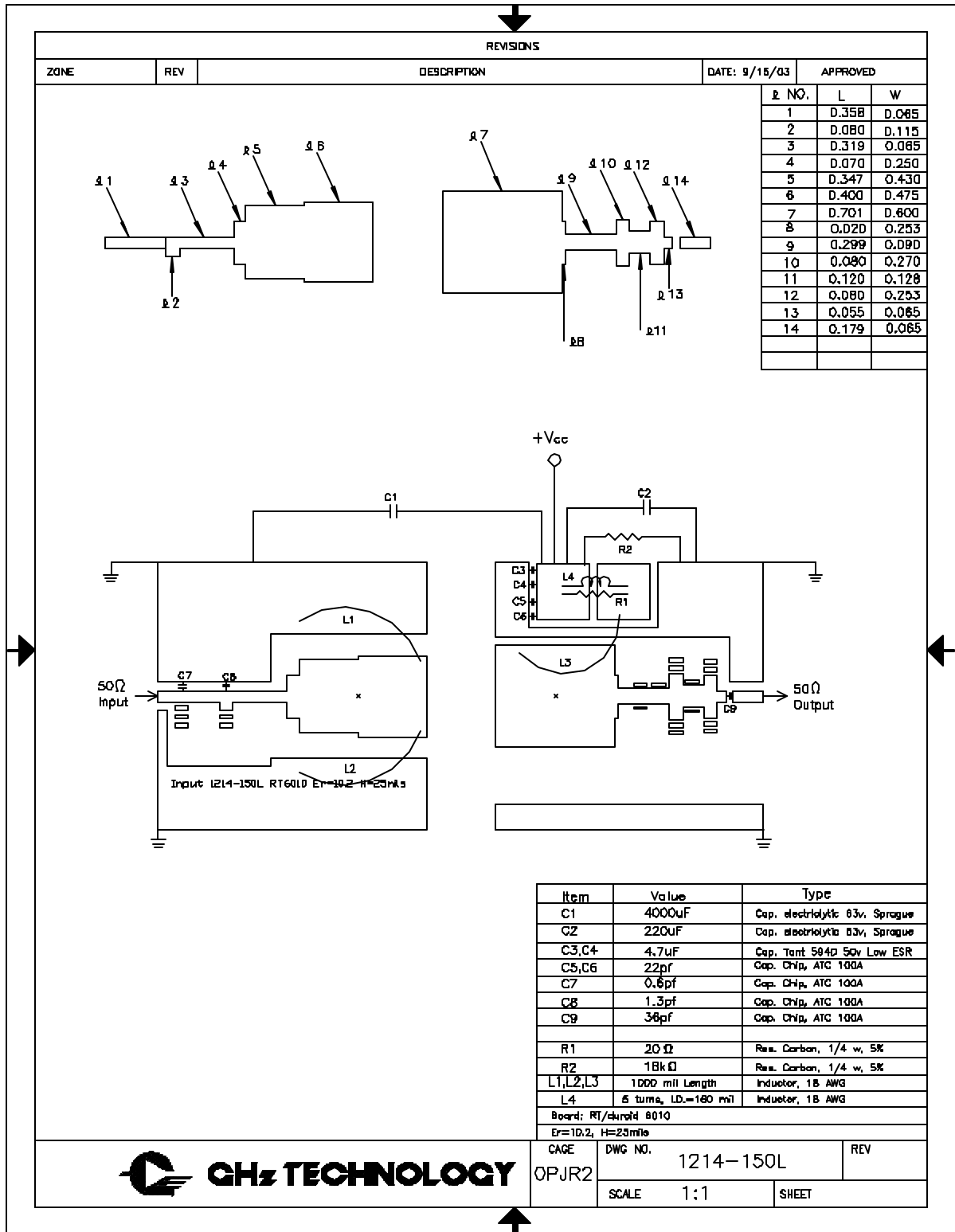
### Typical Impedances



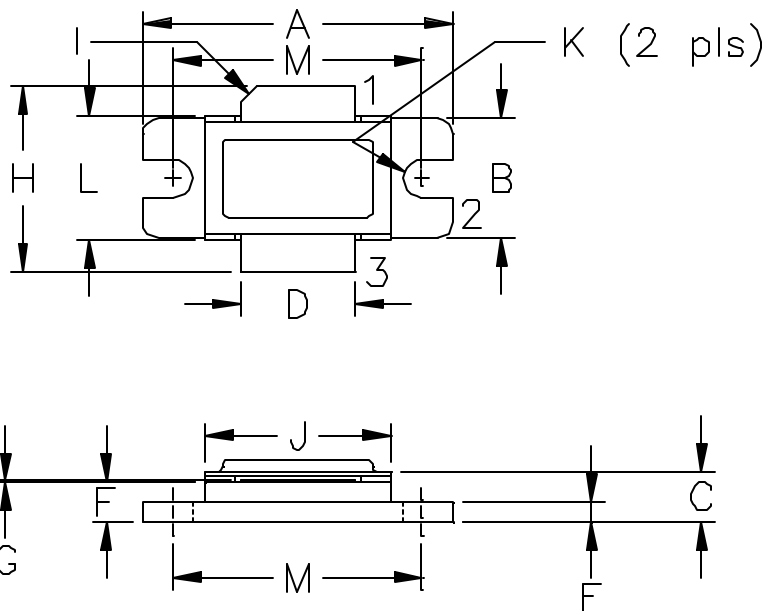
Impedance		
Freq	Zs	Zl
1200	3.9-j1.2	2.8-j1.5
1300	2.77-j1.24	2.02-j1.7
1400	2.0-j0.8	2.02-j1.7



# 1214-150L



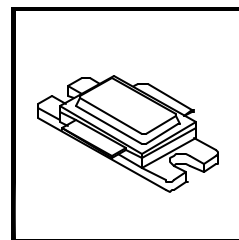
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DIM	MILLIMETER	±TOL	INCHES	±TOL
A	25.40	.25	1.000	.010
B	9.78	.25	.385	.010
C	4.00	.19	.142	.007
D	9.40	.13	.370	.005
E	1.53	.13	.060	.005
F	3.18	.13	.125	.005
G	0.08	+0/-0.00	.003	+0.002/-0.000
H	19.05	0.51	.750	.020
I	45°	5°	45°	5°
J	15.24	.25	.600	.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