



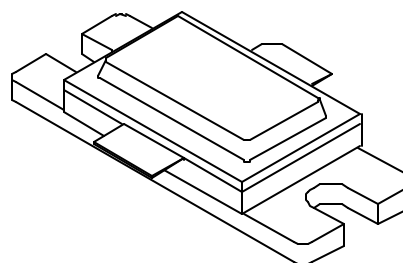
# 1214- 300M

300 Watts - 40 Volts, 150 $\mu$ s, 10%  
Radar 1200 - 1400 MHz

## GENERAL DESCRIPTION

The 1214-300M is an internally matched, COMMON BASE transistor capable of providing 300 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 metalization and diffused emitter ballasting to provide high reliability and supreme ruggedness.

## CASE OUTLINE 55ST, STYLE 1



## ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C 600 Watts

### Maximum Voltage and Current

BVces	Collector to Emitter Voltage	70 Volts
BVebo	Emitter to Base Voltage	3.5 Volts
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
<b>Pout</b>	Power Out	Freq = 1200 – 1400 MHz	300		400	Watts
<b>Pg</b>	Power Gain	Vcc = 40 Volts	8.75			dB
<b>hc</b>	Collector Efficiency	Pin = 40 Watts	50	55		%
<b>RI</b>	Input Return loss		10.0			dB
<b>VSWR<sup>1</sup></b>	Load Mismatch Tolerance	Pulse Width = 150 $\mu$ s			2:1	
<b>VSWRs</b>	Load Mismatch - Stability	Duty Factor = 10%			1.5:1	

Note 1: Pulse condition of 150 $\mu$ sec, 10%.

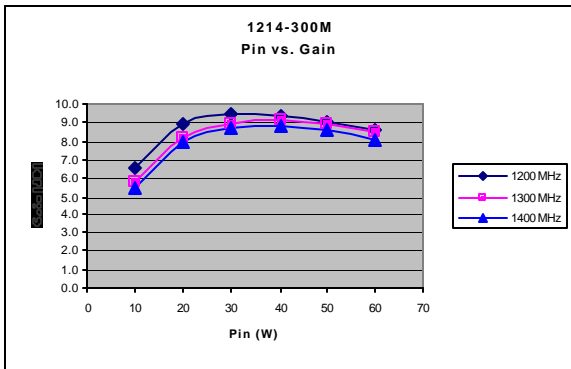
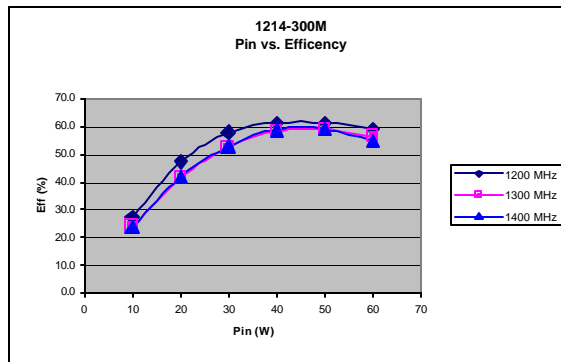
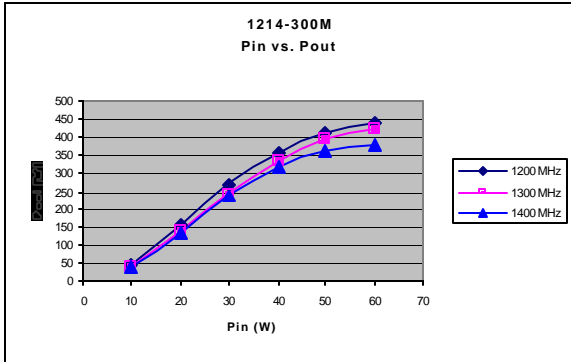
<b>Bvces</b>	Collector to Emitter Breakdown	Ic = 80 mA	70			Volts
<b>Ices</b>	Collector to Emitter Leakage	Vce = 40 Volts			10	mA
<b>Iebo</b>	Emitter to Base Leakage	Vebo = 3.0 Volts			5.0	mA
<b>qjc<sup>1</sup></b>	Thermal Resistance	Rated Pulse Condition			0.29	°C/W

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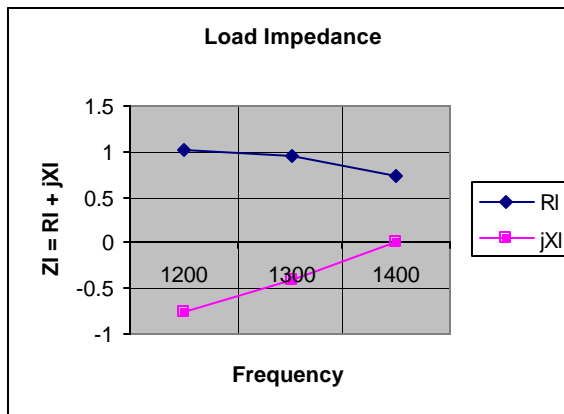
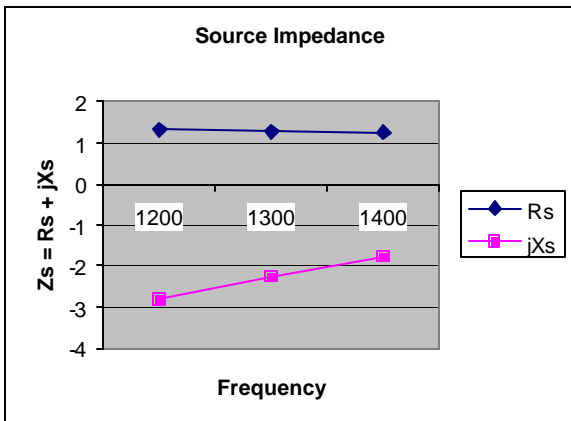


Performance Curves

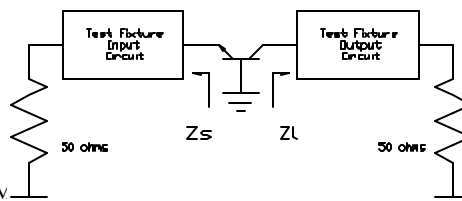
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Impedance Information



Freq	Impedance	
	Zs	Zl
1200	1.32-j2.82	1.03-j0.75
1300	1.28-j2.26	0.95-j0.41
1400	1.26-j1.78	0.75-j0.00

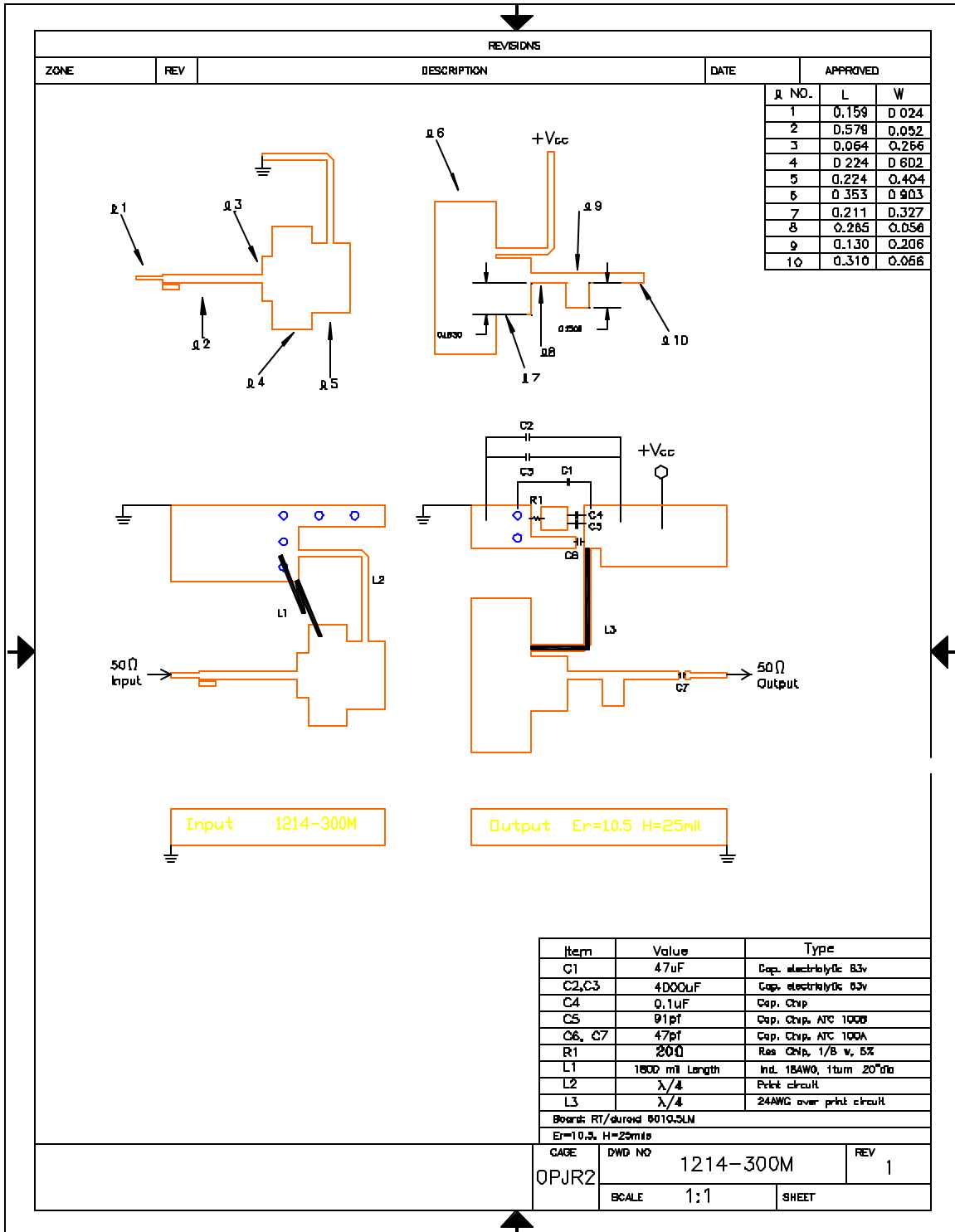


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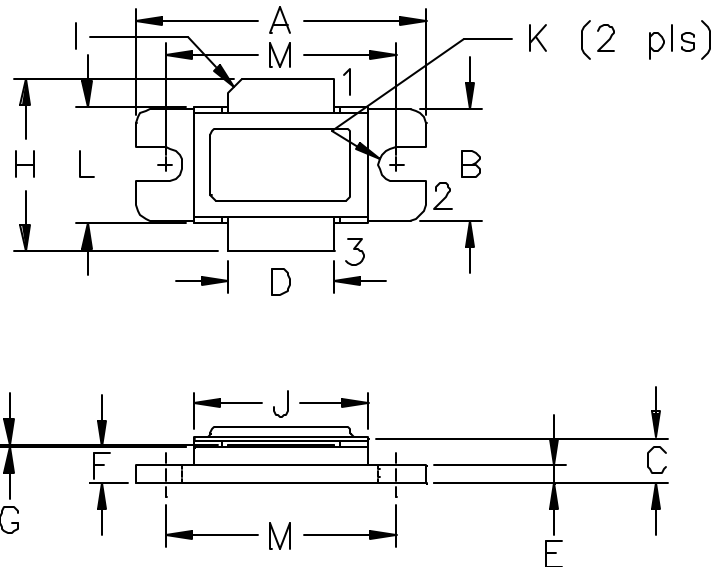
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## BROADBAND TEST CIRCUIT





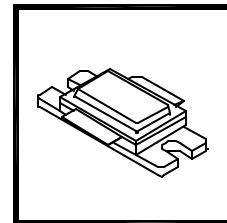
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DIM	MILLIMETER	±TOL	INCHES	±TOL
A	25.40	.25	1.000	.010
B	9.78	.25	.385	.010
C	4.00	.19	.142	.007
D	9.40	.13	.370	.005
E	1.53	.13	.060	.005
F	3.18	.13	.125	.005
G	0.08	+05/-00	.003	+002/-000
H	19.05	0.51	.750	.020
I	45°	5'	45°	5'
J	15.24	.25	.600	.010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