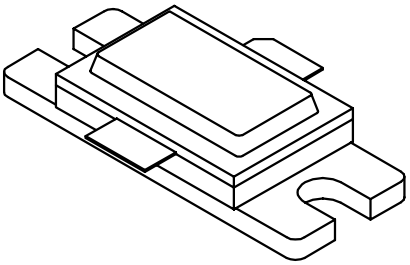
1214– 300M

300 Watts - 40 Volts, 150µs, 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 NiCr 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
Pout	Power Out	Freq = 1200 – 1400 MHz	300		400	Watts
Pg	Power Gain	Vcc = 40 Volts	8.75			dB
ηc	Collector Efficiency	Pin = 40 Watts	50	55		%
Rl	Input Return loss	Pulse Width = 150µs	10.0			dB
VSWR[1]	Load Mismatch Tolerance	Duty Factor = 10%			2:1	
VSWRs	Load Mismatch - Stability				1.5:1	

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

Bvces	Collector to Emitter Breakdown	Ic = 80 mA	70			Volts
Ices	Collector to Emitter Leakage	Vce = 40 Volts			10	mA
θjc[1]	Thermal Resistance	Rated Pulse Condition			0.29	°C/W

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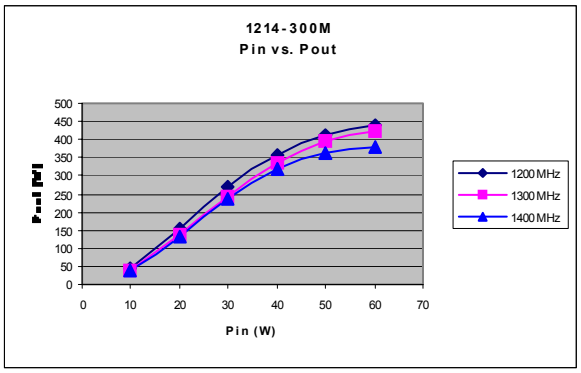
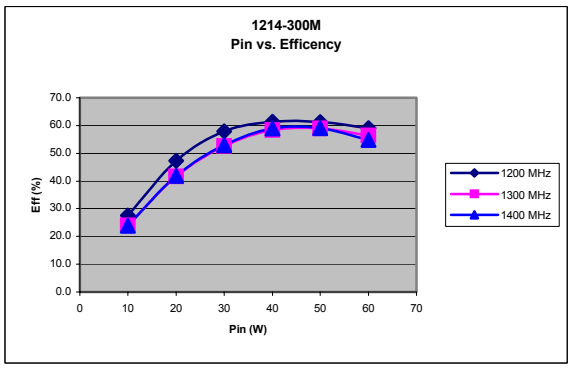
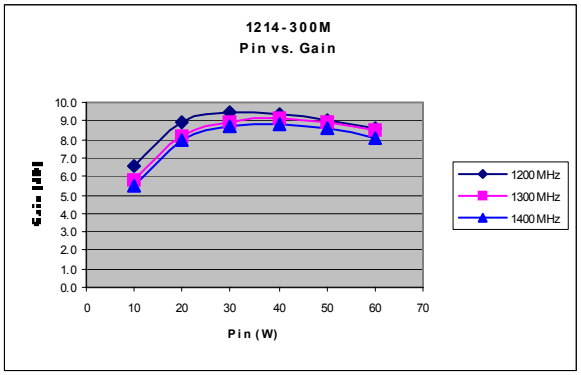
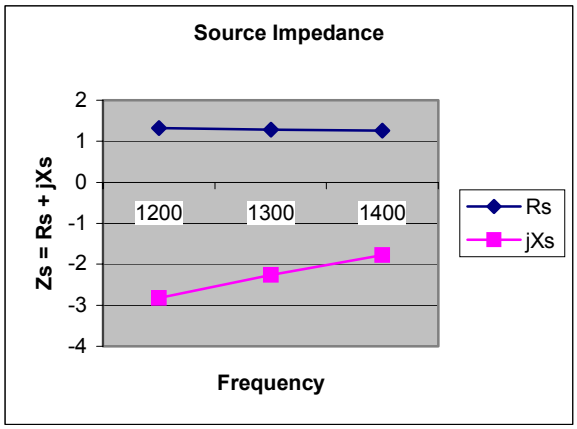
Performance Curves

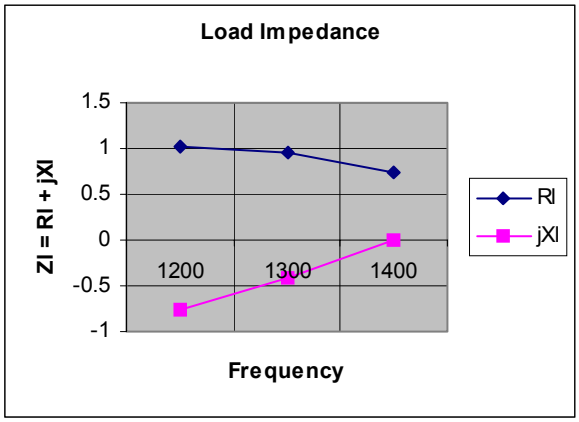




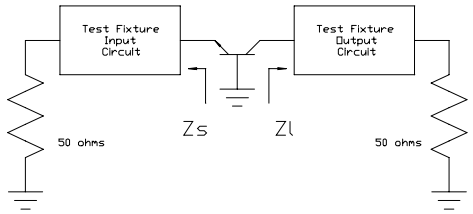


Impedance Information





Impedance		
Freq	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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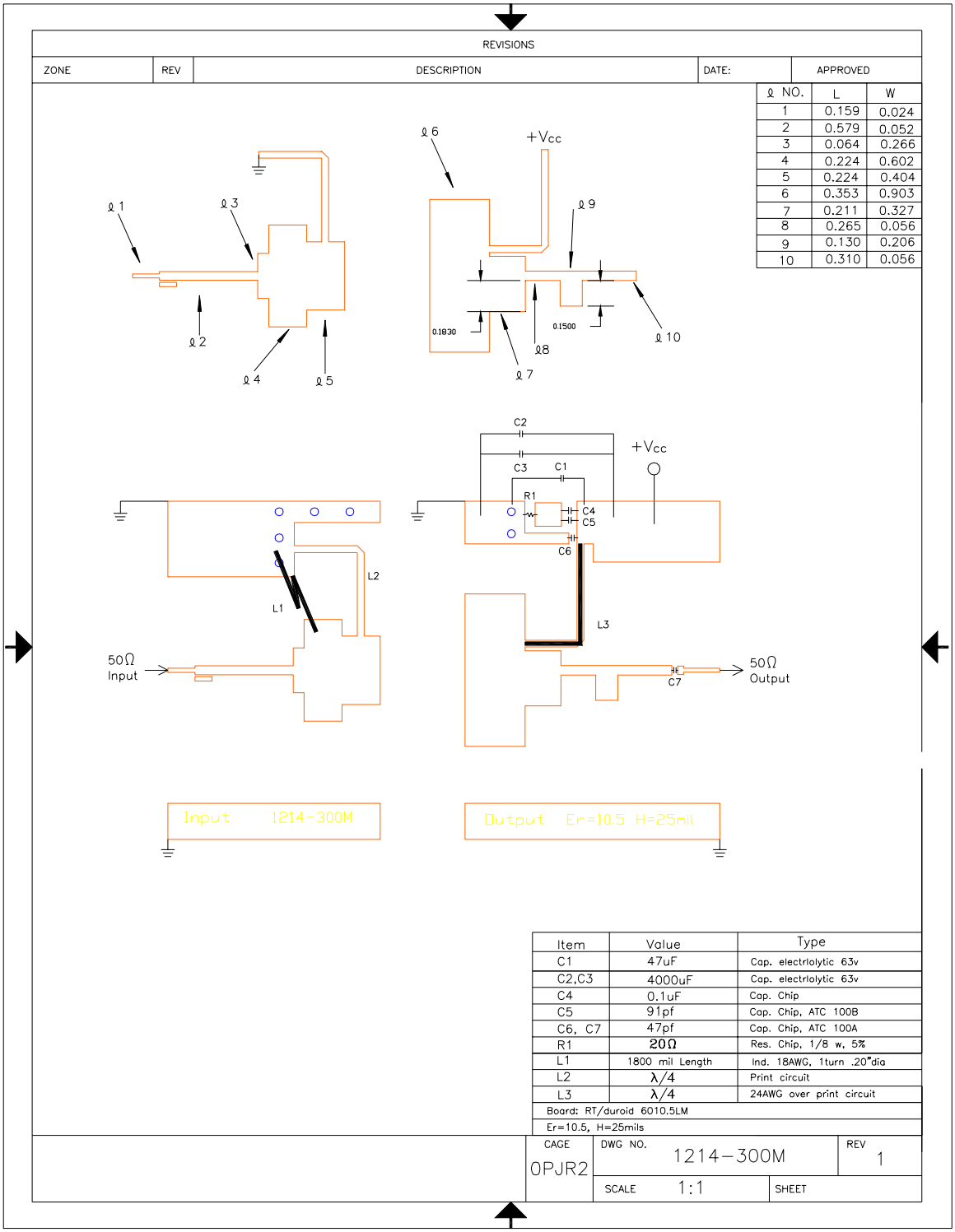
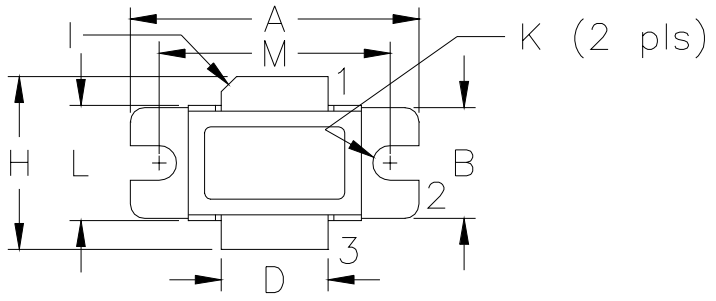
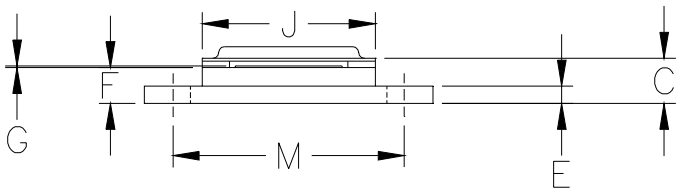
BROADBAND TEST CIRCUIT



1214– 300M

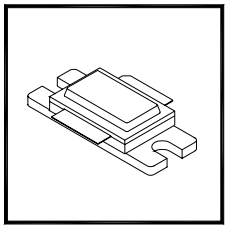




DIM	MILLIMETER	±TOL	INCHES	±TOL
A	25.40	.25	1.000	.010
B	9.78	.25	.385	.010
C	4.00	.19	.142	.007
D	9.40	.13	.370	.005
E	1.53	.13	.060	.005
F	3.18	.13	.125	.005
G	0.08	+05/-.00	.003	+.002/ -.000
H	19.05	0.51	.750	.020
I	45°	5°	45°	5°
J	15.24	.25	.600	.010
K	3.05 DIA	.13	.120 DIA	.005
L	10.15	.13	.400	.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



CHz TECHNOLOGY
RF – MICROWAVE SILICON POWER TRANSISTORS

DWG NO. 55ST

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