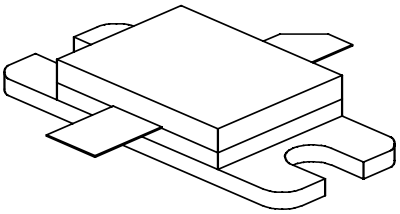
1214-110M

110 Watts - 50 Volts, 330µs, 10%
Radar 1200 - 1400 MHz

GENERAL DESCRIPTION

The 1214-110M is an internally matched, COMMON BASE transistor capable of providing 110 Watts of pulsed RF output power at 330 µs pulse width, 10% 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
55KT, STYLE 1



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C 270 Watts

Maximum Voltage and Current

BVces	Collector to Emitter Voltage	75 Volts
BVebo	Emitter to Base Voltage	3.0 Volts
Ic	Collector Current	8 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	110		170	Watts
Pg	Power Gain	Vcc = 50 Volts	7.4			dB
ηc	Collector Efficiency	Pin = 20 Watts	50	55		%
Rl	Input Return loss	Pulse Width = 330µs	10			dB
Droop	Droop	Duty Factor = 10%			0.5	dB
Flatness	Flatness				1.25	dB
VSWR[1]	Load Mismatch Tolerance				3:1	
VSWRs	Load Mismatch - Stability				1.5:1	

FUNCTIONAL CHARACTERISTICS @ 25°C

Bvces	Collector to Emitter Breakdown	Ic = 100 mA	75			Volts
Ices	Collector to Emitter Leakage	Vce = 50 Volts			10	mA
θjc[1]	Thermal Resistance	Rated Pulse Condition			0.65	°C/W

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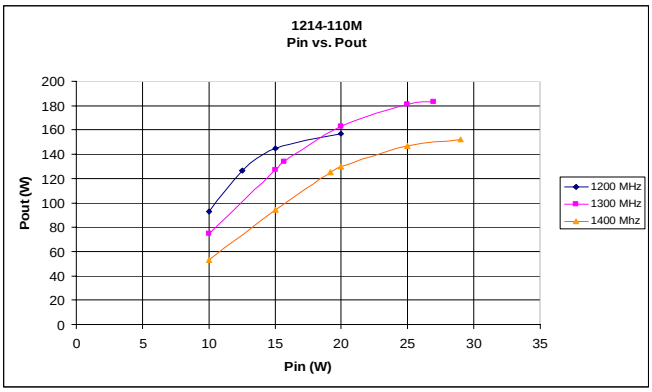
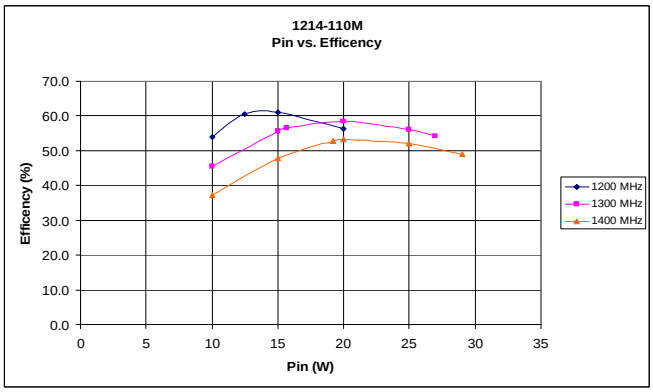
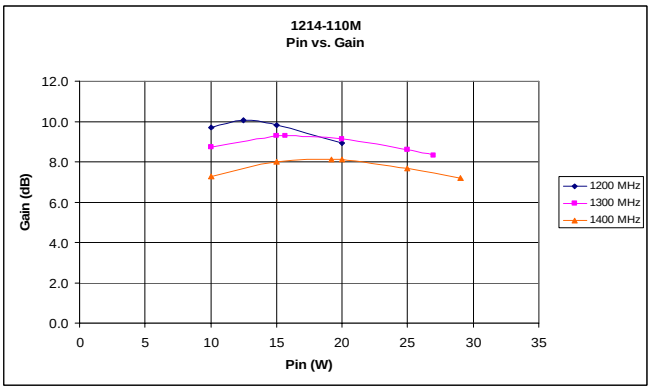
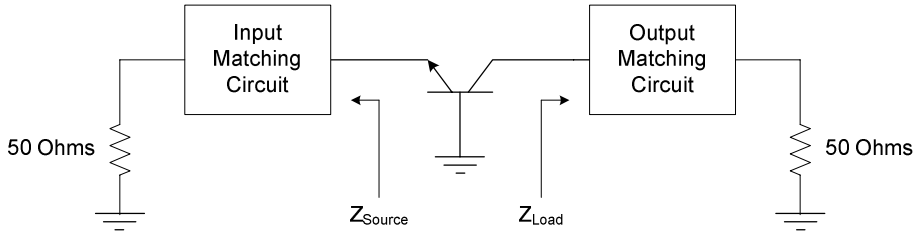
Performance Curves







Impedance Information



Frequencies (MHz)	$Z_{Source}(\Omega)$	$Z_{Load}(\Omega)$ [2]
1200	3.36-j3.12	4.97+j0.15
1300	3.5-j2.4	5.33-j2.86
1400	3.81-j1.3	2.88-j3.86

Note 2: Z_{Load} exclusive of bias circuit

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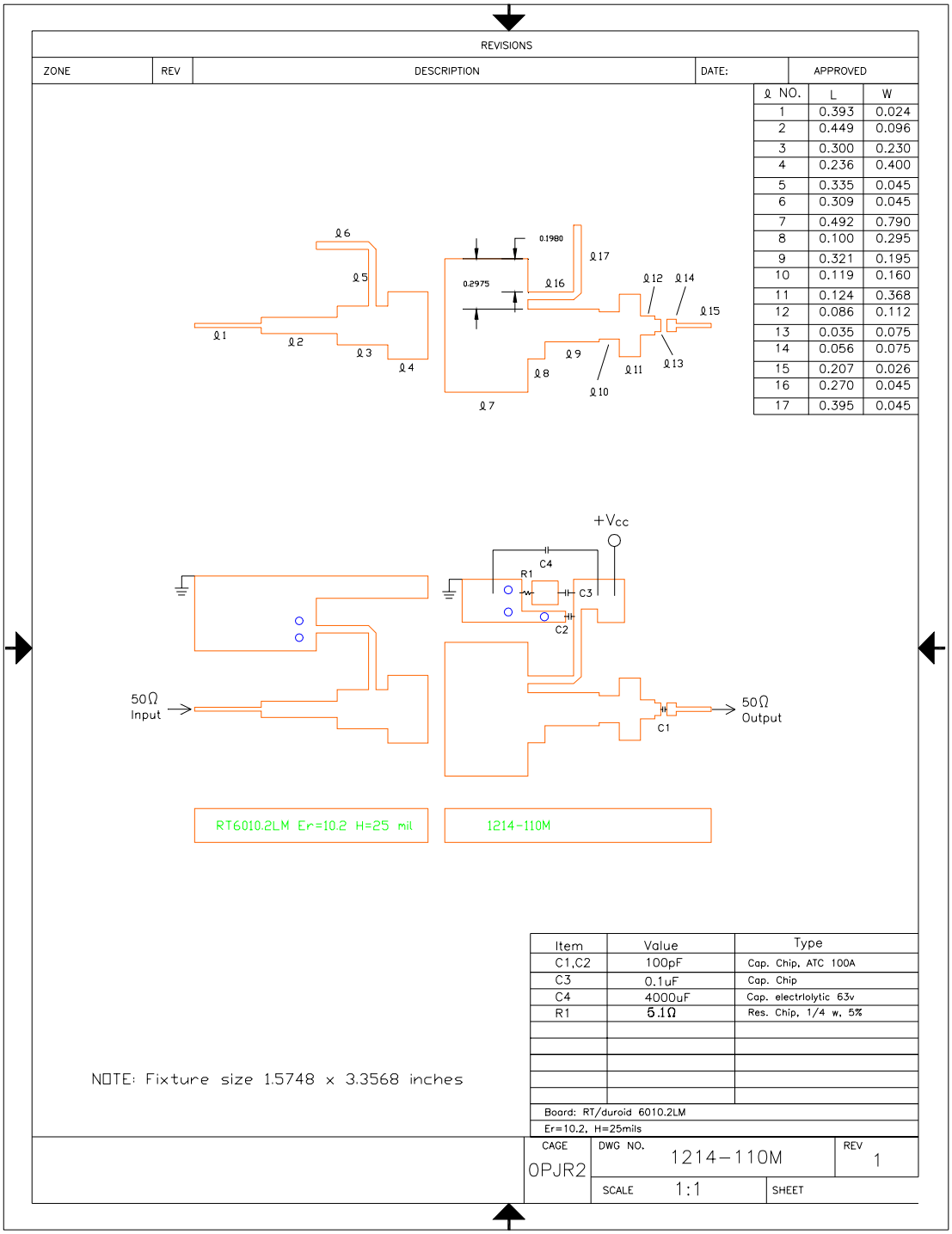
Test Circuit



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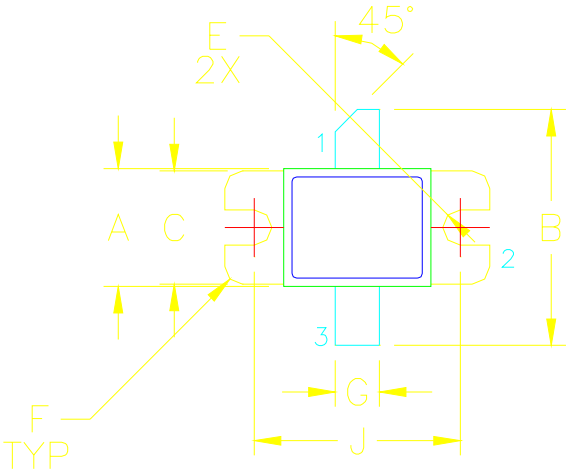
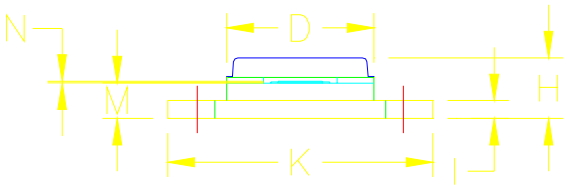
1214-110M

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

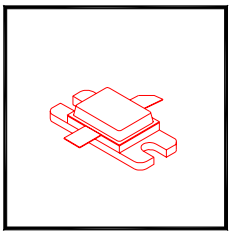




DIM	MILLIMETER	± TOL	INCHES	±TOL
A	10.16	.13	.400	.005
B	20.32	.76	.800	.030
C	9.78	.13	.385	.005
D	12.70	.13	.500	.005
E	1.52R	.13	.060R	.005
F	1.52R	.13	.060R	.005
G	3.81	.13	.150	.005
H	5.84	MAX	.230	MAX
I	1.52	.13	.060	.005
J	17.78	.13	.700	.005
K	22.86	.13	.900	.005
M	3.05	.13	.120	.010
N	0.08	+ .05 − .03	.003	+ .002 − .001

STYLE 1:
PIN1 = COLLECTOR
2 = BASE
3 = EMITTER

STYLE 2:
PIN1 = COLLECTOR
2 = EMITTER
3 = BASE



CAGE	DWG NO.	REV
0PJR2	55KT	E
	SCALE 2/1	SHEET

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