GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

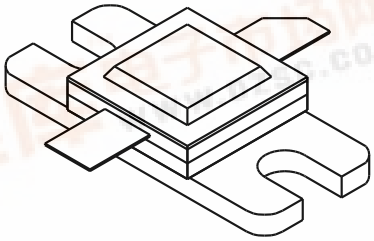
1214 - 55

55 Watts - 28 Volts, Pulsed
Radar 1200 - 1400 MHz

GENERAL DESCRIPTION

The 1214-55 is an internally matched, COMMON BASE transistor capable of providing 55 Watts of pulsed RF output power at two milliseconds pulse width, twenty 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
55AW, STYLE 1



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25ºC 175 Watts

Maximum Voltage and Current

BVces	Collector to Emitter Voltage	50 Volts
BVebo	Emitter to Base Voltage	3.5 Volts
Ic	Collector Current	8 Amps

Maximum Temperatures

Storage Temperature	- 65 to + 200ºC
Operating Junction Temperature	+ 200ºC

ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out	F = 1200-1400 MHz	55			Watts
Pin	Power Input	Vcc = 28 Volts			12.3	Watts
Pg	Power Gain	Pulse Width = 2 ms	6.5	7.0		d B
ηc	Collector Efficiency	Duty = 20 %		45		%
VSWR	Load Mismatch Tolerance	F=1300MHz, Po=55W			3:1	

BVces	Collector to Emitter Breakdown	Ic =100 mA	50			Volts
BVebo	Emitter to Base Breakdown	Ie = 15 mA	3.5			Volts
Hfe	DC Current Gain	Vce = 5 V,Ic = 1000 mA	20	45		
θjc	Thermal Resistance	Rated Pulse Condition			1.0	ºC/W

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CHz TECHNOLOGY
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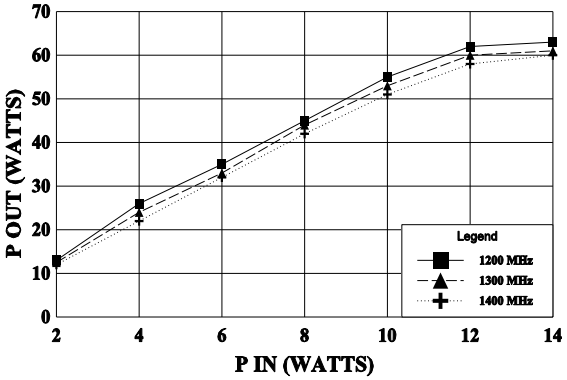
1214-55

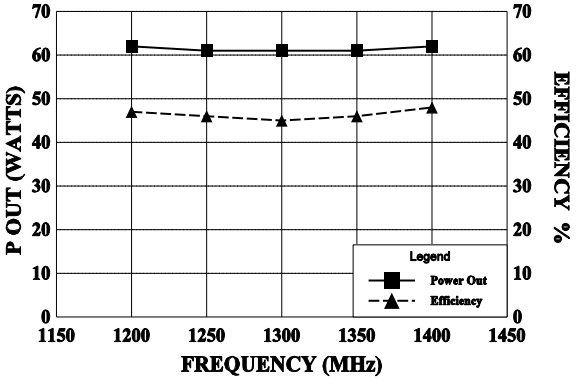
POWER OUTPUT vs POWER INPUT

Vcc = 28 V, PW = 2 ms, 20%



POWER OUPUT AND EFF. vs FREQUENCY

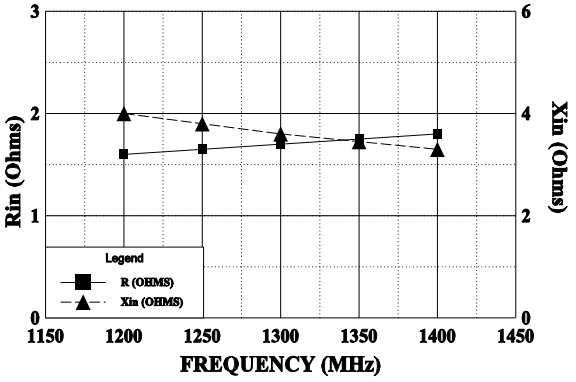
Vcc = 28 V, Pin = 12.3 W, 2 ms, 20%



Typical Impedances

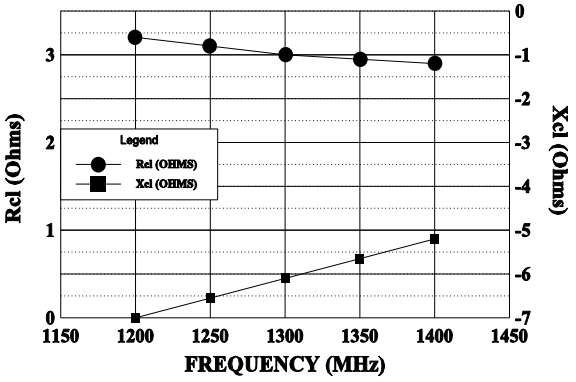
INPUT IMPEDANCE vs FREQUENCY

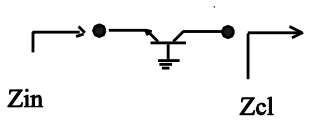
Zin = R + jX (Vcc = 28 V, Pin = 12 W)



LOAD IMPEDANCE vs FREQUENCY

Zcl = Rcl - jXcl (Vcc = 28 V, Pin=12 W)





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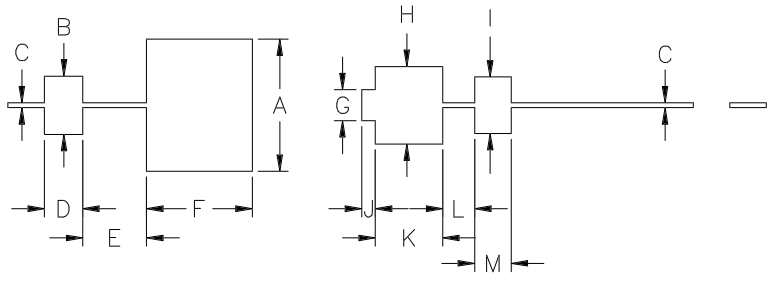
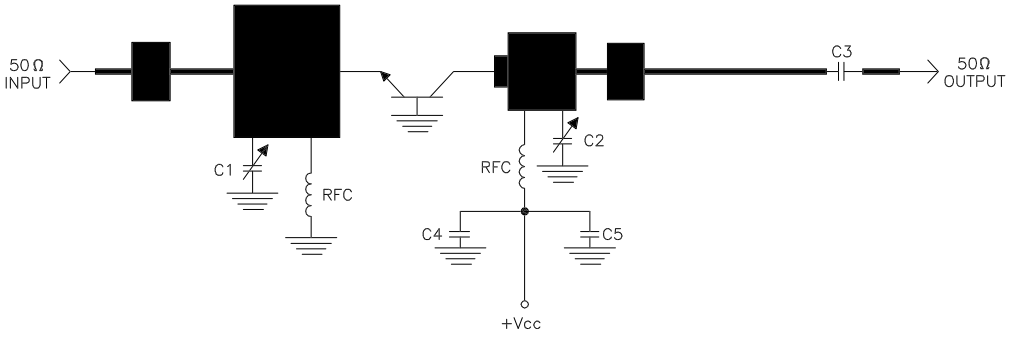
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



DIM	INCHES
A	.725
B	.320
C	.027
D	.170
E	.350
F	.310
G	.170
H	.425
I	.310
J	.075
K	.370
L	.175
M	.200

1214-55 TEST AMPLIFIER

1200 – 1400 MHz BANDWIDTH



▬ = Microstrip on 0.010" Duroid, Er=2.3
C1 = 0.6–6.5pF JOHANSON VARIABLE
C2 = 0.3–3.5pF JOHANSON VARIABLE
C3 = 82pF ATC CHIP CAP
C4 = 82pF ATC CHIP CAP
C5 = 2000 mFD

	CAGE	DWG NO.	REV
GHz TECHNOLOGY	0PJR2	1214-55	A
		SCALE 1/1	SHEET