

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.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C 175 Watts

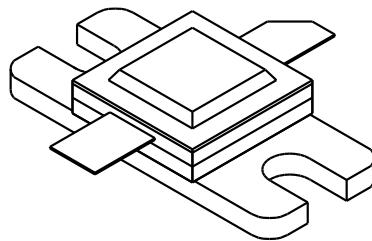
Maximum Voltage and Current

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 + 200°C
Operating Junction Temperature	+ 200°C

CASE OUTLINE 55AW, STYLE 1



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				Watts
Pg	Power Gain	Pulse Width = 2 ms	6.5	7.0	12.3	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	°C/W

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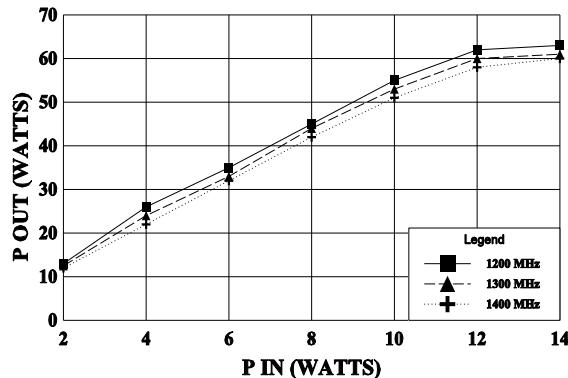


GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

1214-55

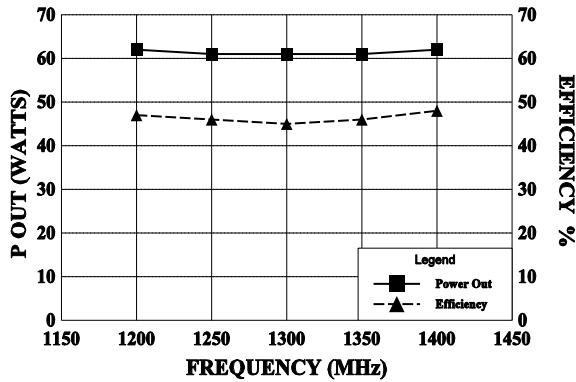
POWER OUTPUT vs POWER INPUT

$V_{cc} = 28$ V, PW = 2 ms, 20%



POWER OUPUT AND EFF. vs FREQUENCY

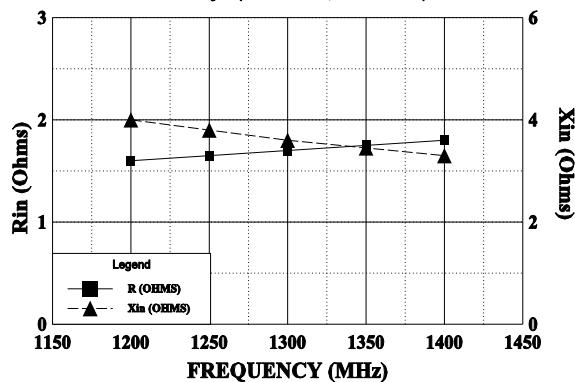
$V_{cc} = 28$ V, $P_{in} = 12.3$ W, 2 ms, 20%



Typical Impedances

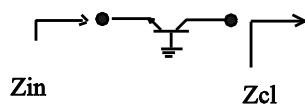
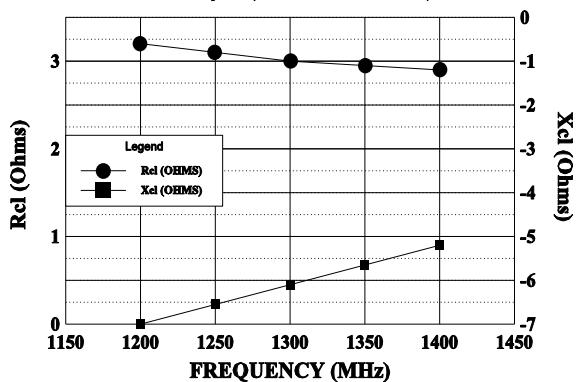
INPUT IMPEDANCE vs FREQUENCY

$Z_{in} = R + jX$ ($V_{cc} = 28$ V, $P_{in} = 12$ W)



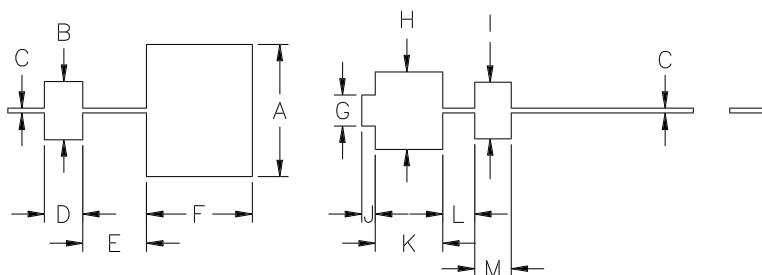
LOAD IMPEDANCE vs FREQUENCY

$Z_{cl} = R_{cl} - jX_{cl}$ ($V_{cc} = 28$ V, $P_{in}=12$ W)



REVISIONS

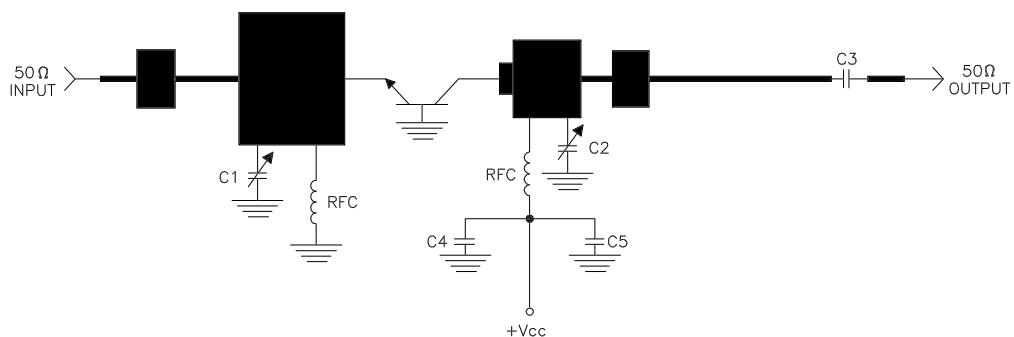
ZONE	REV	DESCRIPTION	DATE	APPROVED
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DIM	INCHES
A	.725
B	.320
C	.027
D	.170
E	.350
F	.310
G	.170
H	.425
I	.310
J	.075
K	.370
L	.175
M	.200

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



GHz TECHNOLOGY

CAGE
OPJR2

DWG NO.

1214-55

REV
A

SCALE

1/1

SHEET