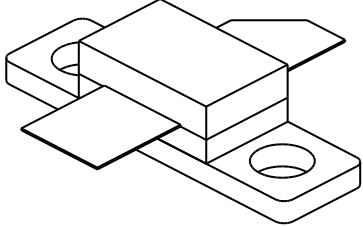


1920AB12

12 Watts, 25 Volts, Class AB
Personal 1930 - 1990 MHz

<p>GENERAL DESCRIPTION The 1920AB12 is a COMMON EMITTER transistor capable of providing 12 Watts of Class AB, RF output power over the band 1930-1990 MHz. This transistor is specifically designed for PERSONAL COMMUNICATIONS BASE STATION amplifier applications. It includes Input prematching and utilizes Gold metalization and HIGH VALUE EMITTER ballasting to provide high reliability and supreme ruggedness. .</p>	<p>CASE OUTLINE 55CT, STYLE 2 COMMON EMITTER</p> 																		
<p>ABSOLUTE MAXIMUM RATINGS</p> <table style="width: 100%; border: none;"> <tr> <td style="padding: 2px;">Maximum Power Dissipation @ 25°C</td> <td style="text-align: right; padding: 2px;">46 Watts</td> </tr> <tr> <td colspan="2" style="padding: 2px;">Maximum Voltage and Current</td> </tr> <tr> <td style="padding: 2px;">BVces Collector to Emitter Voltage</td> <td style="text-align: right; padding: 2px;">55 Volts</td> </tr> <tr> <td style="padding: 2px;">LVceo Collector to Emitter Voltage</td> <td style="text-align: right; padding: 2px;">27 Volts</td> </tr> <tr> <td style="padding: 2px;">BVebo Emitter to Base Voltage</td> <td style="text-align: right; padding: 2px;">3.5 Volts</td> </tr> <tr> <td style="padding: 2px;">Ic Collector Current</td> <td style="text-align: right; padding: 2px;">3.5 Amps</td> </tr> <tr> <td colspan="2" style="padding: 2px;">Maximum Temperatures</td> </tr> <tr> <td style="padding: 2px;">Storage Temperature</td> <td style="text-align: right; padding: 2px;">- 65 to + 150°C</td> </tr> <tr> <td style="padding: 2px;">Operating Junction Temperature</td> <td style="text-align: right; padding: 2px;">+ 200°C</td> </tr> </table>	Maximum Power Dissipation @ 25°C	46 Watts	Maximum Voltage and Current		BVces Collector to Emitter Voltage	55 Volts	LVceo Collector to Emitter Voltage	27 Volts	BVebo Emitter to Base Voltage	3.5 Volts	Ic Collector Current	3.5 Amps	Maximum Temperatures		Storage Temperature	- 65 to + 150°C	Operating Junction Temperature	+ 200°C	
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ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out	F = 1990 MHz	12			Watt
Pin	Power Input	Vce = 25 Volts			2.2	Watt
Pg	Power Gain	Icq = 130 mAmps	7.5	8.0		dB
η_c	Collector Efficiency	As Above		43		%
VSWR_l	Load Mismatch Tolerance				3:1	

BVces	Collector to Emitter Breakdown	Ic = 50 mA	55			Volts
LVceo	Collector to Emitter Breakdown	Ic = 50 mA	27			Volts
BVebo	Emitter to Base Breakdown	Ie = 10 mA	3.5			Volts
Ices	Collector Leakage Current	Vce = 27 Volts			3	mA
hFE	DC - Current Gain	Vce = 5 V, Ic = 0.5 A	20		100	
Cob	Output Capacitance	F = 1 MHz, Vcb = 28 V		12		pF
θ_{jc}	Thermal Resistance	Tc = 25°C			3.8	°C/W

Issue February 1996

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GHZ Technology Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031 Fax 408 / 986-8120

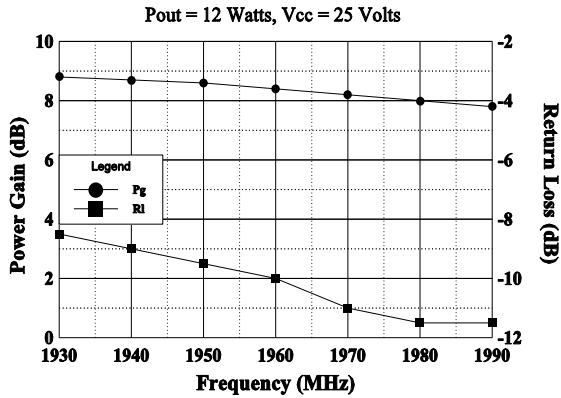


GHZ TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

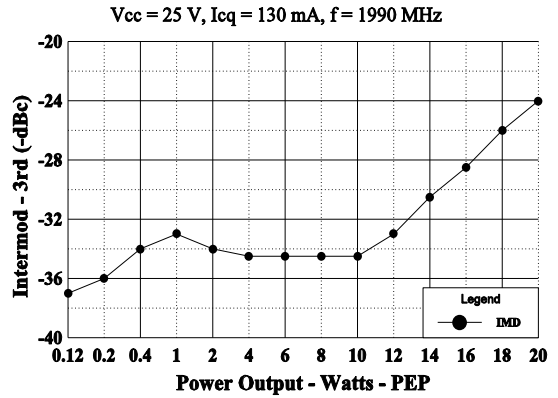
Typical Performance

1920AB12

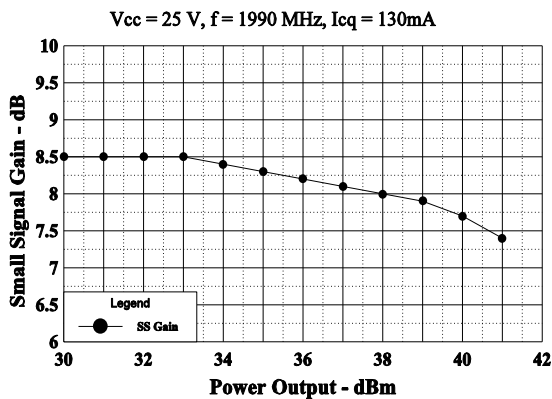
BROADBAND POWER GAIN & RETURN LOSS



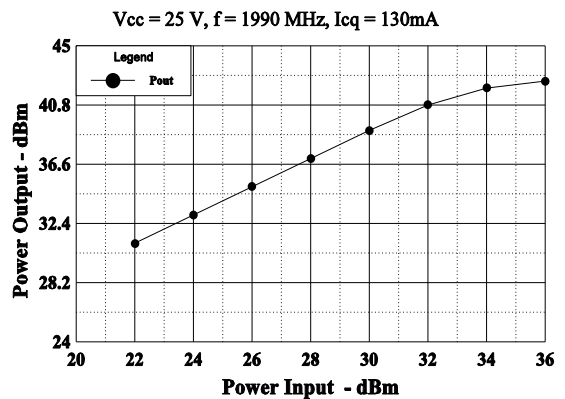
THIRD ORDER IMD vs POWER OUTPUT



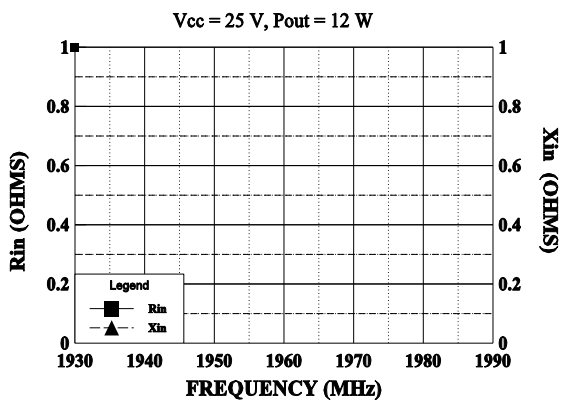
Power Gain vs Power Output



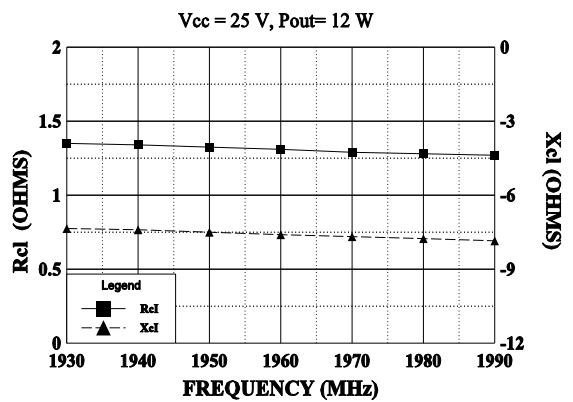
Power Output vs Power Input - dBm



INPUT IMPEDANCE

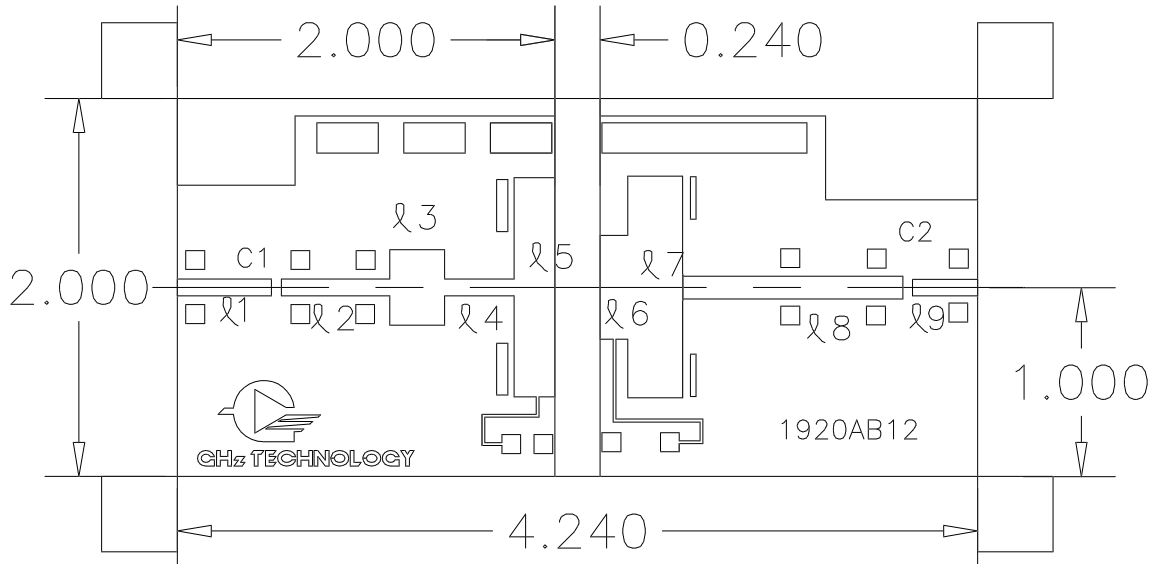


LOAD IMPEDANCE



REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
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λ NO.	X DIM	Y DIM
1	.500	.088
2	.575	.088
3	.290	.380
4	.370	.088
5	.215	1.160
6	.150	.550
7	.290	1.174
8	1.165	.120
9	.345	.088

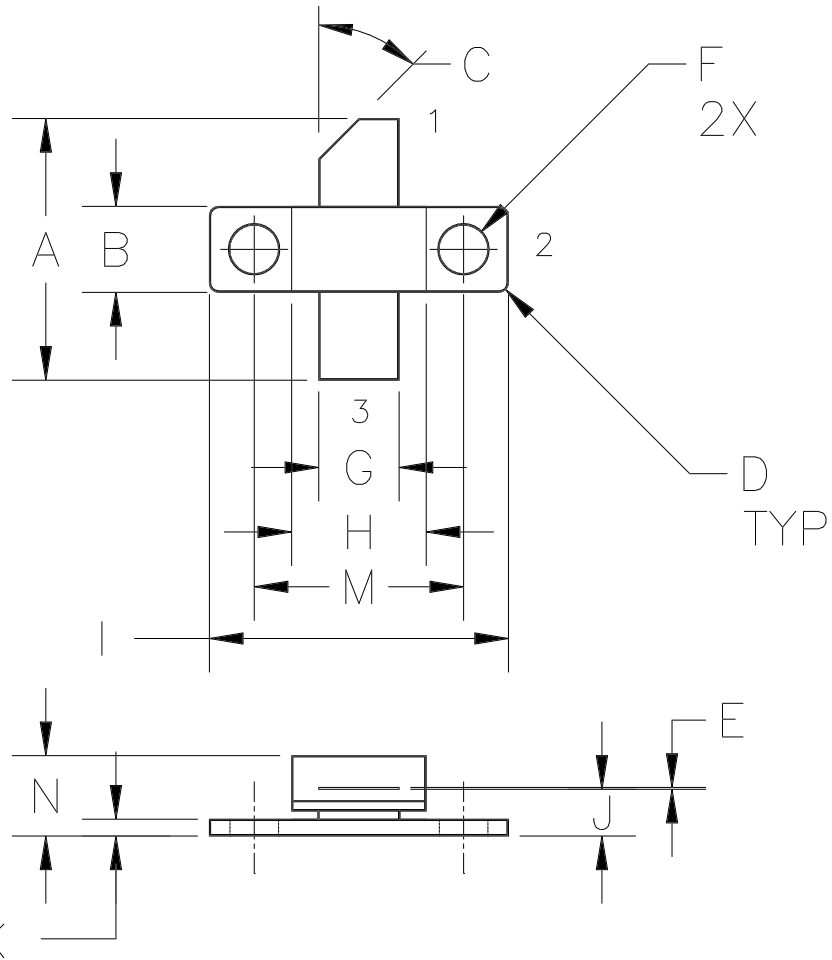
C1,C2=100pf ATC
 1/32" PTFE glass Er=2.5



CAGE 0PJR2	DWG NO. 1920AB12	REV 3
SCALE 1/1	DATE 19SEP95	SHEET 1 of 1

REVISIONS

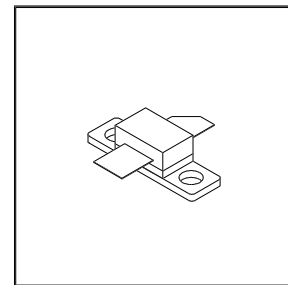
ZONE	REV	DESCRIPTION	DATE	APPROVED
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DIM	MILLIMETER	TOL	INCHES	TOL
A	17.78	.76	.700	.030
B	5.84	.13	.230	.005
C	45°	5°	45°	5°
D	0.63R	.13	.025R	.005
E	0.13	.02	.005	.001
F	3.30 DIA	.13	.130 DIA	.005
G	5.46	.13	.215	.005
H	9.14	.13	.360	.005
I	20.32	.13	.800	.005
J	3.17	.25	.125	.010
K	1.14	.13	.045	.005
M	14.22	.13	.560	.005
N	5.46	REF	.215	REF

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

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



CAGE
OPJR2

DWG NO.

55CT

REV

A

SCALE

2/1

SHEET