

# 1920AB60

60 Watts PEP, 25 Volts, Class AB  
Personal 1930 - 1990 MHz

<p><b>GENERAL DESCRIPTION</b> The 1920AB60 is a COMMON EMITTER transistor capable of providing 60 Watts of Class AB, RF PEP output power over the band 1930-1990 MHz. This transistor is specifically designed for <b>LINEAR PERSONAL (PCS) COMMUNICATIONS BASE STATION</b> amplifier applications. It includes two stage input and single output prematching. It utilizes Gold metalization and HIGH VALUE EMITTER ballasting to provide high reliability and supreme ruggedness. .</p>	<p><b>CASE OUTLINE</b> <b>55SU, STYLE 2</b> <b>COMMON EMITTER</b></p>														
<p><b>ABSOLUTE MAXIMUM RATINGS</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">Maximum Power Dissipation @ 25°C</td> <td style="text-align: right;">200 Watts</td> </tr> </table> <p><b>Maximum Voltage and Current</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">BVces Collector to Emitter Voltage</td> <td style="text-align: right;">55 Volts</td> </tr> <tr> <td>LVceo Collector to Emitter Voltage</td> <td style="text-align: right;">27 Volts</td> </tr> <tr> <td>BVebo Emitter to Base Voltage</td> <td style="text-align: right;">3.5 Volts</td> </tr> <tr> <td>Ic Collector Current</td> <td style="text-align: right;">20.0 Amps</td> </tr> </table> <p><b>Maximum Temperatures</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">Storage Temperature</td> <td style="text-align: right;">- 65 to + 150°C</td> </tr> <tr> <td>Operating Junction Temperature</td> <td style="text-align: right;">+ 200°C</td> </tr> </table>	Maximum Power Dissipation @ 25°C	200 Watts	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	20.0 Amps	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
<b>Pout</b>	Power Out - PEP	F = 1930 - 1990 MHz	60			Watt
<b>Pin</b>	Power Input - PEP	Vce = 25 Volts			11	Watt
<b>Pg</b>	Power Gain	Icq = 400 mAmps	7.3	8.0		dB
<b>RI</b>	Return Loss	As Above			-10	dB
$\eta_c$	Collector Efficiency		42	44		%
<b>VSWR<sub>1</sub></b>	Load Mismatch Tolerance				3:1	

<b>BVces</b>	Collector to Emitter Breakdown	Ic = 100 mA	55			Volts
<b>BVceo</b>	Collector to Emitter Breakdown	Ic = 100 mA	27			Volts
<b>BVebo</b>	Emitter to Base Breakdown	Ie = 25 mA	3.5			Volts
<b>Ices</b>	Collector Leakage Current	Vce = 27 Volts			30	mA
<b>h<sub>FE</sub></b>	DC - Current Gain	Vce = 5 V, Ic = 1.5 A	20		100	
$\theta_{jc}$	Thermal Resistance	Tc = 25°C			.87	°C/W

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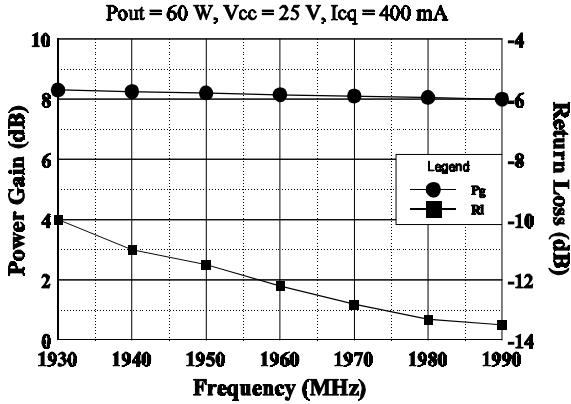
Ghz Technology Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031 Fax 408 / 986-8120



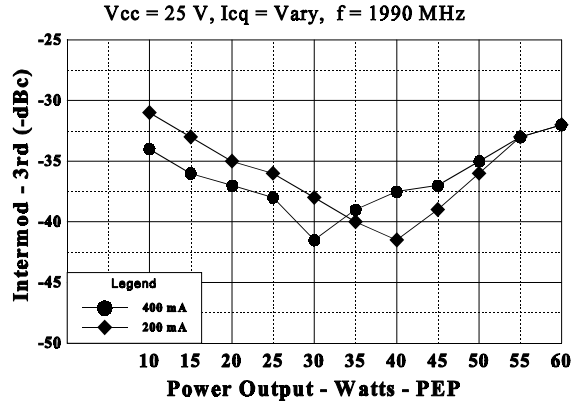
**GHZ TECHNOLOGY**  
RF · MICROWAVE SILICON POWER TRANSISTORS

# 1920AB60

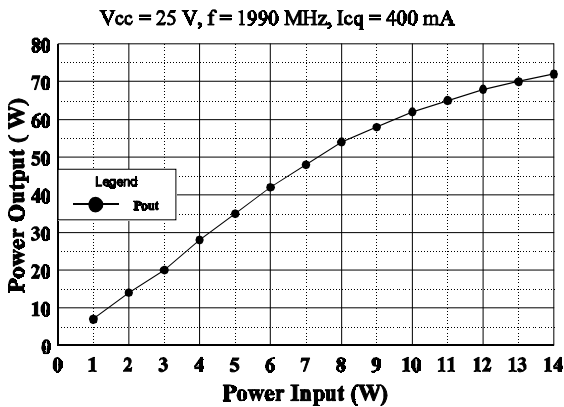
## BROADBAND POWER GAIN & RETURN LOSS



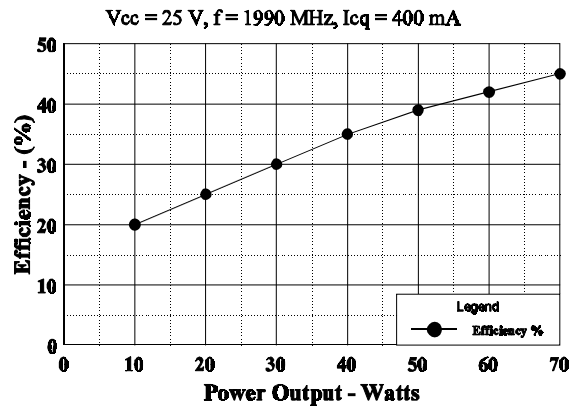
## THIRD ORDER IMD vs POWER OUTPUT



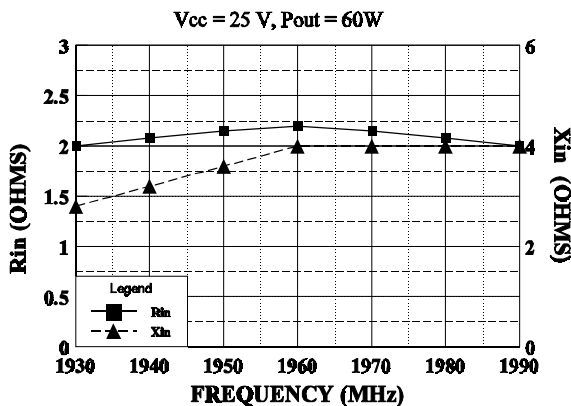
## Power Output vs Power Input - PEP



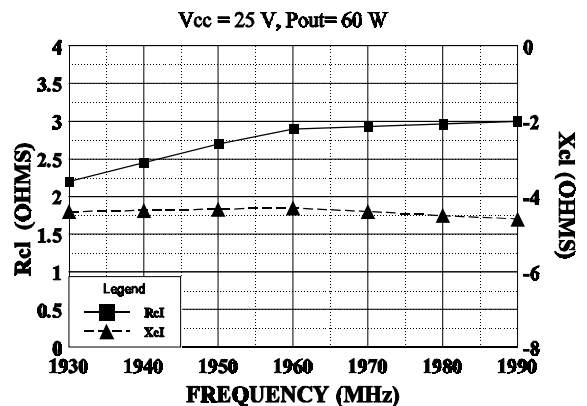
## Collector Efficiency vs Power Out - PEP



## SERIES INPUT IMPEDANCE



## SERIES LOAD IMPEDANCE



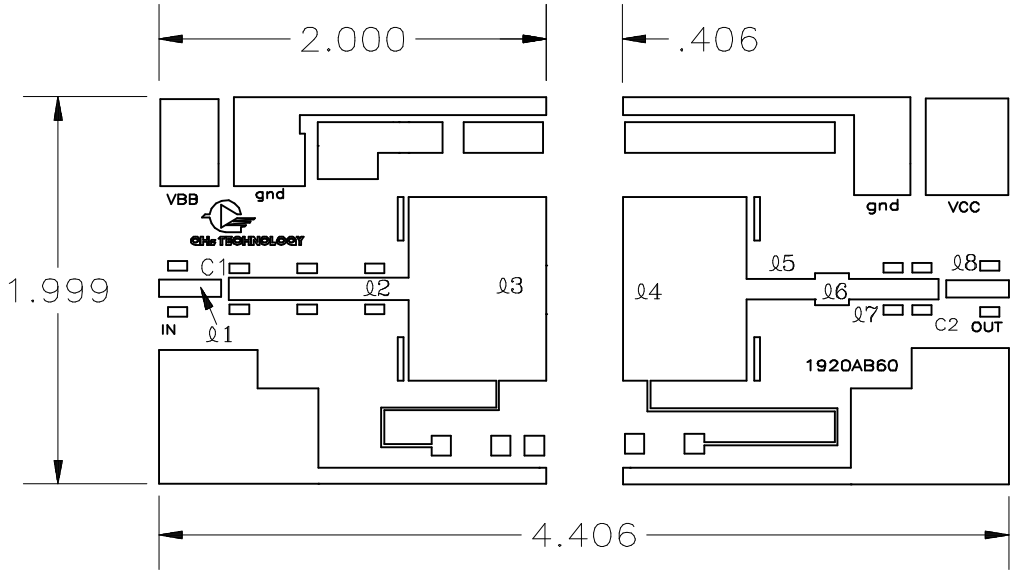
November 1996

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REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
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C1,C2=51 pf ATC  
 1/32" PTFE glass  $\epsilon_r = 2.55$

l NO.	X DIM	Y DIM
1	.320	.089
2	.930	.115
3	.710	.950
4	.635	.950
5	.355	.105
6	.175	.168
7	.465	.105
8	.330	.089

Rev DATE: 27 Dec 96



CAGE OPJR2	DWG NO.	1920AB60	REV	1
	SCALE		1/1	SHEET