Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

2304

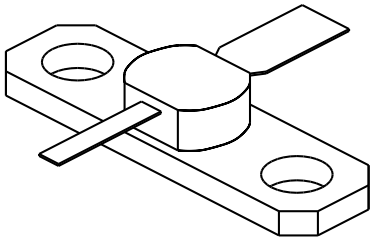
4.0 Watts - 20 Volts, Class C
Microwave 2300 MHz

GENERAL DESCRIPTION

The 2304 is a COMMON BASE transistor capable of providing 4 Watts Class C, RF output power at 2300 MHz. Gold metalization and diffused ballasting are used to provide high reliability and supreme ruggedness. The transistor uses a fully hermetic High Temperature Solder Sealed package.

CASE OUTLINE

55 BT- Style 1



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C	10.2 Watts
Maximum Voltage and Current	
BVces Collector to Emitter Voltage	45 Volts
BVebo Emitter to Base Voltage	3.5 Volts
Ic Collector Current	0.6 A
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	F = 2.3 GHz	4.0			Watt
Pin	Power Input	Vcb = 20 Volts			0.63	Watt
Pg	Power Gain	Po = 4 Watts	8.0			dB
η_c	Collector Efficiency	As Above		40		%
$VSWR_1$	Load Mismatch Tolerance	F =2.3 GHz, Po = 4 W			30:1	

BVces	Collector to Emitter Breakdown	Ic = 30 mA	45			Volts
BVebo	Emitter to Base Breakdown	Ie = 3.0 mA	3.5			Volts
Icbo	Collector to Base Current	Vcb = 22 Volts			1.5	mA
h_{FE}	Current Gain	Vce = 5 V, Ic = 300 mA	10			
Cob	Output Capacitance	F = 1.0 MHz, Vcb = 22 V		7.0		pF
θ_{jc}	Thermal Resistance				17	°C/W

Issue August 1996

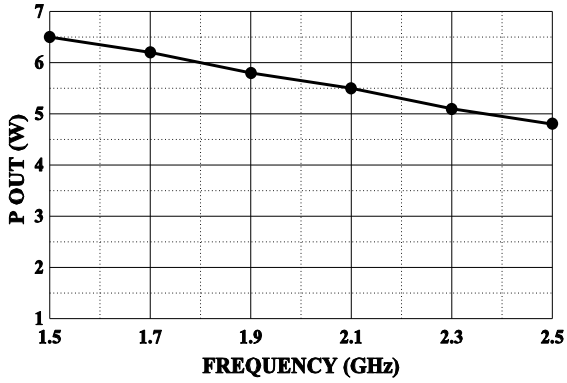
GHz Technology Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031 Fax 408 / 986-8120

GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

2304

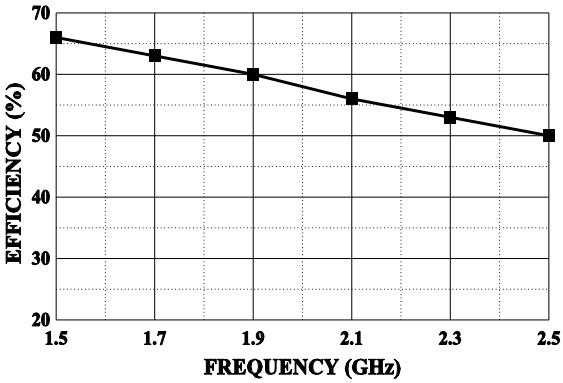
POWER OUTPUT VS FREQUENCY

Vcc=20V, Pin=.63W



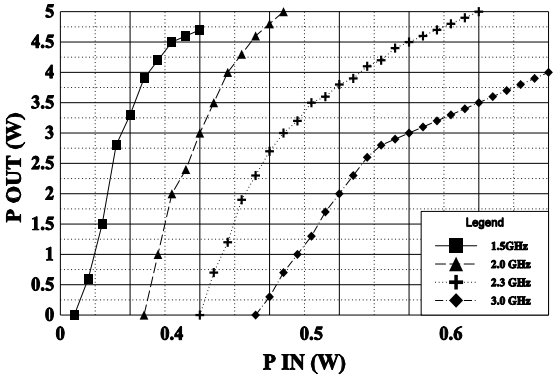
EFFICIENCY VS FREQUENCY

Pout=4.0W, Vcc=20V



TRANSFER CHARACTERISTICS VS FREQUENCY

Vcc=20V

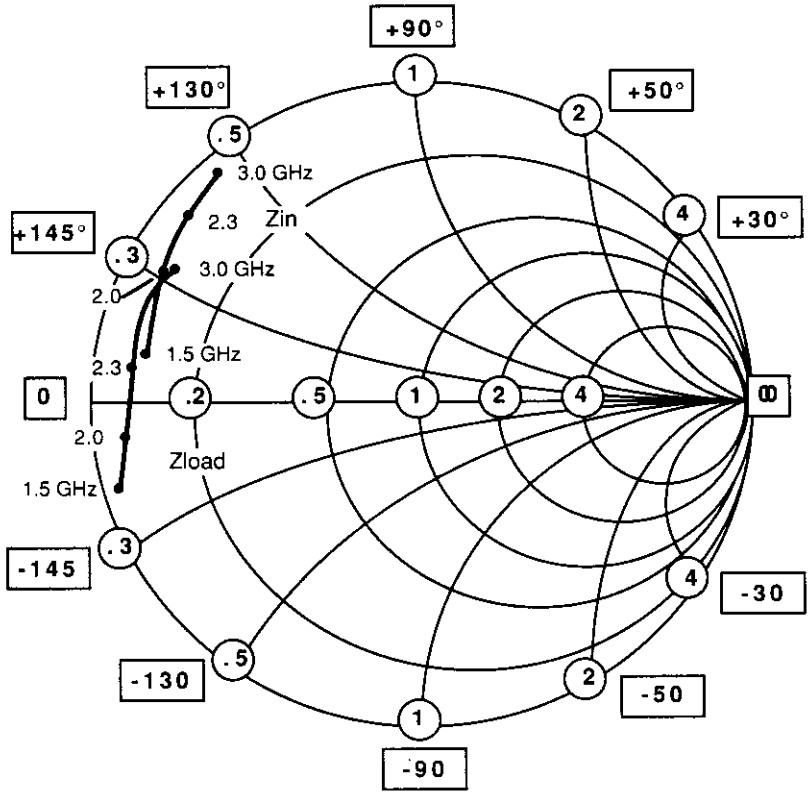


August 1996

SMITH CHART

2304

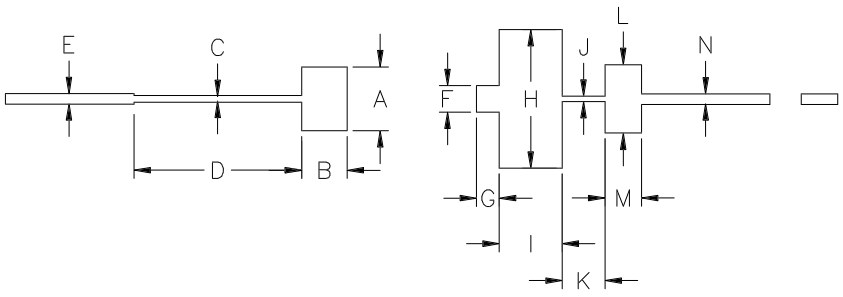
NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES



NORMALIZED TO A 50 OHM SYSTEM.

FREQUENCY MHz	Zin R	Zin JX	FREQUENCY MHz	Zload R	Zload JX
1500	4	5	1500	3.9	16
2000	3.3	15	2000	2.7	3
2300	3.0	18	2300	2.6	-3
3000	2.5	22	3000	1.8	-7.5

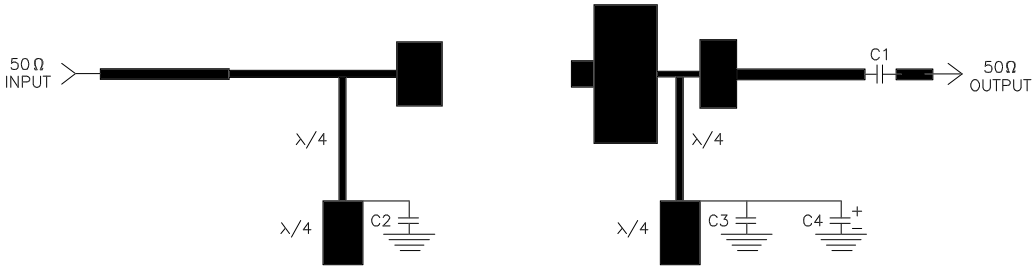
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



DIM	INCHES
A	.350
B	.250
C	.038
D	.920
E	.058
F	.145
G	.125
H	.760
I	.345
J	.030
K	.235
L	.375
M	.200
N	.058

2304 TEST CIRCUIT

F = 2.3 GHz



= Microstrip on 0.010" Duroid, Er=2.3
C1,C2 = 100PF ATC "A"
C3 = 82PF ATC "B"
C4 = 10MFD 35v

	CAGE	DWG NO.	REV
GHz TECHNOLOGY	0PJR2	2304	B
		SCALE 1/1	SHEET