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.

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GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

2307

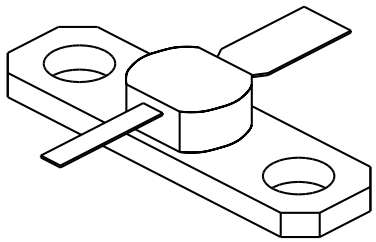
7.0 Watts - 20 Volts, Class C
Microwave 2300 MHz

GENERAL DESCRIPTION

The 2307 is a COMMON BASE transistor capable of providing 7 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 @ 25ºC	20.5 Watts
Maximum Voltage and Current	
BVces Collector to Emitter Voltage	42 Volts
BVebo Emitter to Base Voltage	3.5 Volts
Ic Collector Current	1.0 A
Maximum Temperatures	
Storage Temperature	- 65 to + 200ºC
Operating Junction Temperature	+ 200ºC

ELECTRICAL CHARACTERISTICS @ 25 ^{O}C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out	F = 2.3 GHz	7.0			Watt
Pin	Power Input	Vcb = 20 Volts			1.1	Watt
Pg	Power Gain	Po = 7 Watts	8.0			dB
η_c	Collector Efficiency	As Above		40		%
VSWR$_1$	Load Mismatch Tolerance	F = 2.3 GHz, Po = 7 W			30:1	

BVces	Collector to Emitter Breakdown	Ic = 50 mA	42			Volts
BVebo	Emitter to Base Breakdown	Ie = 5.0 mA	3.5			Volts
Icbo	Collector to Base Current	Vcb = 22 Volts			2.5	mA
h_{FE}	Current Gain	Vce = 5 V, Ic = 500 mA	10			
Cob	Output Capacitance	F = 1.0 MHz, Vcb = 22 V		10		pF
θ_{jc}	Thermal Resistance				8.5	ºC/W

Issue August 1996

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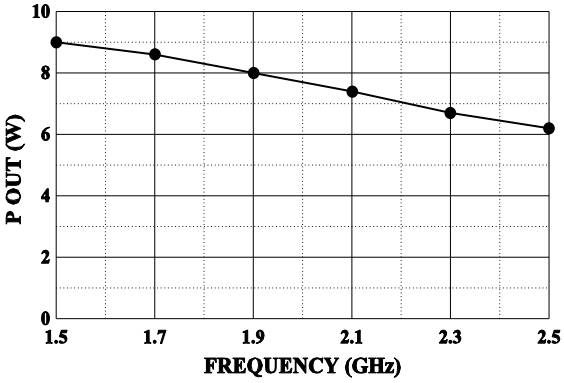
2307

CHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

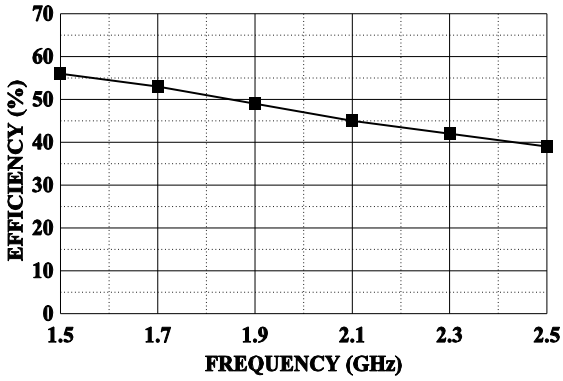
POWER OUTPUT VS FREQUENCY

Vcc=20V, Pin=1.1W



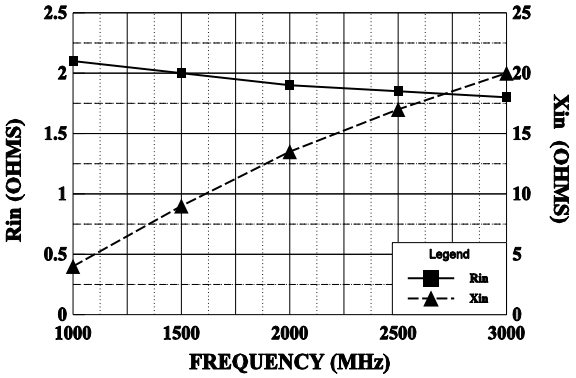
EFFICIENCY VS FREQUENCY

Pout=7.0W, Vcc=20V



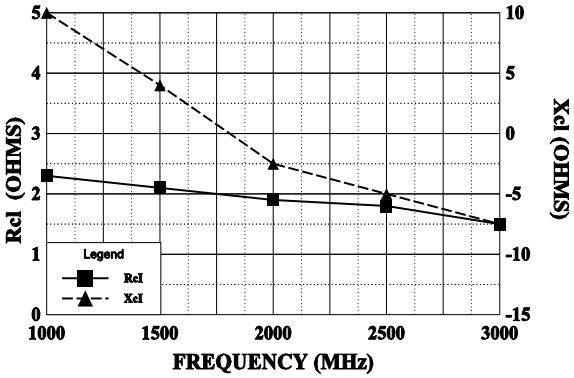
INPUT IMPEDANCE

Vcc = 20 V, Pin = 1.1 W



LOAD IMPEDANCE

Vcc = 20 V, Pin = 1.1 W



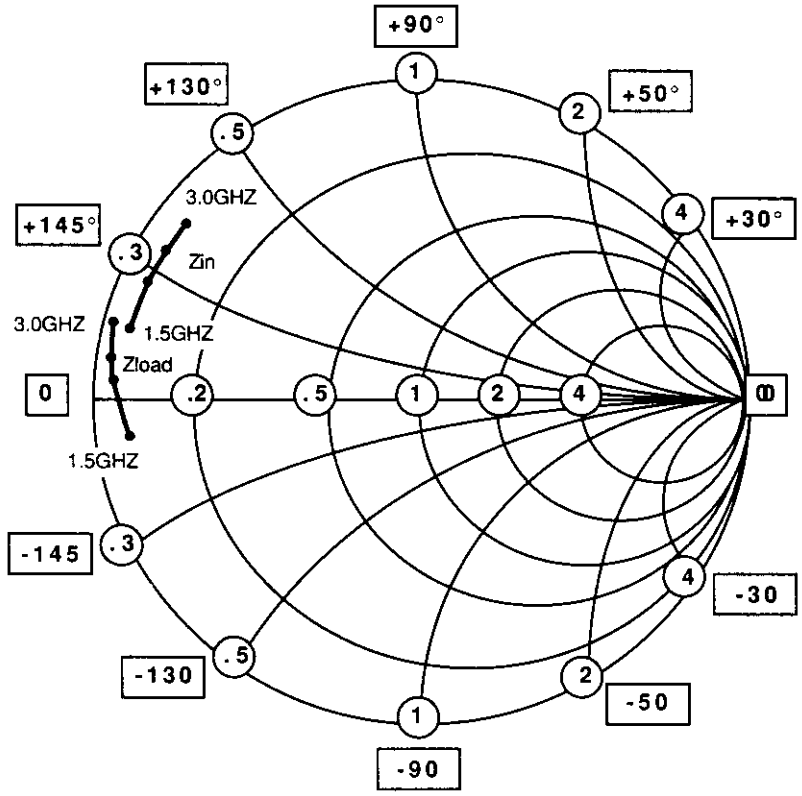
Rev 1,

August 1996

SMITH CHART

2307

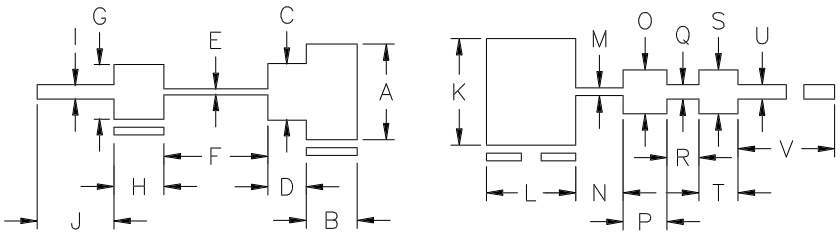
NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES



NORMALIZED TO A 50 OHM SYSTEM.

FREQUENCY MHz	Zin R	Zin JX	FREQUENCY MHz	Zload R	Zload JX
1500	2	8	1500	2.1	5
2000	1.9	14	2000	1.9	-3
2300	1.85	17	2300	1.8	-5
3000	1.8	20	3000	1.5	-7.5

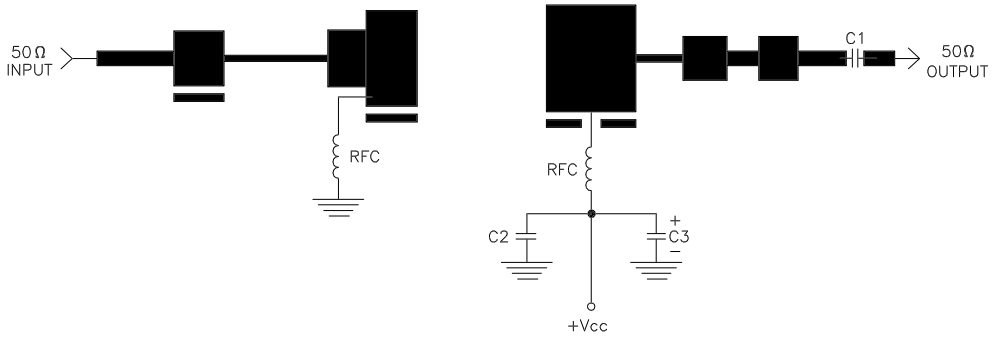
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



DIM	INCHES
A	.525
B	.280
C	.310
D	.210
E	.033
F	.570
G	.300
H	.275
I	.078
J	.420
K	.585
L	.490
M	.042
N	.260
O	.240
P	.240
Q	.078
R	.175
S	.240
T	.215
U	.078
V	.530

2307 TEST CIRCUIT

F = 2.3 GHz



▬ = Microstrip on 0.020" Duroid, Er=2.55
C1, C2 = 68pF ATC "A"
C3 = 10MFD @ 35V

	CAGE	DWG NO.	REV
GHz TECHNOLOGY	0PJR2	2307	A
		SCALE 1/1	SHEET