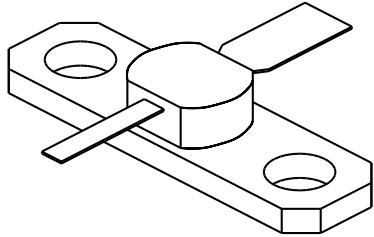

2307

7.0 Watts - 20 Volts, Class C
Microwave 2300 MHz

<p>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.</p>	<p>CASE OUTLINE 55 BT- Style 1</p> 																
<p>ABSOLUTE MAXIMUM RATINGS</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">Maximum Power Dissipation @ 25°C</td> <td style="text-align: right;">20.5 Watts</td> </tr> <tr> <td colspan="2">Maximum Voltage and Current</td> </tr> <tr> <td>BVces Collector to Emitter Voltage</td> <td style="text-align: right;">42 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;">1.0 A</td> </tr> <tr> <td colspan="2">Maximum Temperatures</td> </tr> <tr> <td>Storage Temperature</td> <td style="text-align: right;">- 65 to + 200°C</td> </tr> <tr> <td>Operating Junction Temperature</td> <td style="text-align: right;">+ 200°C</td> </tr> </table>	Maximum Power Dissipation @ 25°C	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 + 200°C	Operating Junction Temperature	+ 200°C	
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ELECTRICAL CHARACTERISTICS @ 25 °C

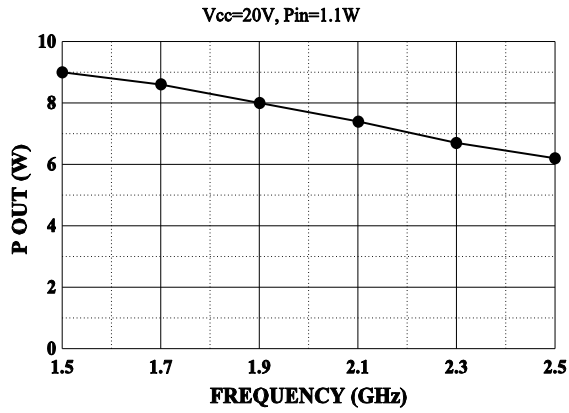
SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out	F = 2.3 GHz	7.0			Watt
Pin	Power Input	Vcb = 20 Volts			1.1	Watt
Pg	Power Gain	Po = 7 Watts	8.0			dB
η_c	Collector Efficiency	As Above		40		%
VSWR₁	Load Mismatch Tolerance	F = 2.3 GHz, Po = 7 W			30:1	

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	°C/W

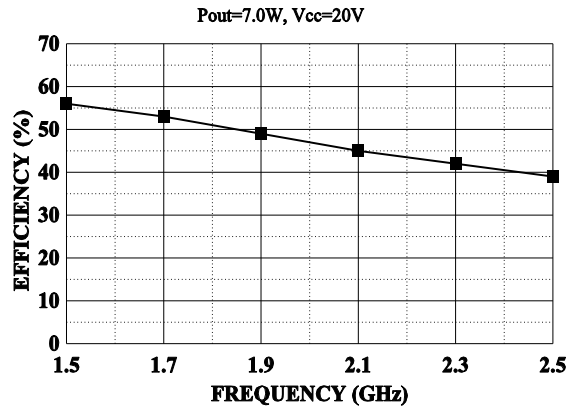
Issue August 1996

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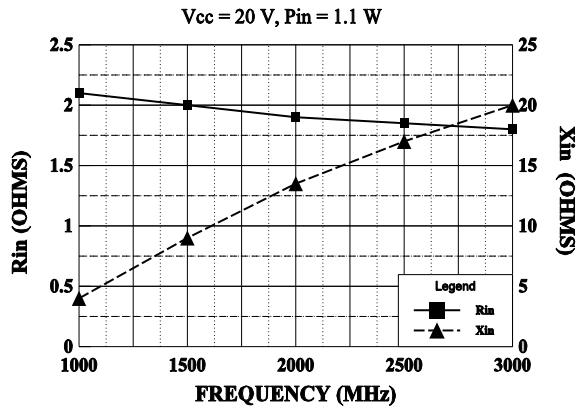
POWER OUTPUT VS FREQUENCY



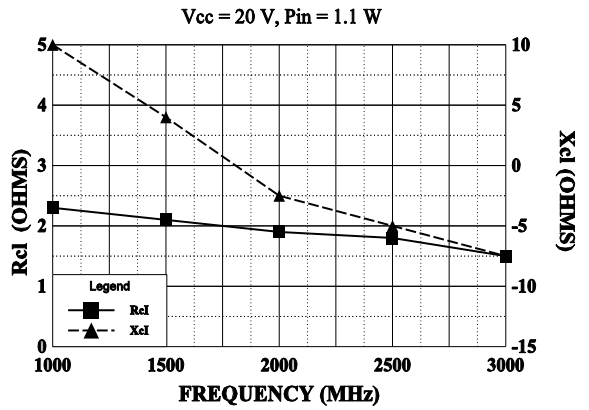
EFFICIENCY VS FREQUENCY



INPUT IMPEDANCE



LOAD IMPEDANCE



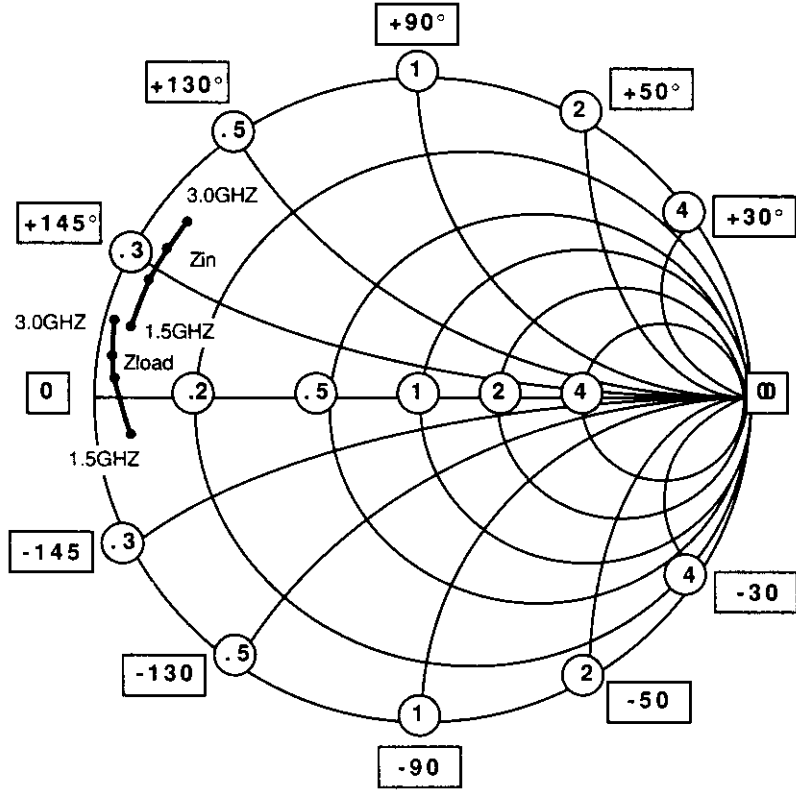
Rev 1,

August 1996

SMITH CHART

2307

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES

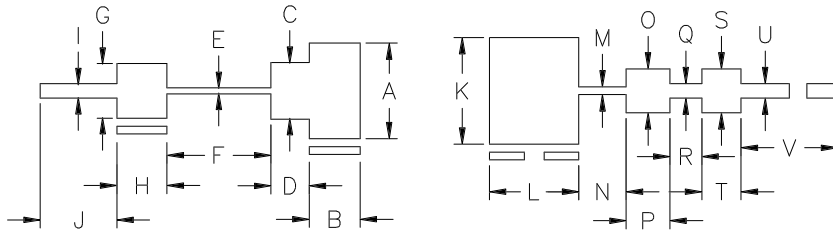


NORMALIZED TO A 50 OHM SYSTEM.

FREQUENCY MHz	R	Z _{in}	JX	FREQUENCY MHz	R	Z _{load}	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

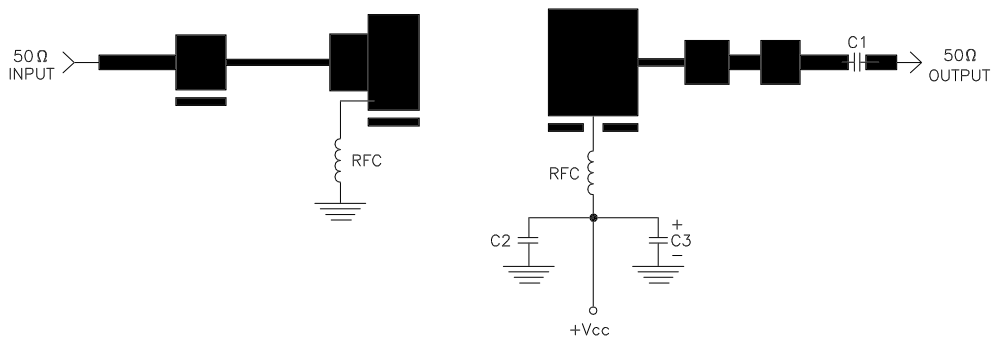
ZONE	REV	DESCRIPTION	DATE	APPROVED
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DIM	INCHES
A	.525
B	.280
C	.310
D	.210
E	.033
F	.570
G	.300
H	.275
I	.078
J	.420
K	.585
L	.490
M	.042
N	.260
O	.240
P	.240
Q	.078
R	.175
S	.240
T	.215
U	.078
V	.530

2307 TEST CIRCUIT

F = 2.3 GHz



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



CAGE OPJR2	DWG NO. 2307	REV A
	SCALE 1/1	SHEET