

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.

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

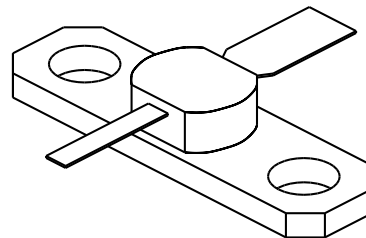
Maximum Temperatures

Storage Temperature - 65 to + 200°C

Operating Junction Temperature + 200°C

CASE OUTLINE

55 BT- Style 1



ELECTRICAL CHARACTERISTICS @ 25 °C

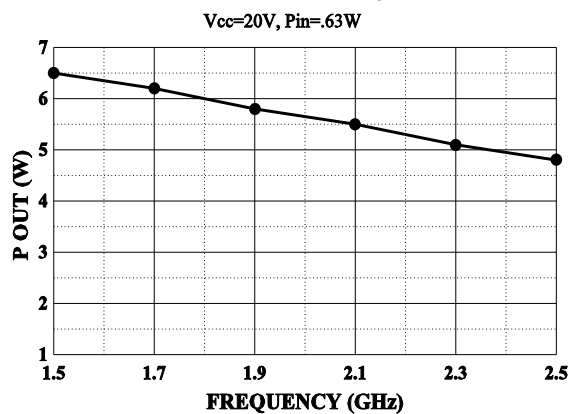
SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P_{out}	Power Out	F = 2.3 GHz	4.0			Watt
P_{in}	Power Input	V _{cb} = 20 Volts			0.63	Watt
P_g	Power Gain	P _o = 4 Watts	8.0			dB
η_c	Collector Efficiency	As Above		40		%
VSWR₁	Load Mismatch Tolerance	F = 2.3 GHz, P _o = 4 W			30:1	

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

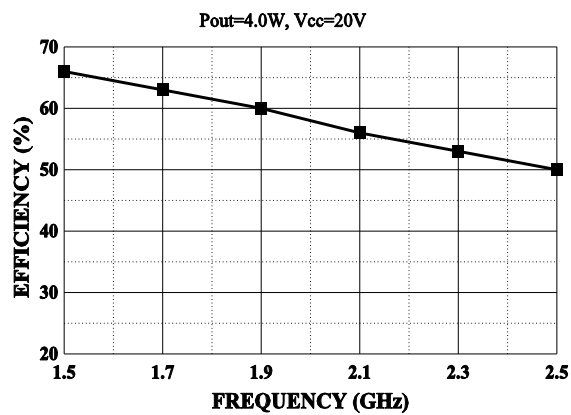
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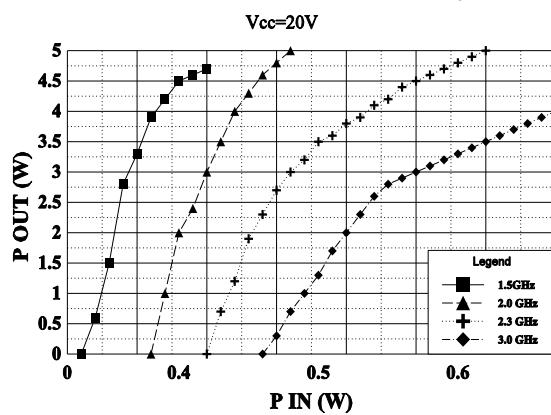
POWER OUTPUT VS FREQUENCY



EFFICIENCY VS FREQUENCY



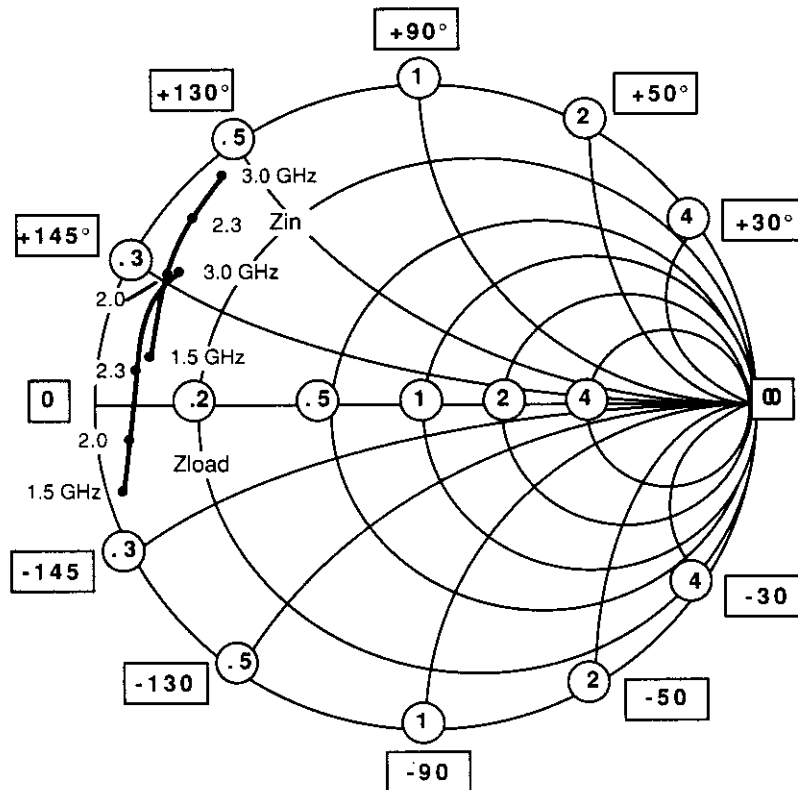
TRANSFER CHARACTERISTICS VS FREQUENCY



SMITH CHART

2304

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES

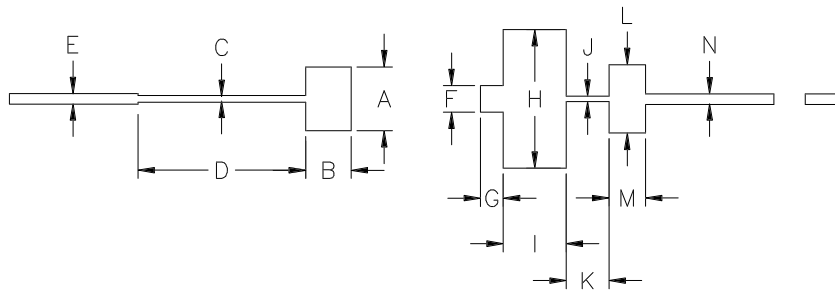


NORMALIZED TO A 50 OHM SYSTEM.

FREQUENCY MHz	R	Z_{in} JX	FREQUENCY MHz	R	Z_{load} 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

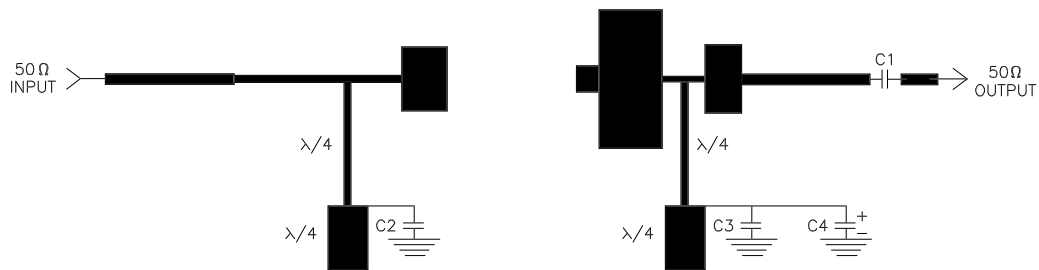
ZONE	REV	DESCRIPTION	DATE	APPROVED
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DIM	INCHES
A	.350
B	.250
C	.038
D	.920
E	.058
F	.145
G	.125
H	.760
I	.345
J	.030
K	.235
L	.375
M	.200
N	.058

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 OPJR2	DWG NO. 2304	REV B
SCALE 1/1	SHEET	

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