

GENERAL DESCRIPTION

The 2304 is a common base transistor capable of providing 4 watts of CW RF output power at 2300 MHz. This hermetically sealed transistor is specifically designed for telemetry and telecommunications applications. It utilizes gold metalization and diffused ballasting to provide high reliability and supreme ruggedness.

2304
4.0 WATTS - 20 VOLTS
2300 MHz

MICROWAVE CW BIPOLAR

ABSOLUTE MAXIMUM RATINGS

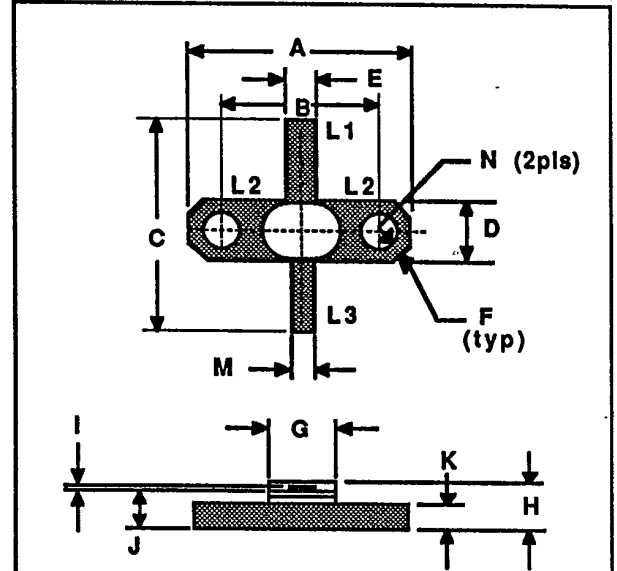
Maximum Power Dissipation @ 25°C Case Temperature 10.2 W

Maximum Voltage and Current

BVces Collector to Emitter Voltage 50 V
 BVebo Emitter to Base Voltage 3.5 V
 Ic Collector Current 0.6 A

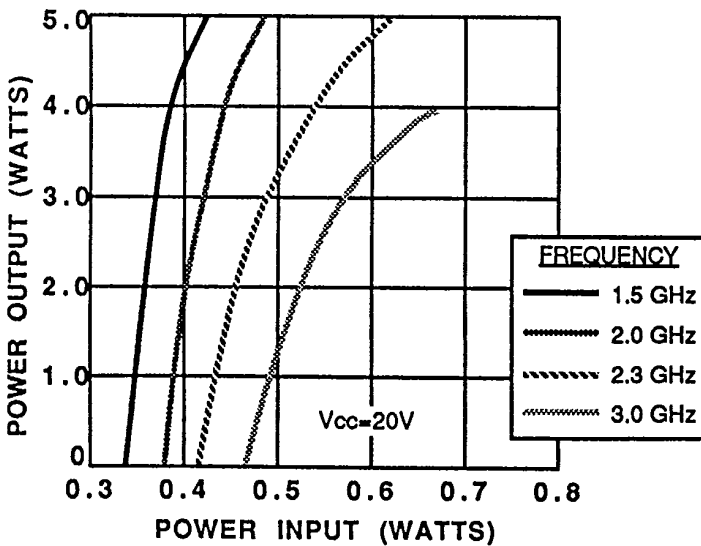
Maximum Temperatures

Storage Temperature -65 to +200 °C
 Operating Junction Temperature +200 °C

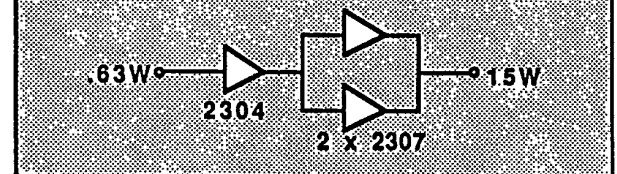


DIM	Millimeter	TOL	Inches	TOL
L1 : B				
L2 : E				
L3 : C				
A	20.32	.13	.800	.005
B	14.27	.13	.562	.005
C	18.03	MIN	.710	MIN
D	5.84	.13	.230	.005
E	3.05	.13	.120	.005
F	45°	5°	45°	5°
G	5.84	.13	.230	.005
H	4.57	REF	.180	REF
I	0.13	.02	.005	.001
J	3.81	.13	.150	.005
K	1.52	.13	.060	.005
M	1.27	.13	.050	.005
N	3.30	.13	.130	.005

TRANSFER CHARACTERISTICS VS FREQUENCY (TYPICAL)



TYPICAL AMPLIFIER LINE UP
 Vcc= 20 Volts
 Frequency Range= 2300 MHz



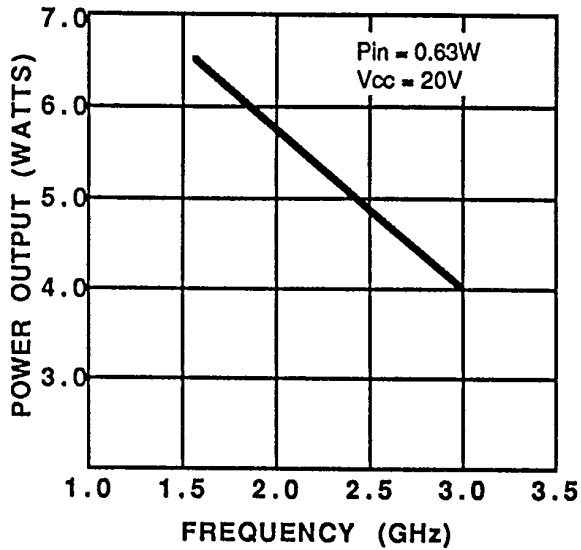
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ELECTRICAL CHARACTERISTICS¹

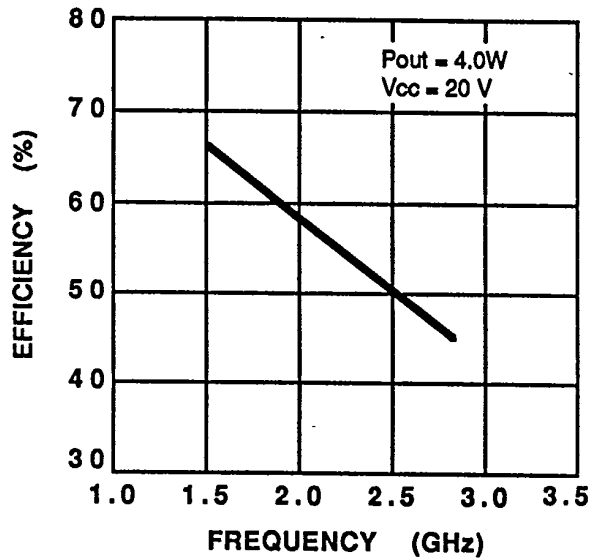
SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
P _{out}	Power Output	f = 2.3GHz V _{cc} = 20V	4.0			Watts
P _{in}	Power Input				0.63	Watts
P _g	Power Gain		8.0			dB
η _c	Collector Efficiency		40			%
VSWR	Load Mismatch Tolerance				∞:1	
BV _{ebo}	Breakdown Voltage (Emitter to Base)	I _c = 0A, I _e = 3.0mA	3.5			Volts
BV _{ces}	Breakdown Voltage (Collector to Emitter)	V _{be} = 0A, I _c = 30mA	45			Volts
I _{cbo}	Collector Leakage Current	I _e = 0A, V _{cb} = 22V			1.5	mA
C _{ob}	Capacitance-Collector to Base	f = 1.0 MHz, V _{cb} = 28V		7.0		pF
h _{FE}	DC-Current Gain	V _{ce} = 5V, I _c = 300mA	10			
θ _{jc}	Thermal Resistance	T _c = 25°C			17	°C/W

Note 1: T_c = +25°C unless otherwise specified

POWER OUTPUT VS FREQUENCY (TYPICAL)



EFFICIENCY VS FREQUENCY (TYPICAL)

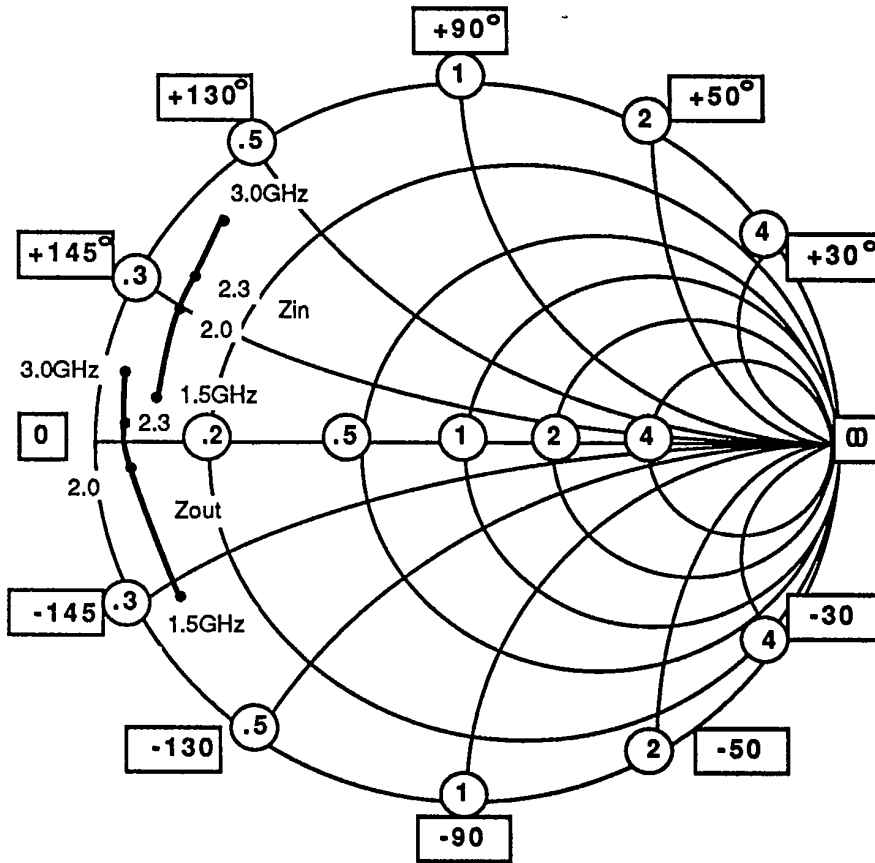


SPECIFICATIONS MAY BE SUBJECT TO CHANGE WITHOUT NOTICE

416

**SMITH CHART
2304**

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES



NORMALIZED TO A 50 OHM SYSTEM.

FREQUENCY MHz	Zsource R	JX	FREQUENCY MHz	Zload R	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