

**GENERAL DESCRIPTION**

The 2307 is a common base transistor capable of providing 7 watts of CW RF output power at 2300 MHz. This hermetically sealed transistor is specifically designed for telemetry and telecommunications applications. It utilizes gold metallization and diffused ballasting to provide high reliability and supreme ruggedness.

**2307**  
**7.0 WATTS - 20 VOLTS**  
**2300 MHz**

**MICROWAVE CW BIPOLAR**

**ABSOLUTE MAXIMUM RATINGS**

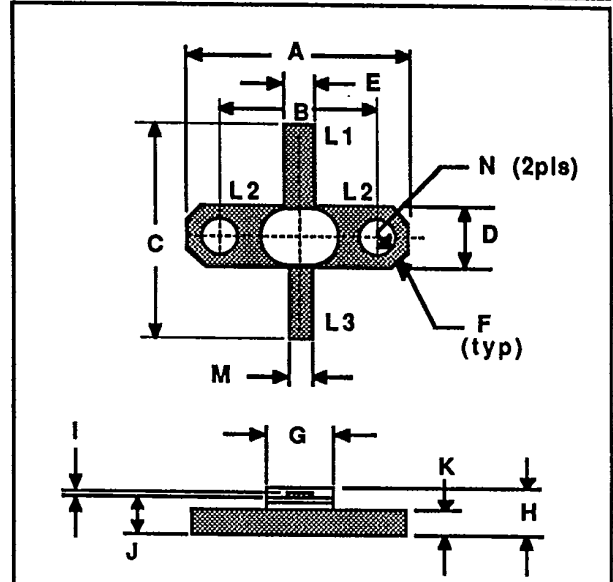
Maximum Power Dissipation @ 25°C Case Temperature **20.5 W**

Maximum Voltage and Current

BVces Collector to Emitter Voltage **42 V**  
 BVebo Emitter to Base Voltage **3.5 V**  
 Ic Collector Current **1.0 A**

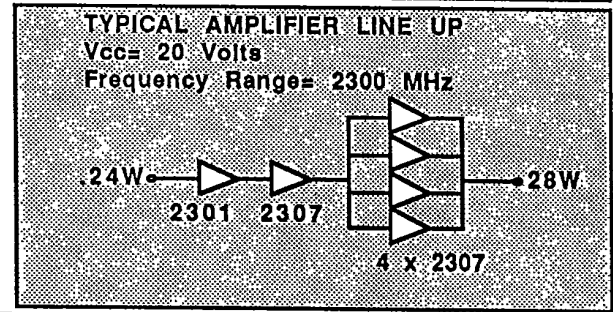
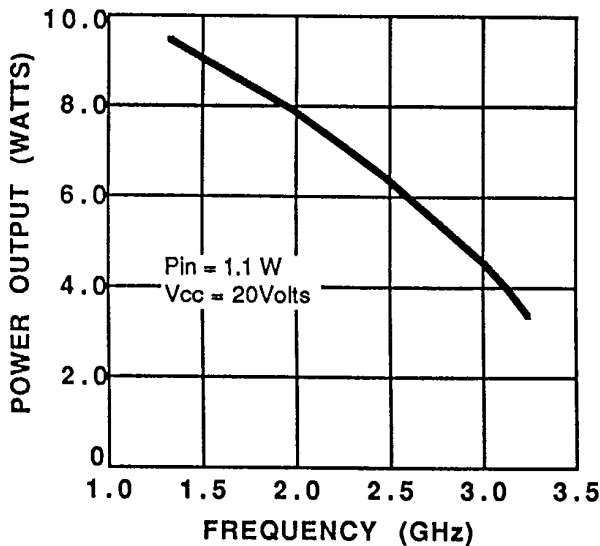
Maximum Temperatures

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



DIM	Millimeter	TOL	Inches	TOL
L1 : B	A	20.32	.13	.800 .005
L2 : E	B	14.27	.13	.562 .005
L3 : C	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

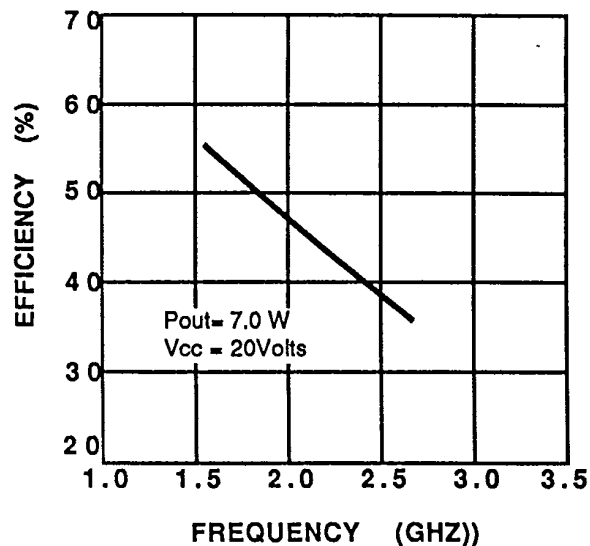
**POWER OUTPUT VS FREQUENCY (TYPICAL)**



2307-2

ELECTRICAL CHARACTERISTICS<sup>1</sup>

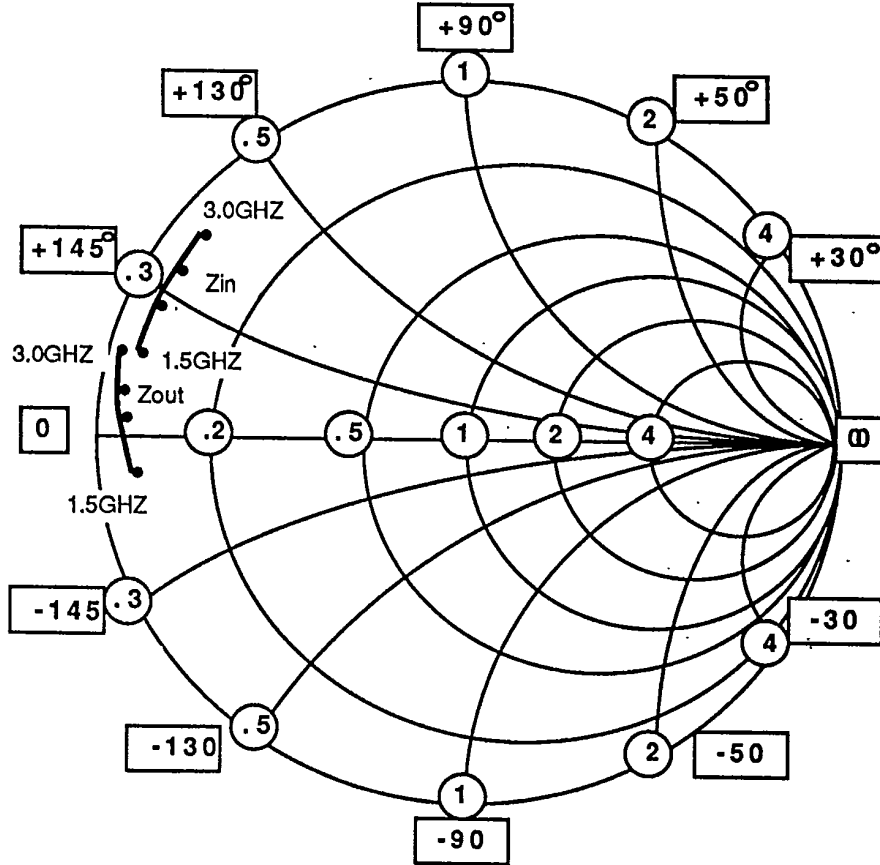
SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
P <sub>out</sub>	Power Output	f = 2.3GHz V <sub>cb</sub> = 20V P <sub>in</sub> = 1.1W	7.0			Watts
P <sub>in</sub>	Power Input				1.1	Watts
P <sub>g</sub>	Power Gain		8.0			dB
$\eta_c$	Collector Efficiency		35			%
V <sub>SWR</sub>	Load Mismatch Tolerance				$\infty:1$	
B <sub>Vebo</sub>	Breakdown Voltage (Emitter to Base)	I <sub>c</sub> = 0A, I <sub>e</sub> = 5.0mA	3.5			Volts
B <sub>Vces</sub>	Breakdown Voltage (Collector to Emitter)	V <sub>be</sub> = 0A, I <sub>c</sub> = 50mA	42			Volts
I <sub>cbo</sub>	Collector Leakage Current	I <sub>e</sub> = 0A, V <sub>cb</sub> = 22V			2.5	mA
C <sub>ob</sub>	Capacitance- Collector to Base	f = 1.0MHz, V <sub>cb</sub> = 22V		10		pF
h <sub>FE</sub>	DC-Current Gain	V <sub>ce</sub> = 5V, I <sub>c</sub> = 500mA	10			
$\theta_{jc}$	Thermal Resistance	T <sub>c</sub> = 25°C			8.5	°C/W

Note 1: T<sub>c</sub> = +25°C unless otherwise specifiedEFFICIENCY VS FREQUENCY  
(TYPICAL)

SPECIFICATIONS MAY BE SUBJECT TO CHANGE WITHOUT NOTICE

**SMITH CHART**  
**2307**

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES



NORMALIZED TO A 50 OHM SYSTEM.

FREQUENCY MHz	R	Zin	JX	FREQUENCY MHz	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

420