GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

2301

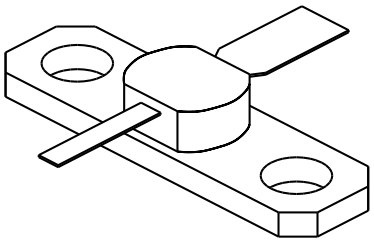
1.5 Watt - 20 Volts, Class C
Microwave 2300 MHz

GENERAL DESCRIPTION

The 2301 is a COMMON BASE transistor capable of providing 1.5 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 @ 25°C	5.6 Watts
Maximum Voltage and Current	
BVces Collector to Emitter Voltage	45 Volts
BVebo Emitter to Base Voltage	3.5 Volts
Ic Collector Current	0.3 A
Maximum Temperatures	
Storage Temperature	- 65 to + 200°C
Operating Junction Temperature	+ 200°C

ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out	F = 2.3 GHz	1.5			Watt
Pin	Power Input	Vcb = 20 Volts			0.24	Watt
Pg	Power Gain	Po = 1.5 Watts	8.0			dB
η_c	Collector Efficiency	As Above		40		%
$VSWR_1$	Load Mismatch Tolerance	F = 2.3 GHz, Po = 1.5 W			30:1	

BVces	Collector to Emitter Breakdown	Ic = 10 mA	45			Volts
BVebo	Emitter to Base Breakdown	Ie = 1.0 mA	3.5			Volts
h_{FE}	Current Gain	Vce = 5 V, Ic = 100 mA	10			
Cob	Output Capacitance	F = 1.0 MHz, Vcb = 22V		4.0		pF
θ_{jc}	Thermal Resistance				31	°C/W

Issue August 1996

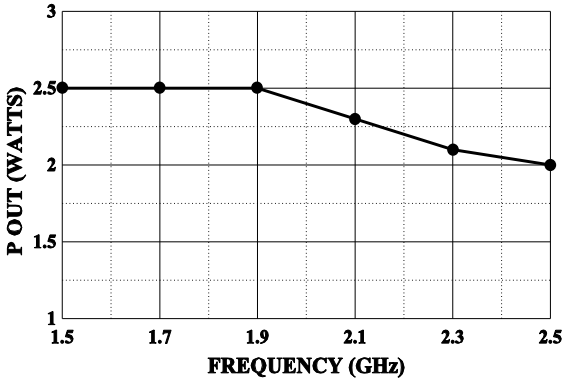
GHz Technology Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031 Fax 408 / 986-8120

GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

2301

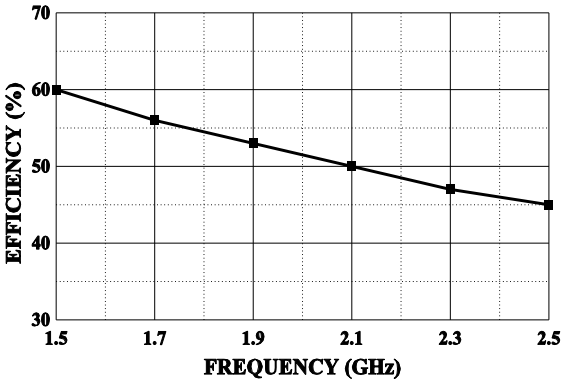
POWER OUTPUT VS FREQUENCY

Vcc=20V, Pin=.24W



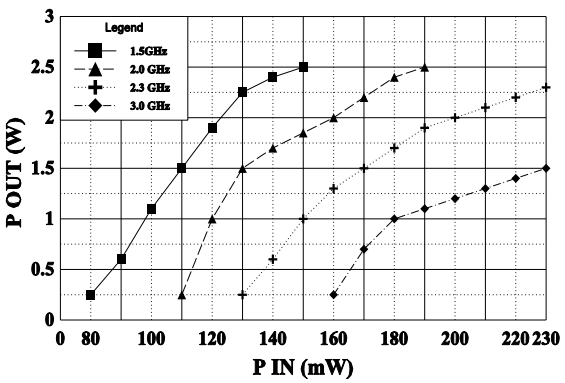
EFFICIENCY VS FREQUENCY

Pot = 1.5 W, Vcc=20V



TRANSFER CHARACTERISTICS VS FREQUENCY

Vcc=20V

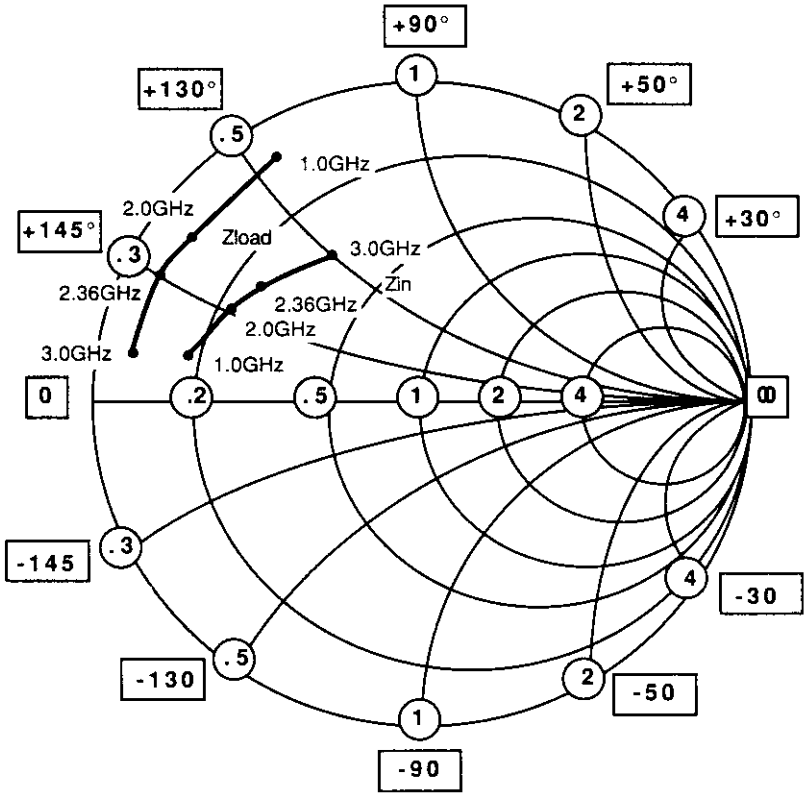


August 1996

SMITH CHART

2301

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES



NORMALIZED TO A 50 OHM SYSTEM.

FREQUENCY MHz	Zin R	Zin +JX	FREQUENCY MHz	Zload R	Zload +JX
1000	8.5	7.5	1000	5	22
2000	11	15	2000	4	17
2300	13	18	2300	3.7	14
3000	16	20	3000	2.8	6.5