

# 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.

## 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

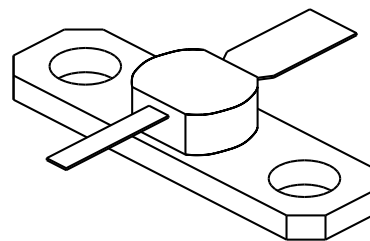
### Maximum Temperatures

Storage Temperature - 65 to + 200°C

Operating Junction Temperature + 200°C

## CASE OUTLINE

### 55 BT- Style 1



## ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
<b>P<sub>out</sub></b>	Power Out	F = 2.3 GHz	1.5			Watt
<b>P<sub>in</sub></b>	Power Input	V <sub>cb</sub> = 20 Volts			0.24	Watt
<b>P<sub>g</sub></b>	Power Gain	P <sub>o</sub> = 1.5 Watts	8.0	40		dB
<b>η<sub>c</sub></b>	Collector Efficiency	As Above				%
<b>VSWR<sub>1</sub></b>	Load Mismatch Tolerance	F = 2.3 GHz, P <sub>o</sub> = 1.5 W			30:1	

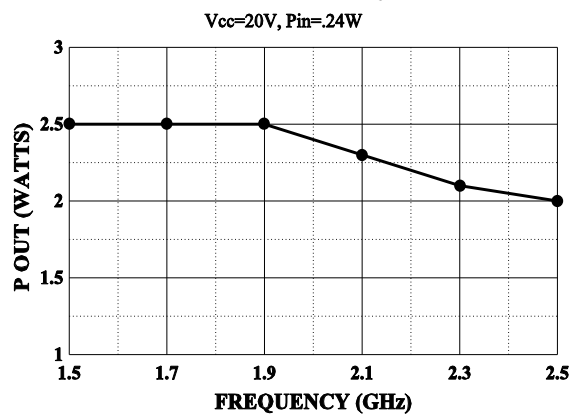
<b>BVces</b>	Collector to Emitter Breakdown	I <sub>c</sub> = 10 mA	45			Volts
<b>BVebo</b>	Emitter to Base Breakdown	I <sub>e</sub> = 1.0 mA	3.5			Volts
<b>h<sub>FE</sub></b>	Current Gain	V <sub>ce</sub> = 5 V, I <sub>c</sub> = 100 mA	10	4.0		
<b>Cob</b>	Output Capacitance	F = 1.0 MHz, V <sub>cb</sub> = 22V			31	pF
<b>θ<sub>jc</sub></b>	Thermal Resistance					°C/W

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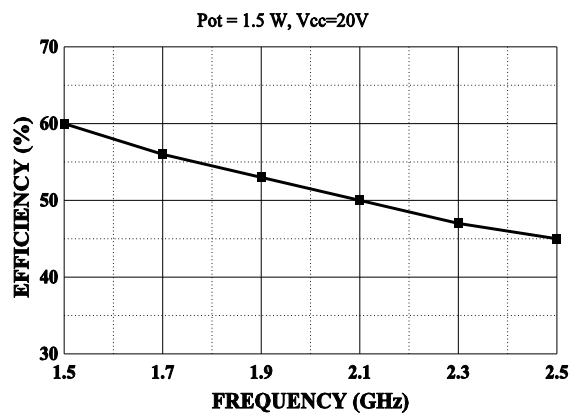
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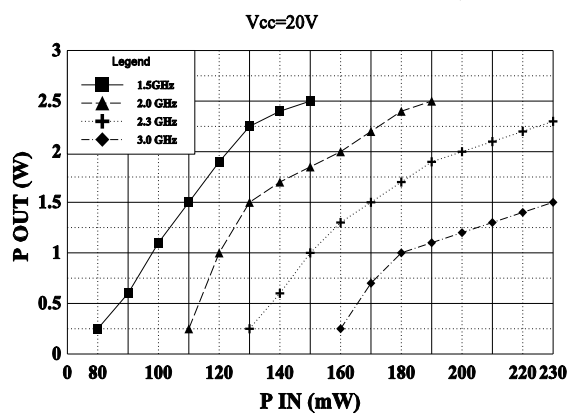
**POWER OUTPUT VS FREQUENCY**



**EFFICIENCY VS FREQUENCY**



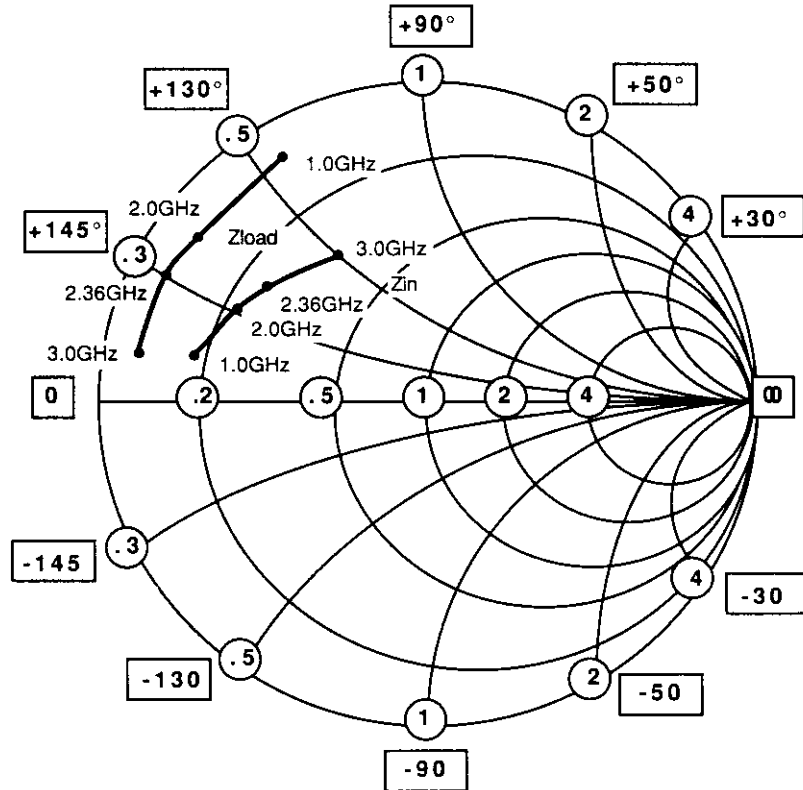
**TRANSFER CHARACTERISTICS VS FREQUENCY**



# SMITH CHART

2301

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES



NORMALIZED TO A 50 OHM SYSTEM.

FREQUENCY MHz	R	Z <sub>in</sub>	+JX	FREQUENCY MHz	R	Z <sub>load</sub>	+JX
1000	8.5		7.5	1000	5		2.2
2000	11		1.5	2000	4		1.7
2300	13		1.8	2300	3.7		1.4
3000	16		2.0	3000	2.8		6.5