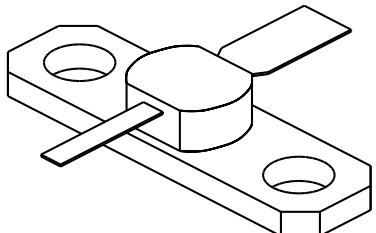


# 2001

1.0 Watt - 28 Volts, Class C  
Microwave 2000 MHz

<p><b>GENERAL DESCRIPTION</b> The 2001 is a COMMON BASE transistor capable of providing 1 Watts Class C, RF output power at 2000 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.</p>	<p><b>CASE OUTLINE</b> <b>55BT-1, Style 1</b></p> 
<p><b>ABSOLUTE MAXIMUM RATINGS</b></p> <p>Maximum Power Dissipation @ 25°C <span style="float: right;">5.0 Watts</span></p> <p><b>Maximum Voltage and Current</b></p> <p>BVces Collector to Emitter Voltage <span style="float: right;">50 Volts</span>          BVebo Emitter to Base Voltage <span style="float: right;">3.5 Volts</span>          Ic Collector Current <span style="float: right;">0.25 A</span></p> <p><b>Maximum Temperatures</b></p> <p>Storage Temperature <span style="float: right;">- 65 to + 200°C</span>          Operating Junction Temperature <span style="float: right;">+ 200°C</span></p>	

## ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
<b>Pout</b>	Power Out	F = 2 GHz	1.0			Watt
<b>Pin</b>	Power Input	Vcb = 28 Volts			0.125	Watt
<b>Pg</b>	Power Gain	Po = 1.0 Watts	9.0	9.5		dB
$\eta_c$	Collector Efficiency	As Above		40		%
<b>VSWR<sub>1</sub></b>	Load Mismatch Tolerance	F = 2 GHz, Po = 1.0 W			30:1	

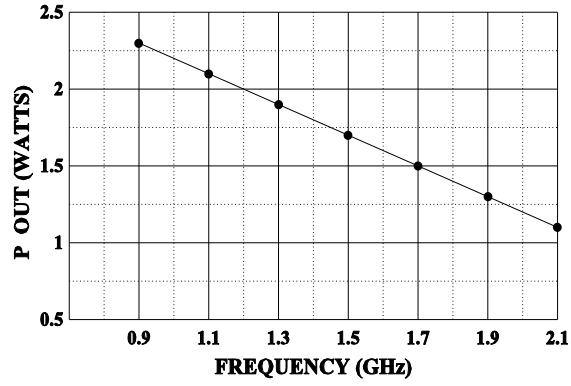
<b>BVces</b>	Collector to Emitter Breakdown	Ic = 10 mA	50			Volts
<b>BVcbo</b>	Collector to Base Breakdown	Ic = 1 mA	45			Volts
<b>BVebo</b>	Emitter to Base Breakdown	Ie = 1.0 mA	3.5			Volts
<b>Icbo</b>	Collector to Base Current	Vcb = 28 Volts			500	µA
<b>h<sub>FE</sub></b>	Current Gain	Vce = 5 V, Ic = 100 mA	20			
<b>Cob</b>	Output Capacitance	F = 1 MHz, Vcb = 28 V		4.0		pF
$\theta_{jc}$	Thermal Resistance				35	°C/W

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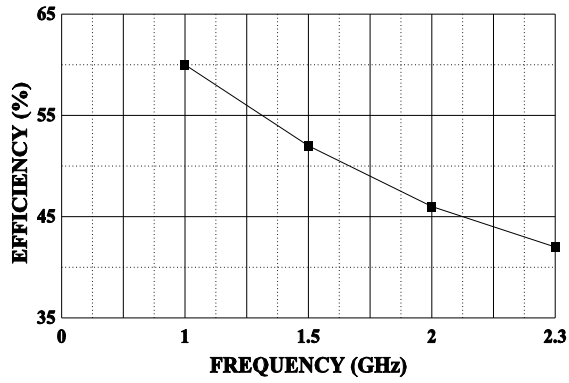
**POWER OUTPUT VS FREQUENCY**

V<sub>cc</sub>=28V, P<sub>in</sub>=0.125W



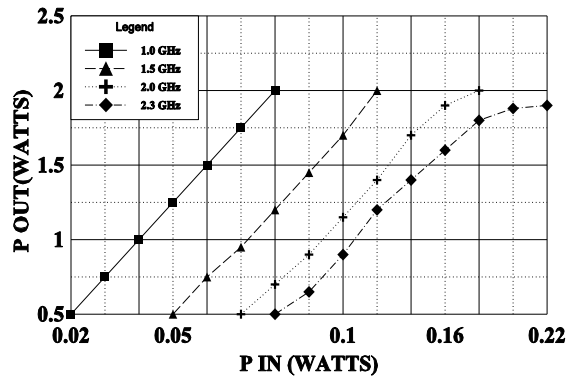
**EFFICIENCY VS FREQUENCY**

V<sub>cc</sub>=28V



**POWER OUTPUT VS POWER INPUT**

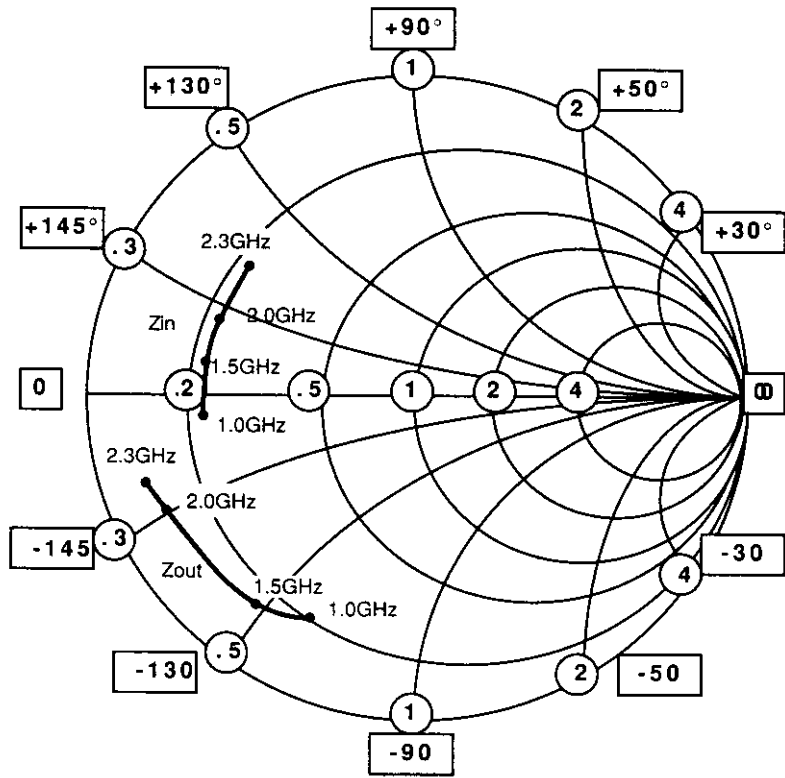
V<sub>cc</sub>=28V



**SMITH CHART**

**2001**

**NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES**

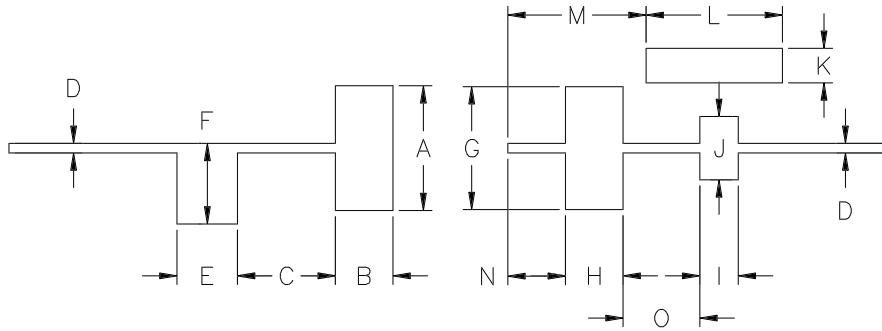


**NORMALIZED TO A 50 OHM SYSTEM.**

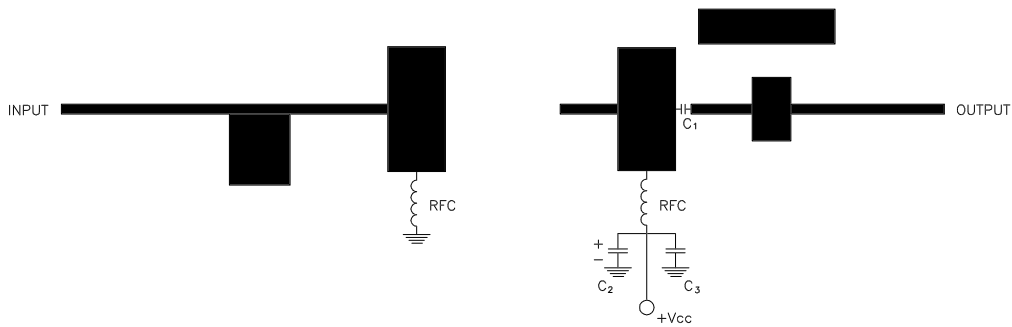
REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
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DIM	INCHES
A	.650
B	.300
C	.510
D	.050
E	.315
F	.420
G	.640
H	.300
I	.200
J	.330
K	.180
L	.710
M	.720
N	.300
O	.400



2001 TEST AMPLIFIER  
F = 2.0 GHz



- = MICROSTRIP ON 15 MIL DUROID Er = 2.3
- C<sub>1</sub> = 3.6 ATC A CHIP
- C<sub>2</sub> = 180pf ATC B CHIP
- C<sub>3</sub> = 10 MFD 50V