

2001

1.0 Watt - 28 Volts, Class C
Microwave 2000 MHz

GENERAL DESCRIPTION

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.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C 5.0 Watts

Maximum Voltage and Current

BVces Collector to Emitter Voltage 50 Volts

BVebo Emitter to Base Voltage 3.5 Volts

Ic Collector Current 0.25 A

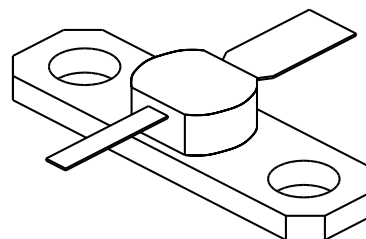
Maximum Temperatures

Storage Temperature - 65 to + 200°C

Operating Junction Temperature + 200°C

CASE OUTLINE

55BT-1, Style 1



ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P_{out}	Power Out	F = 2 GHz	1.0			Watt
P_{in}	Power Input	V _{cb} = 28 Volts			0.125	Watt
P_g	Power Gain	P _o = 1.0 Watts	9.0	9.5		dB
η_c	Collector Efficiency	As Above		40		%
VSWR₁	Load Mismatch Tolerance	F = 2 GHz, P _o = 1.0 W			30:1	

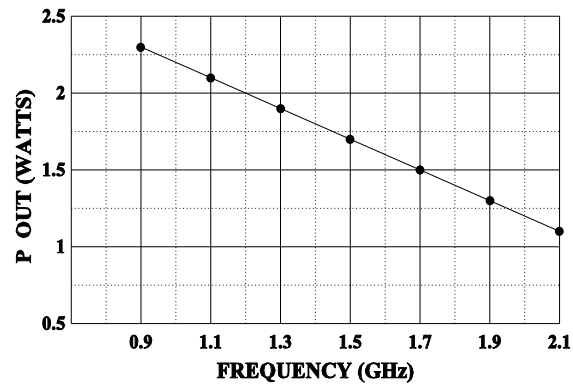
BVces	Collector to Emitter Breakdown	I _c = 10 mA	50			Volts
BVcbo	Collector to Base Breakdown	I _c = 1 mA	45			Volts
BVebo	Emitter to Base Breakdown	I _e = 1.0 mA	3.5			Volts
Icbo	Collector to Base Current	V _{cb} = 28 Volts			500	μA
h_{FE}	Current Gain	V _{ce} = 5 V, I _c = 100 mA	20			
Cob	Output Capacitance	F = 1 MHz, V _{cb} = 28 V		4.0		pF
θ_{jc}	Thermal Resistance				35	°C /W

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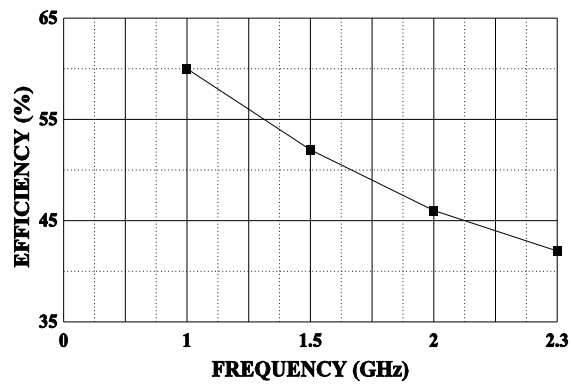
POWER OUTPUT VS FREQUENCY

$V_{cc}=28V$, $P_{in}=0.125W$



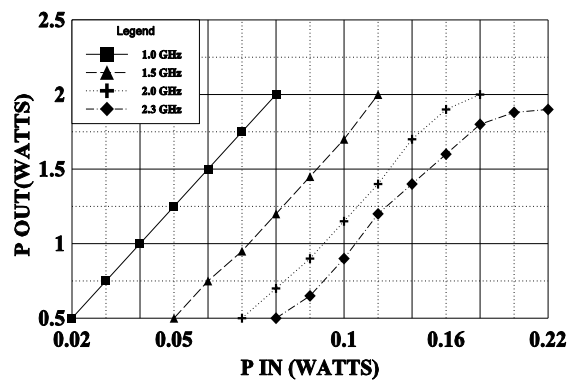
EFFICIENCY VS FREQUENCY

$V_{cc}=28V$



POWER OUTPUT VS POWER INPUT

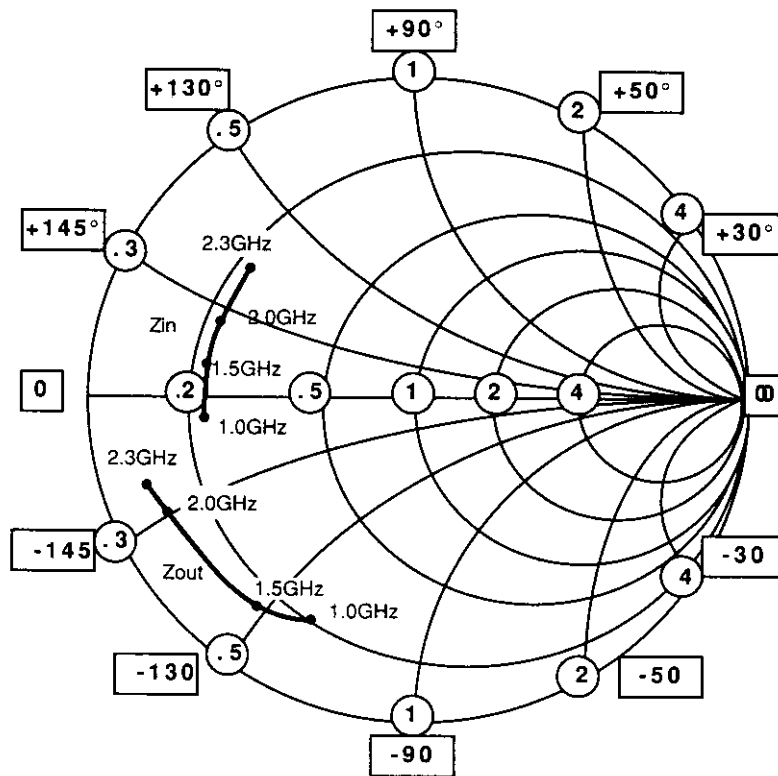
$V_{cc}=28V$



SMITH CHART

2001

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES

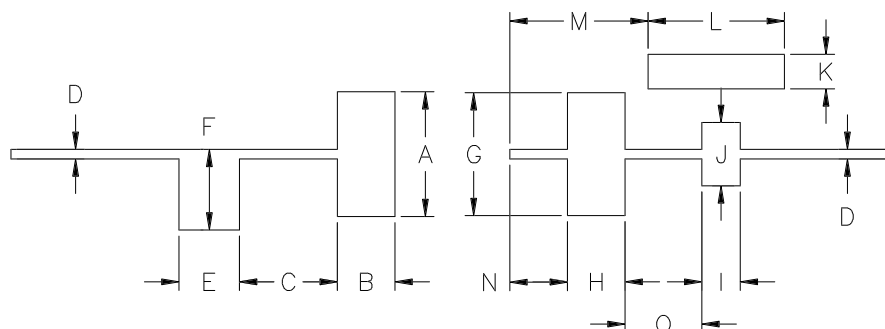


NORMALIZED TO A 50 OHM SYSTEM.

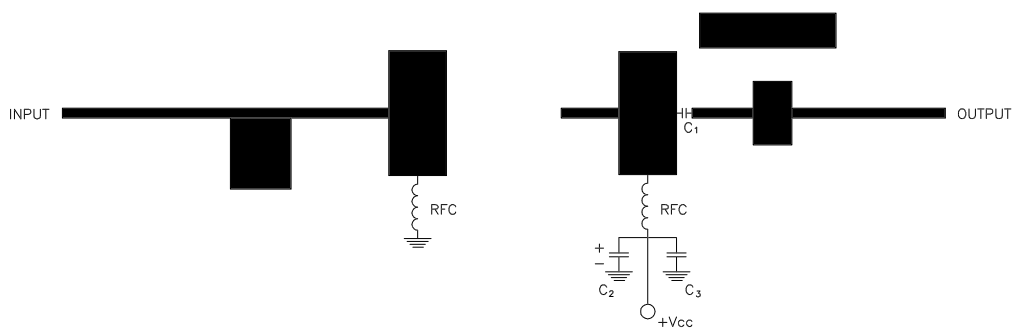
REVISIONS

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 $\epsilon_r = 2.3$
 C_1 = 3.6 ATC A CHIP
 C_2 = 180pf ATC B CHIP
 C_3 = 10 MFD 50V



CHz TECHNOLOGY

CAGE
OPJR2

DWG NO.

2001

REV

A

SCALE

1/1

SHEET