

3001

1 Watt - 28 Volts, Class C
Microwave 3000 MHz

GENERAL DESCRIPTION

The 3001 is a COMMON BASE transistor capable of providing 1 Watts Class C, RF output power at 3000 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 Watts

Maximum Voltage and Current

BVces Collector to Emitter Voltage 50 Volts

BVebo Emitter to Base Voltage 3.5 Volts

Ic Collector Current 0.20 A

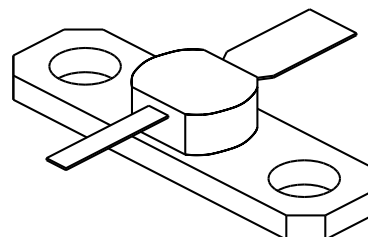
Maximum Temperatures

Storage Temperature - 65 to + 200°C

Operating Junction Temperature + 200°C

CASE OUTLINE

55BT, STYLE 1



ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P_{out}	Power Out	F = 3.0 GHz	1.0			Watt
P_{in}	Power Input	V _{cb} = 28 Volts		.14	0.2	Watt
P_g	Power Gain	P _o = 1 Watts	7.0	8.5		dB
η_c	Collector Efficiency	As Above		30		%
VSWR₁	Load Mismatch Tolerance	F = 3 GHz, P _o = 1 W			30:1	

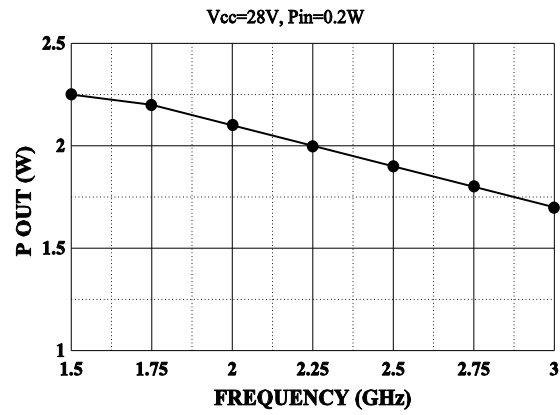
BVces	Collector to Emitter Breakdown	I _c = 10 mA	50			Volts
BVcbo	Collector to Base Breakdown	I _c = 1 mA	45			Volts
BVebo	Emitter to Base Breakdown	I _e = 1 mA	3.5			Volts
Icbo	Collector to Base Current	V _{cb} = 28 Volts			0.5	mA
h_{FE}	Current Gain	V _{ce} = 5 V, I _c = 100 mA	10			
Cob	Output Capacitance	F = 1 MHz, V _{cb} = 28 V			35	°C/W
θjc	Thermal Resistance					

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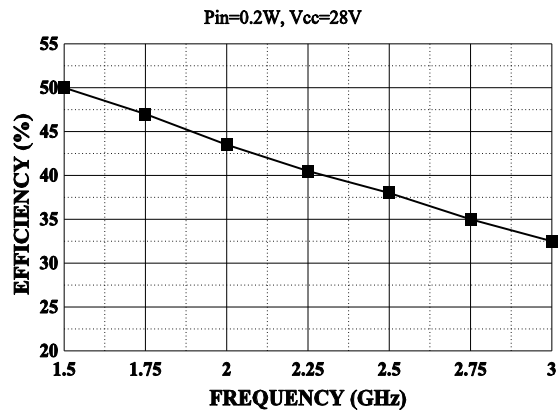
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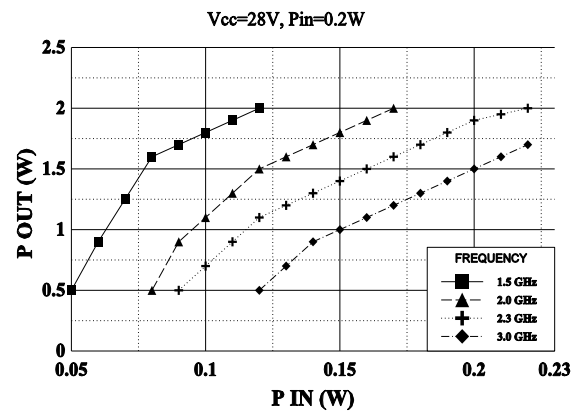
POWER OUTPUT VS FREQUENCY



EFFICIENCY VS FREQUENCY

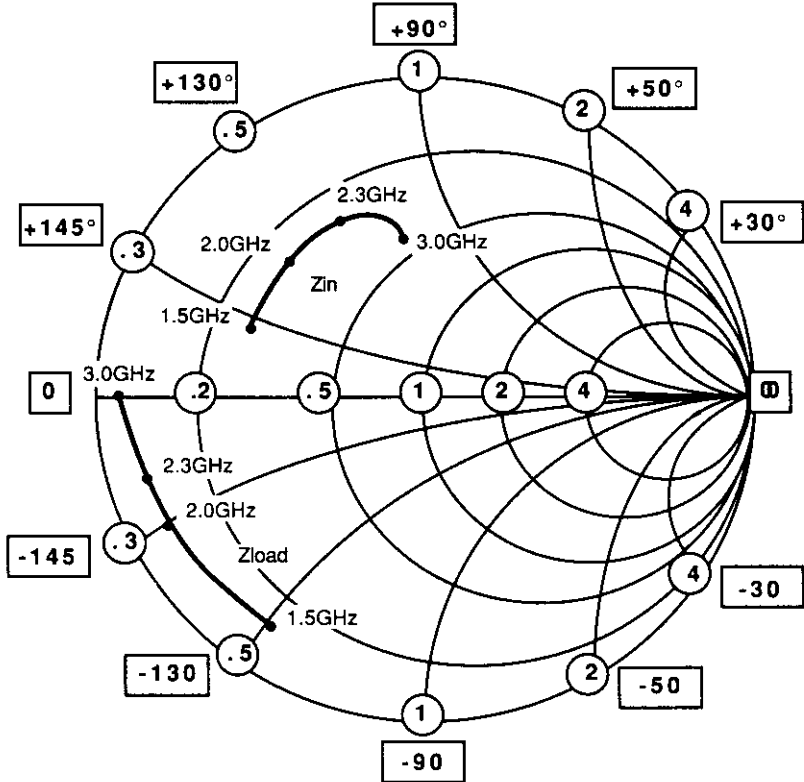


Pout VS Pin VS FREQUENCY

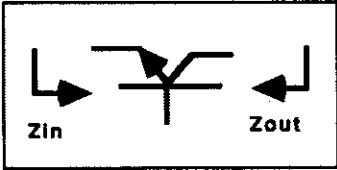


SMITH CHART 3001

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES



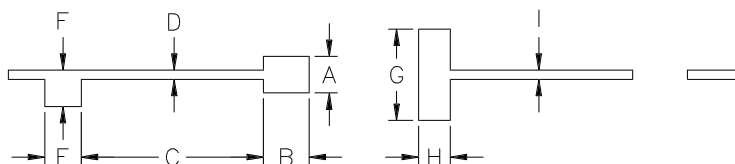
NORMALIZED TO A 50 OHM SYSTEM.



FREQUENCY MHz	R	Zin	JX	FREQUENCY MHz	R	Zload	JX
1.5	15		14	1.5	6		25
2.0	16		20	2.0	5		15
2.3	17		27	2.3	4.5		10
3.0	19		32	3.0	4		0

REVISIONS

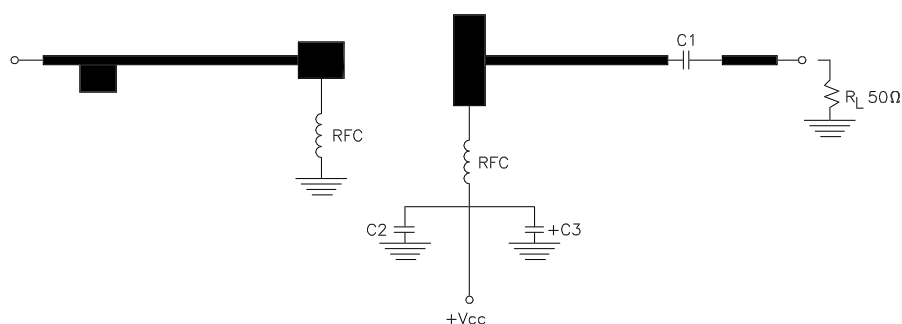
ZONE	REV	DESCRIPTION	DATE	APPROVED
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DIM	INCHES
A	.200
B	.250
C	1.000
D	.500
E	.200
F	.200
G	.500
H	.175
I	.050

3001 TEST AMPLIFIER

f = 3000 MHz



— = Microstrip on 0.020" Teflon Fiberglass, Er=2.55
 C1,C2 = ATC 'A' 47pf
 C3 = 10μfd @ 35 Volts



CAGE OPJR2	DWG NO. 3001	REV A
SCALE 1/1	SHEET	