GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

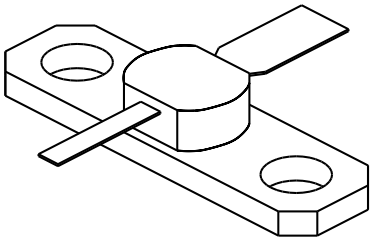
3001

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.

CASE OUTLINE
55BT, STYLE 1



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

ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out	F = 3.0 GHz	1.0			Watt
Pin	Power Input	Vcb = 28 Volts		.14	0.2	Watt
Pg	Power Gain	Po = 1 Watts	7.0	8.5		dB
η_c	Collector Efficiency	As Above		30		%
$VSWR_1$	Load Mismatch Tolerance	F =3 GHz, Po = 1 W			30:1	

BVces	Collector to Emitter Breakdown	Ic = 10 mA	50			Volts
BVcbo	Collector to Base Breakdown	Ic = 1 mA	45			Volts
BVebo	Emitter to Base Breakdown	Ie = 1 mA	3.5			Volts
Icbo	Collector to Base Current	Vcb = 28 Volts			0.5	mA
h_{FE}	Current Gain	Vce = 5 V, Ic = 100 mA	10			
Cob	Output Capacitance	F = 1 MHz, Vcb = 28 V				
θ_{jc}	Thermal Resistance				35	°C/W

Issue August 1996

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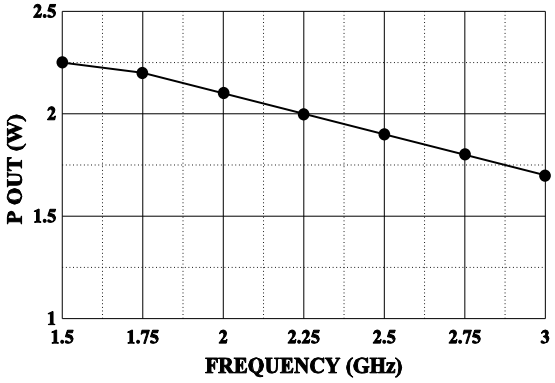
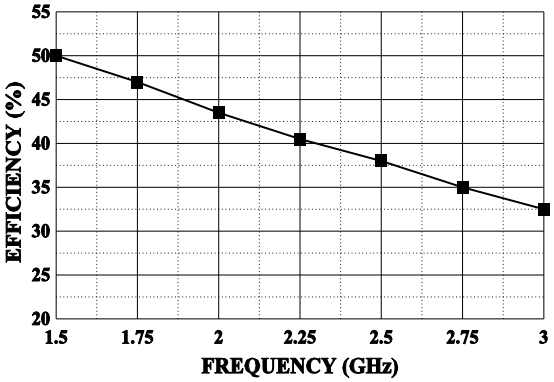
POWER OUTPUT VS FREQUENCY

Vcc=28V, Pin=0.2W



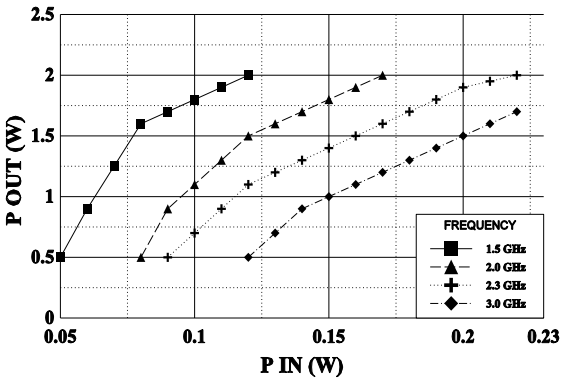
EFFICIENCY VS FREQUENCY

Pin=0.2W, Vcc=28V



Pout VS Pin VS FREQUENCY

Vcc=28V, Pin=0.2W



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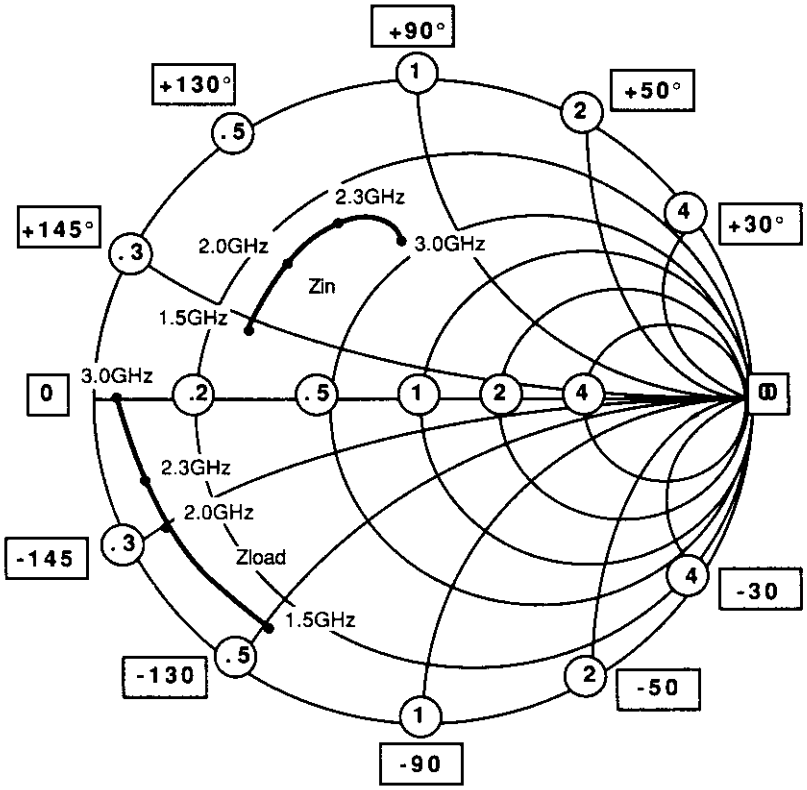
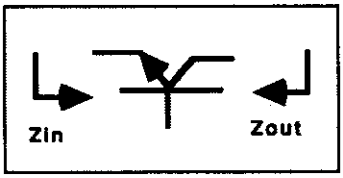
SMITH CHART
3001

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES

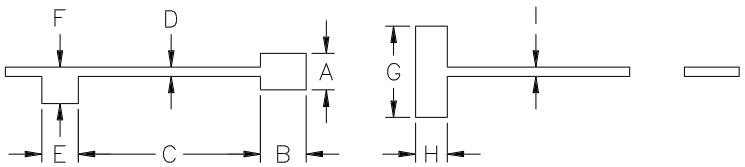


NORMALIZED TO A 50 OHM SYSTEM.



FREQUENCY MHz	Zin R	Zin JX	FREQUENCY MHz	Zload 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

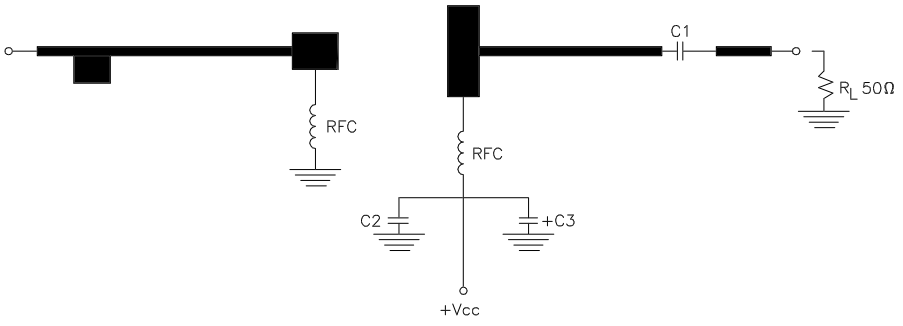
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



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

CHz TECHNOLOGY	CAGE	DWG NO.	REV
	0PJR2	3001	A
		SCALE 1/1	SHEET