GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

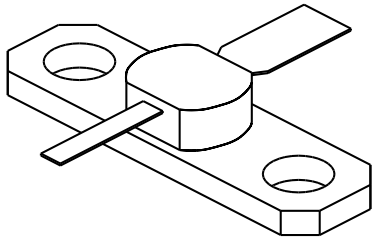
3003

3 Watts - 28 Volts, Class C
Microwave 3000 MHz

GENERAL DESCRIPTION

The 3003 is a COMMON BASE transistor capable of providing 3 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-1, STYLE 1



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C	10 Watts
Maximum Voltage and Current	
BVces Collector to Emitter Voltage	50 Volts
BVebo Emitter to Base Voltage	3.5 Volts
Ic Collector Current	0.6 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	3.0			Watt
Pin	Power Input	Vcb = 28 Volts			0.75	Watt
Pg	Power Gain	Po = 3 Watts	6.0			dB
η_c	Collector Efficiency	As Above		30		%
$VSWR_1$	Load Mismatch Tolerance	F = 3 GHz, Po = 3 W			30:1	

BVces	Collector to Emitter Breakdown	Ic = 30 mA	50			Volts
BVebo	Emitter to Base Breakdown	Ie = 3 mA	3.5			Volts
Icbo	Collector to Base Current	Vcb = 28 Volts			1.5	mA
h_{FE}	Current Gain	Vce = 5 V, Ic = 300 mA	10			
Cob	Output Capacitance	F =1.0 MHz, Vcb = 28 V		7.0		pF
θ_{jc}	Thermal Resistance				17	°C/W

Issue August 1996

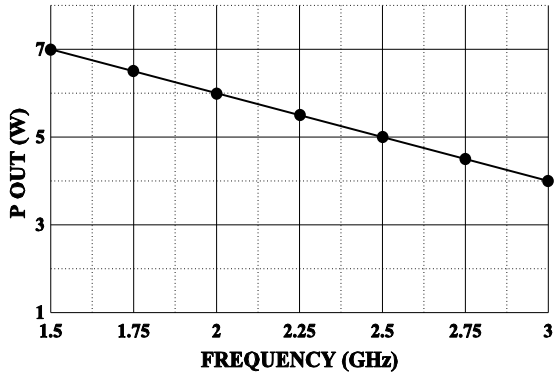
GHz Technology Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031 Fax 408 / 986-8120

GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

3003

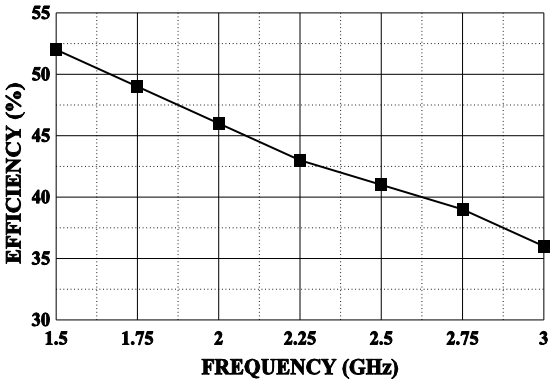
SATURATED POWER OUTPUT VS FREQUENCY

Vcc=28V, Pin=.75W



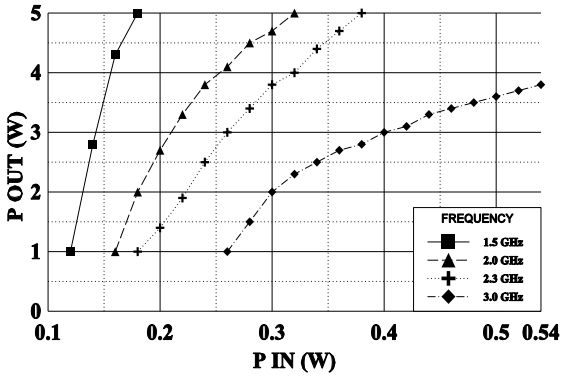
EFFICIENCY VS FREQUENCY

Pout=3W, Vcc=28V



Pout VS Pin VS FREQUENCY

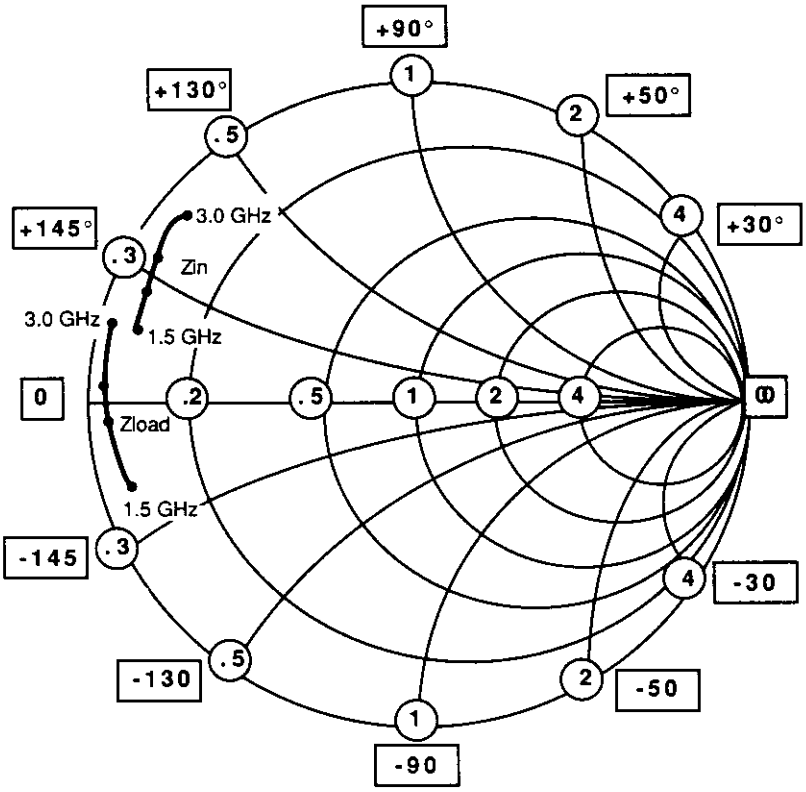
Vcc=28V, Pin=.75W



August 1996

SMITH CHART
3003

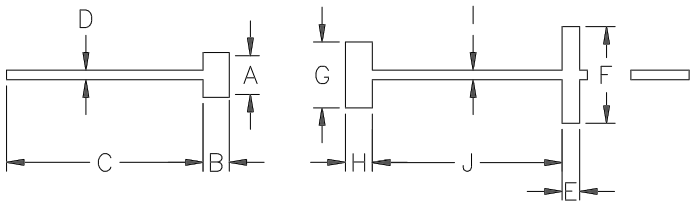
NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES



NORMALIZED TO A 50 OHM SYSTEM.

FREQUENCY MHz	Zin R	Zin JX	FREQUENCY MHz	Zload R	Zload JX
1500	3.8	8.0	1500	3.7	10
2000	3.6	13	2000	3.3	3.0
2300	3.4	17	2300	3.2	-3.0
3000	3.4	20	3000	2.7	-9.0

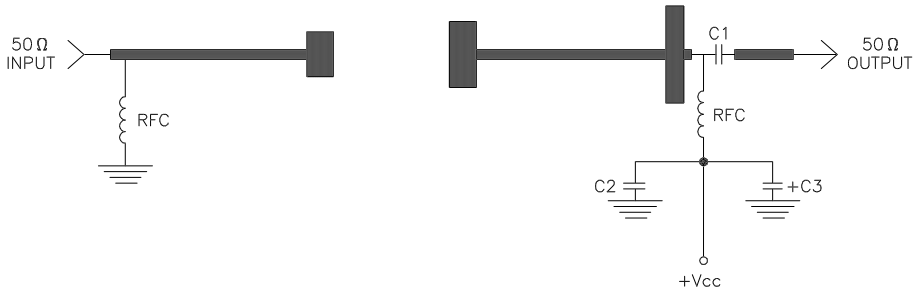
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



DIM	INCHES
A	.230
B	.135
C	.900
D	.050
E	.090
F	.160
G	.320
H	.140
I	.050
J	.160

3003 TEST AMPLIFIER

f = 3000 MHz



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

	CAGE	DWG NO.	REV
CHz TECHNOLOGY	0PJR2	3003	A
		SCALE 1/1	SHEET