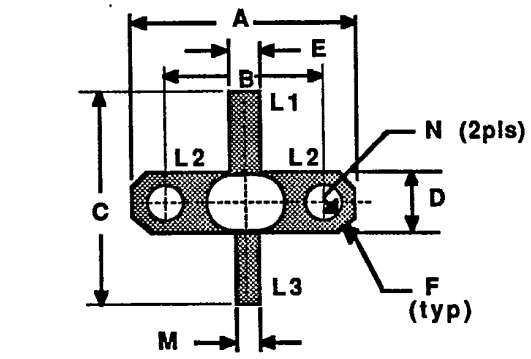
3001
1 WATT - 28 VOLTS
3000 MHz
MICROWAVE CW BIPOLAR

GENERAL DESCRIPTION

The 3001 is a common base transistor capable of providing 1 watt of CW RF output power at 3000 MHz. This hermetically sealed transistor is specifically designed for telemetry and telecommunications applications. It uses gold metalization and diffused ballasting to provide high reliability and supreme ruggedness.

ABSOLUTE MAXIMUM RATINGS

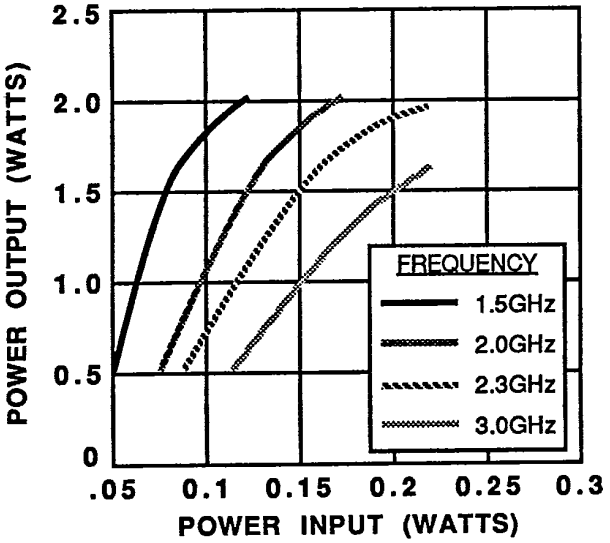
Maximum Power Dissipation @ 25°C Case Temperature		5 W
Maximum Voltage and Current		
BVces	Collector to Emitter Voltage	50 V
BVebo	Emitter to Base Voltage	3.5 V
Ic	Collector Current	0.12A
Maximum Temperatures		
Storage Temperature		-65 to +200 °C
Operating JunctionTemperature		+200 °C



L1 : B
L2 : E
L3 : C

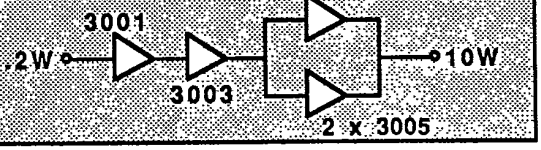
DIM	Millimeter	TOL	Inches	TOL
A	20.32	.13	.800	.005
B	14.27	.13	.562	.005
C	18.03	MIN	.710	MIN
D	5.84	.13	.230	.005
E	3.05	.13	.120	.005
F	45°	5°	45°	5°
G	5.84	.13	.230	.005
H	4.57	REF	.180	REF
I	0.13	.02	.005	.001
J	3.81	.13	.150	.005
K	1.52	.13	.060	.005
M	1.27	.13	.050	.005
N	3.30	.13	.130	.005

POWER OUTPUT VS POWER INPUT VS FREQUENCY (TYPICAL)



TYPICAL AMPLIFIER LINE UP

Vcc= 28 Volts
Frequency Range= 3000 MHz



490 Race Street, San Jose, CA 95126 Phone (408) 294-4200, TWX (910) 338-2172
Ewenny Rd., Bridgend, Mid Glamorgan, CF31 3LQ, United Kingdom, Phone (0656) 68021

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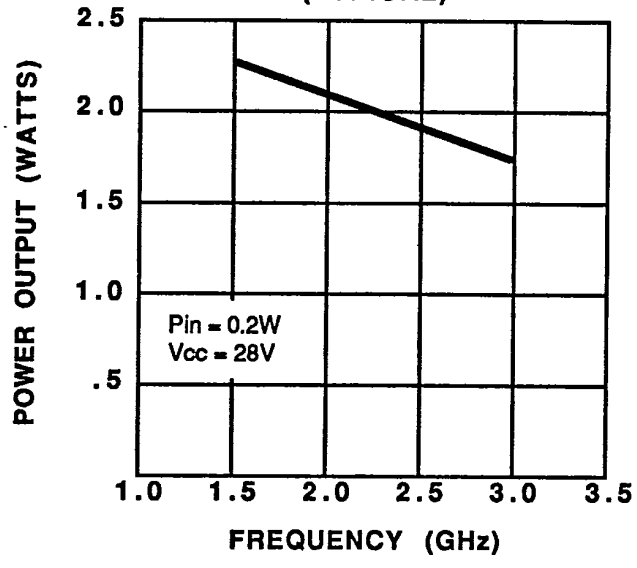
ELECTRICAL CHARACTERISTICS[1]

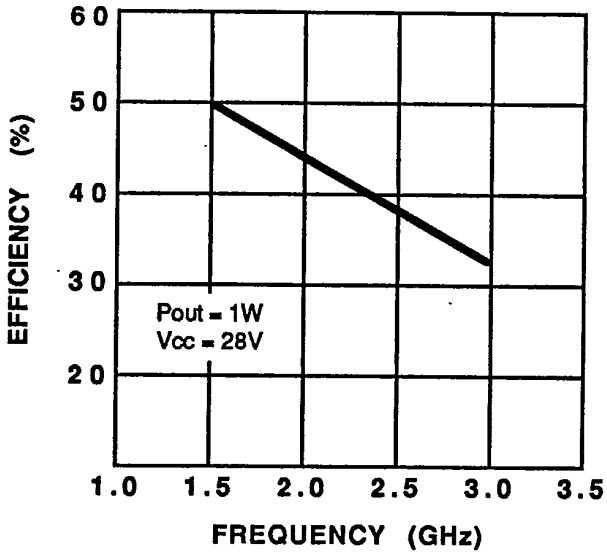
SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Pout	Power Output	f= 3.0 GHz Vcc= 28V	1.0			Watts
Pin	Power Input				0.2	Watts
Pg	Power Gain		7.0	8.5		dB
η_c	Collector Efficiency		30			%
VSWR	Load Mismatch Tolerance				∞:1	
BVebo	Breakdown Voltage (Emitter to Base)	Ic= 0A, Ie= 1.0mA	3.5			Volts
BVces	Breakdown Voltage (Collector to Emitter)	Vbe= 0A, Ic= 10mA	50			Volts
BVcbo	Breakdown Voltage (Collector - Base)	Ie= 0A, Ic= 1mA	45			Volts
Icbo	Collector Leakage Current	Ie= 0A, Vcb= 28V			0.5	mA
h_{FE}	DC-Current Gain	Vce= 5V, Ic= 100mA	10			
θ_{jc}	Thermal Resistance	Tc= 25°C			35	°C/W

Note 1: Tc = +25°C unless otherwise specified

POWER OUTPUT VS FREQUENCY (TYPICAL)



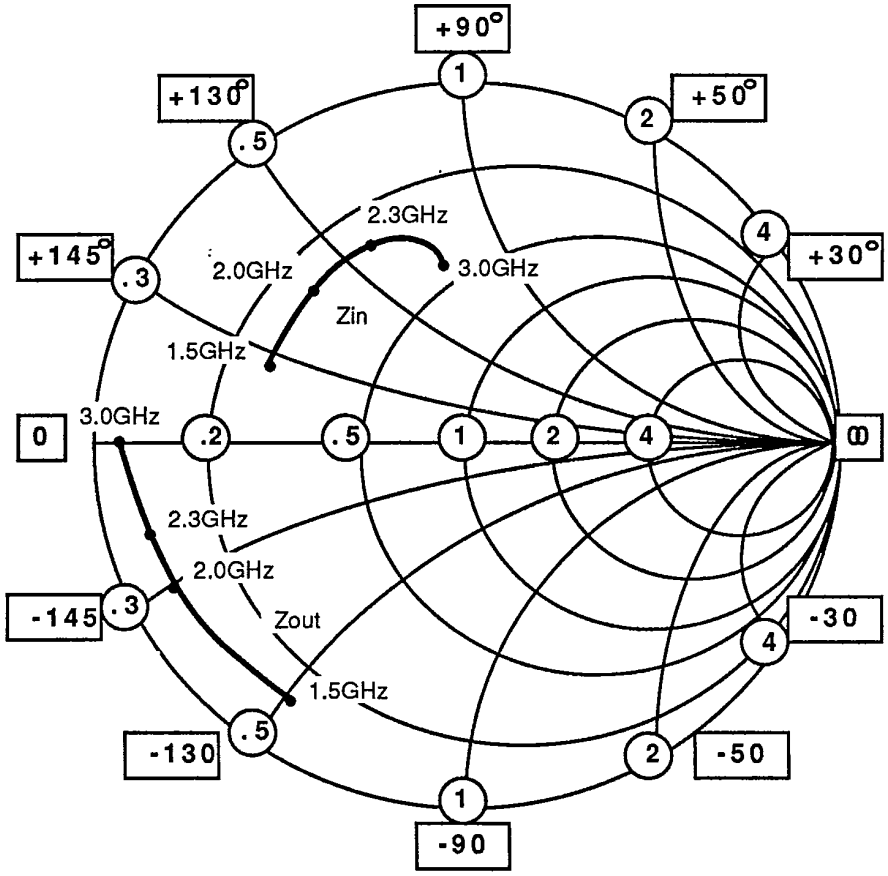
EFFICIENCY VS FREQUENCY (TYPICAL)



SPECIFICATIONS MAY BE SUBJECT TO CHANGE WITHOUT NOTICE

SMITH CHART 3001

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES



NORMALIZED TO A 50 OHM SYSTEM.

FREQUENCY MHz	Zsource R	Zsource 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

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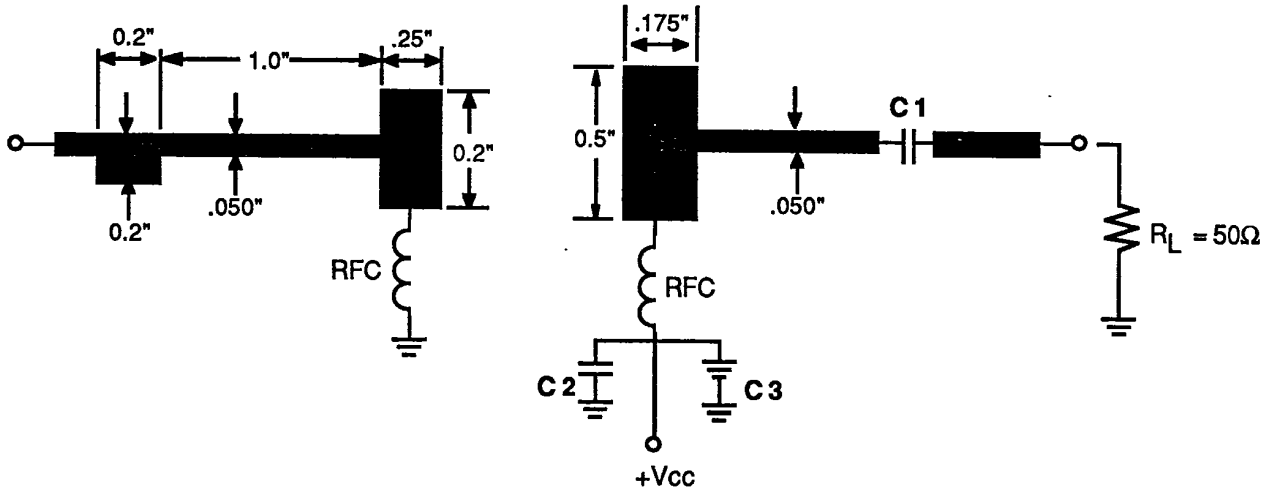
3001 TEST AMPLIFIER

f= 3000 MHz



[redacted] --- MICROSTRIP ON 0.020 TEFLON FIBERGLASS, Er= 2.55
C1, C2 --- ATC 'A' 47 pf
C3 --- 10µfd @ 35 Volts

[redacted]

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