

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

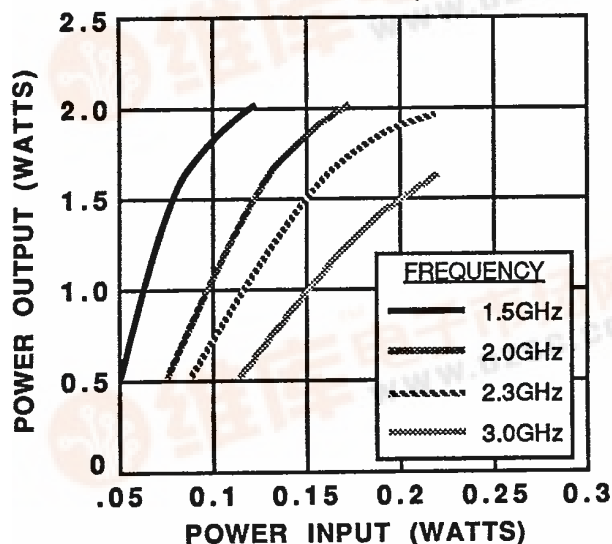
Ic Collector Current 0.12 A

Maximum Temperatures

Storage Temperature -65 to +200 °C

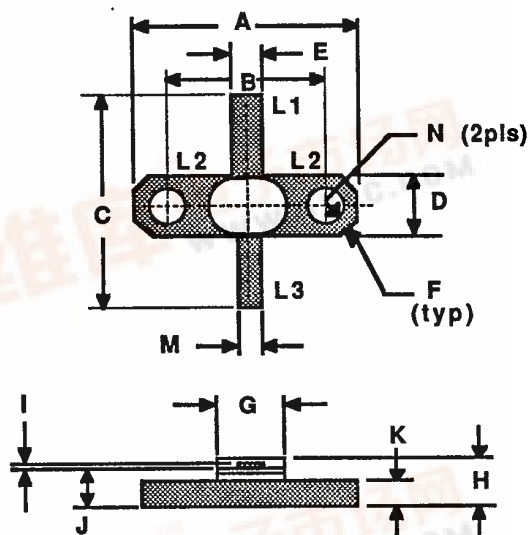
Operating Junction Temperature +200 °C

POWER OUTPUT VS POWER INPUT VS FREQUENCY (TYPICAL)



3001
1 WATT - 28 VOLTS
3000 MHz

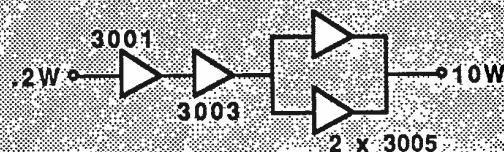
MICROWAVE CW BIPOLAR



DIM	Millimeter	TOL	Inches	TOL
L1 : B				
L2 : E				
L3 : C				
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

TYPICAL AMPLIFIER LINE UP

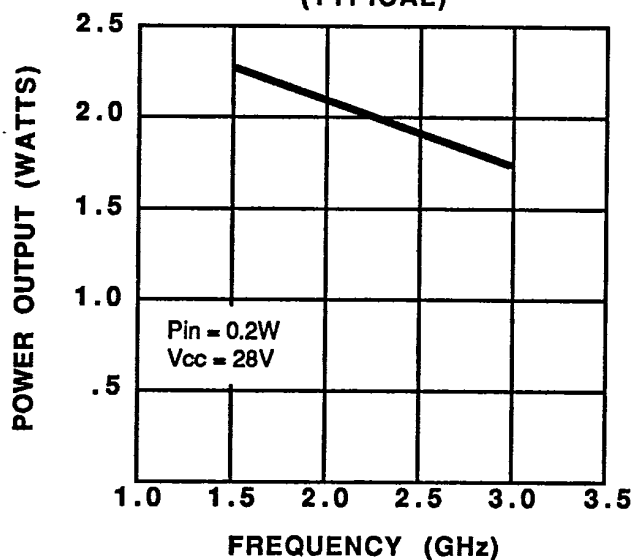
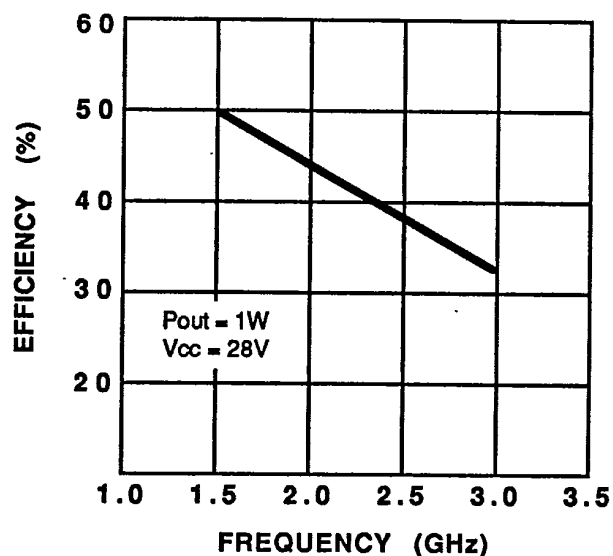
Vcc= 28 Volts
Frequency Range= 3000 MHz



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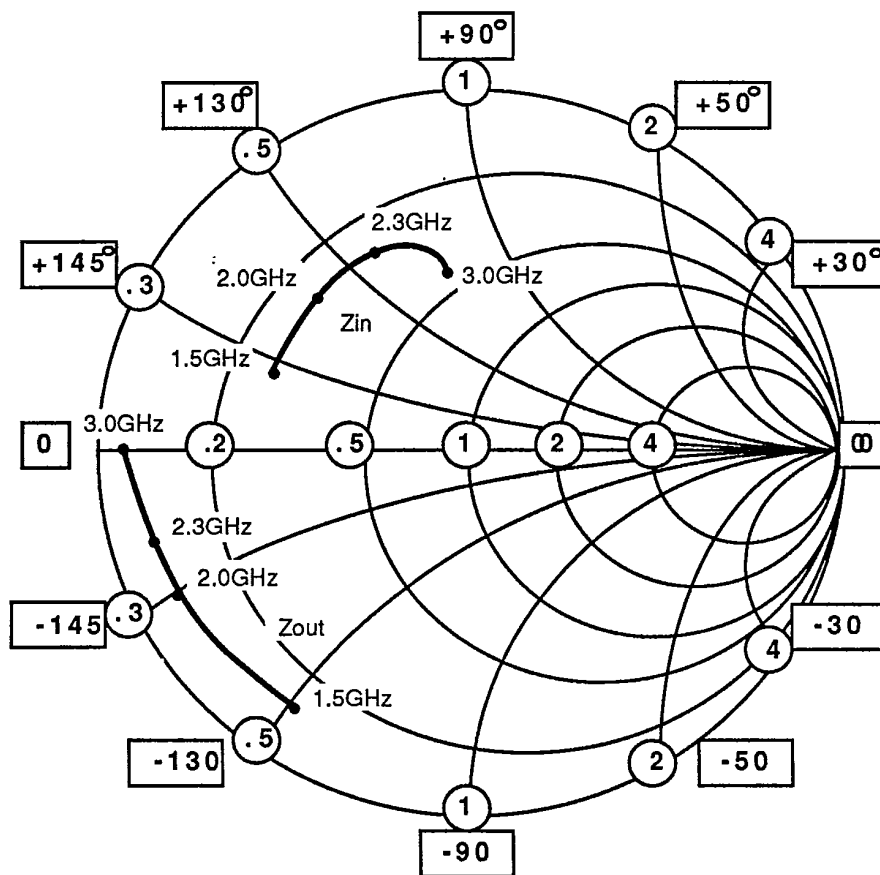
ELECTRICAL CHARACTERISTICS¹

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
P _{out}	Power Output	f = 3.0 GHz V _{cc} = 28V	1.0			Watts
P _{in}	Power Input				0.2	Watts
P _g	Power Gain		7.0	8.5		dB
η_c	Collector Efficiency		30			%
VSWR	Load Mismatch Tolerance				$\infty:1$	
BV _{ebo}	Breakdown Voltage (Emitter to Base)	I _c = 0A, I _e = 1.0mA	3.5			Volts
BV _{ces}	Breakdown Voltage (Collector to Emitter)	V _{be} = 0A, I _c = 10mA	50			Volts
BV _{cbo}	Breakdown Voltage (Collector - Base)	I _e = 0A, I _c = 1mA	45			Volts
I _{cbo}	Collector Leakage Current	I _e = 0A, V _{cb} = 28V			0.5	mA
h_{FE}	DC-Current Gain	V _{ce} = 5V, I _c = 100mA	10			
θ_{jc}	Thermal Resistance	T _c = 25°C			35	°C/W

Note 1: T_c = +25°C unless otherwise specified**POWER OUTPUT VS FREQUENCY
(TYPICAL)****EFFICIENCY VS FREQUENCY
(TYPICAL)**

SMITH CHART 3001

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES



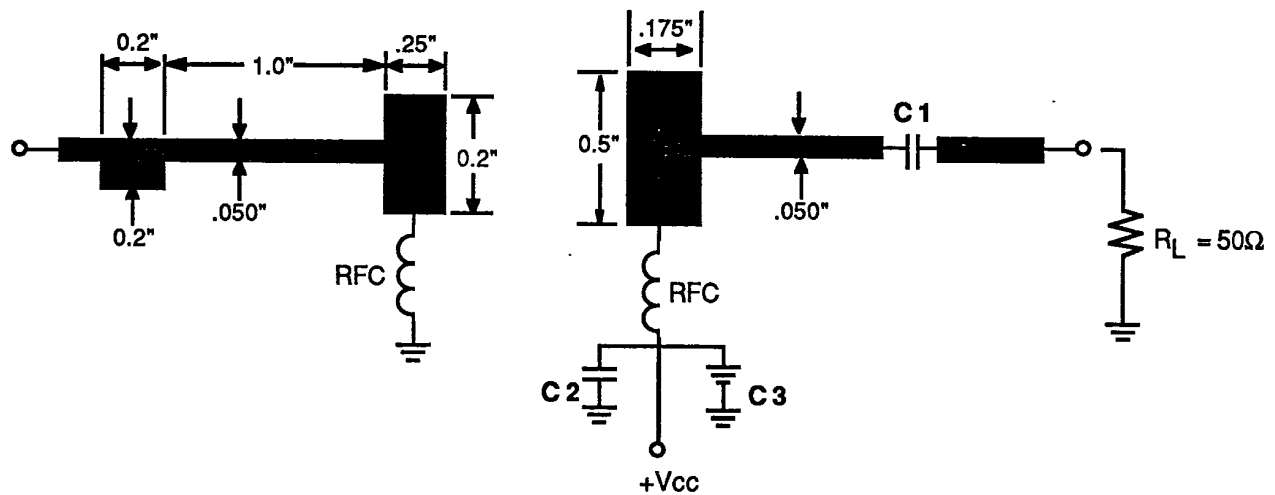
NORMALIZED TO A 50 OHM SYSTEM.

FREQUENCY MHz	Z_{source} R	JX	FREQUENCY MHz	Z_{load} R	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



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