

**GENERAL DESCRIPTION**

The 3005 is a common base transistor capable of providing 5 watts of CW RF output power at 3000 MHz. This hermetically sealed transistor is specifically designed for telemetry and telecommunications applications. It utilizes gold metallization and diffused ballasting to provide high reliability and supreme ruggedness.

**3005**  
**5 WATT - 28 VOLTS**  
**3000 MHz**

**MICROWAVE CW BIPOLAR**

**ABSOLUTE MAXIMUM RATINGS**

Maximum Power Dissipation @ 25°C Case Temperature      25 W

Maximum Voltage and Current

BVces Collector to Emitter Voltage      50 V

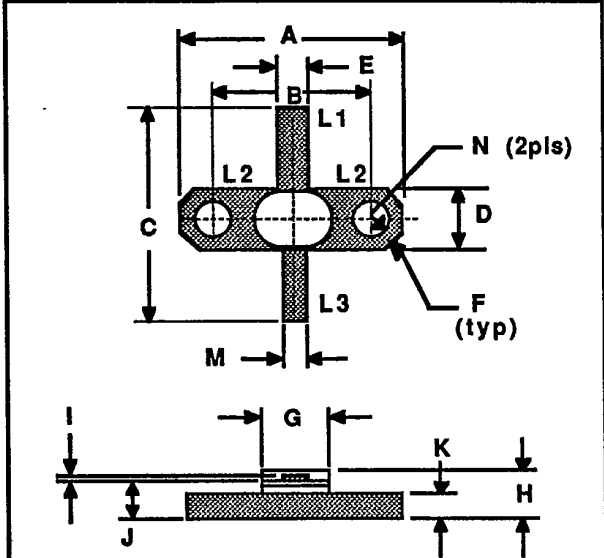
BVebo Emitter to Base Voltage      3.5 V

Ic Collector Current      2.5 A

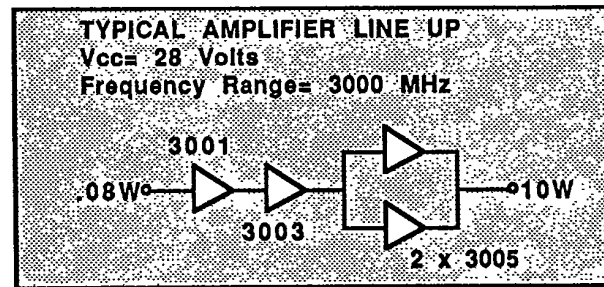
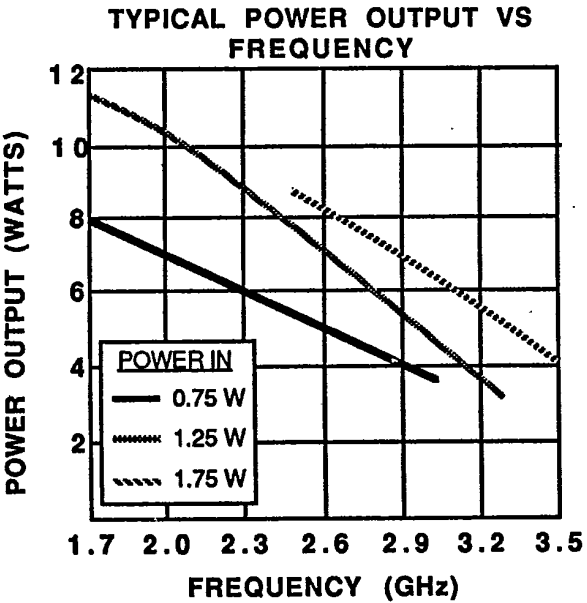
Maximum Temperatures

Storage Temperature      -65 to +200 °C

Operating Junction Temperature      +200 °C



L1 : B	DIM	Millimeter	TOL	Inches	TOL
L2 : E	A	20.32	.13	.800	.005
L3 : C	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



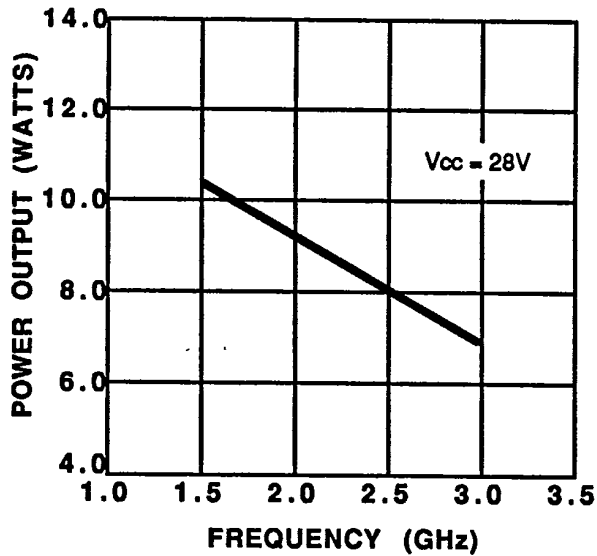
**3005-2**

**ELECTRICAL CHARACTERISTICS<sup>1</sup>**

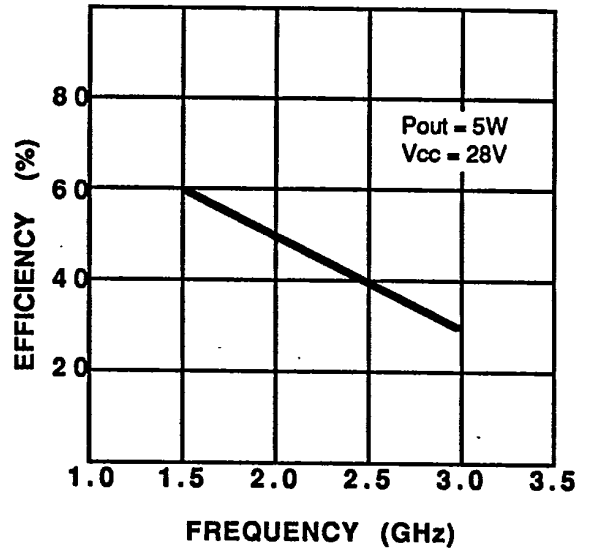
SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
P <sub>out</sub>	Power Output	f = 3000 MHz V <sub>cc</sub> = 28V	5.0			Watts
P <sub>in</sub>	Power Input				1.5	Watts
P <sub>g</sub>	Power Gain		5.2			dB
η <sub>c</sub>	Collector Efficiency			30		%
VSWR	Load Mismatch Tolerance				20:1	
h <sub>FE</sub>	DC-Current Gain		20		120	
θ <sub>jc</sub>	Thermal Resistance				7.0	°C/W
BV <sub>ebo</sub>	Breakdown Voltage (Emitter to Base)	I <sub>c</sub> = 0A, I <sub>e</sub> = 10mA	3.5			Volts
BV <sub>ces</sub>	Breakdown Voltage (Collector to Emitter)	V <sub>be</sub> = 0A, I <sub>c</sub> = 10mA	50			Volts

Note 1: T<sub>c</sub> = +25°C unless otherwise specified

**SATURATED POWER OUTPUT VS FREQUENCY (TYPICAL)**



**EFFICIENCY VS FREQUENCY (TYPICAL)**

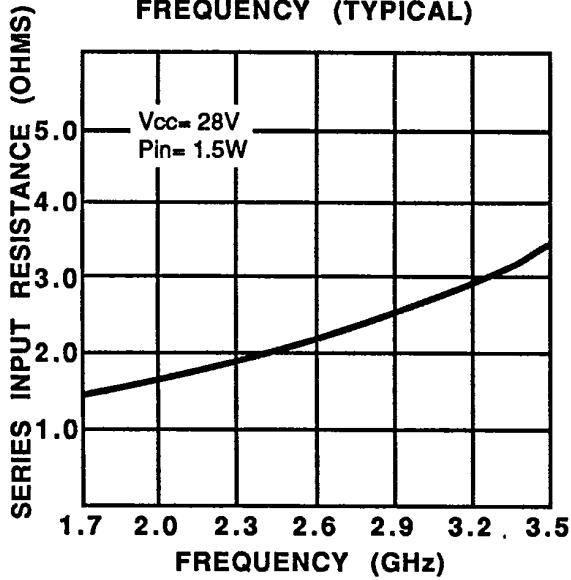


SPECIFICATIONS MAY BE SUBJECT TO CHANGE WITHOUT NOTICE

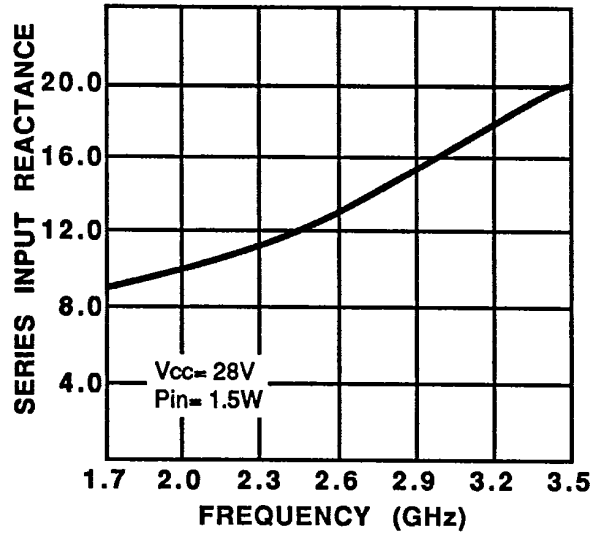
462

3005-3

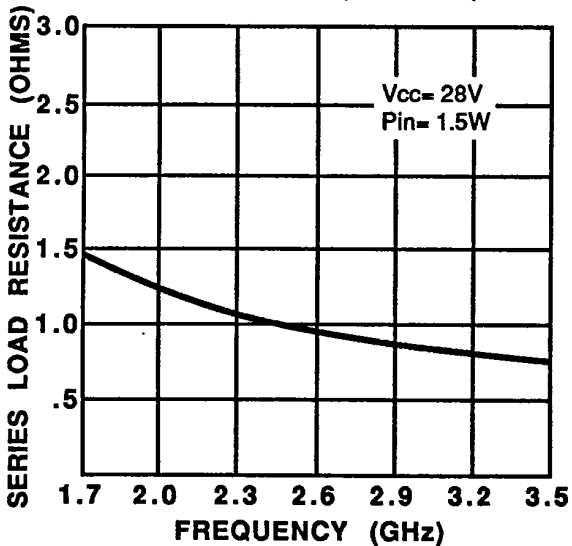
SERIES INPUT IMPEDANCE VS FREQUENCY (TYPICAL)



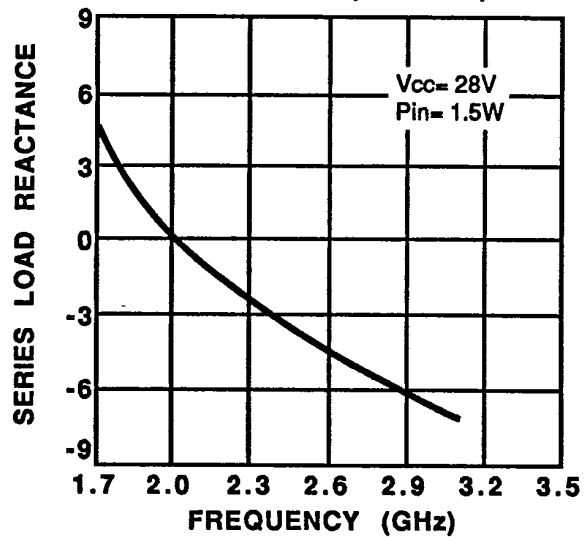
SERIES INPUT REACTANCE VS FREQUENCY (TYPICAL)



SERIES LOAD IMPEDANCE VS FREQUENCY (TYPICAL)



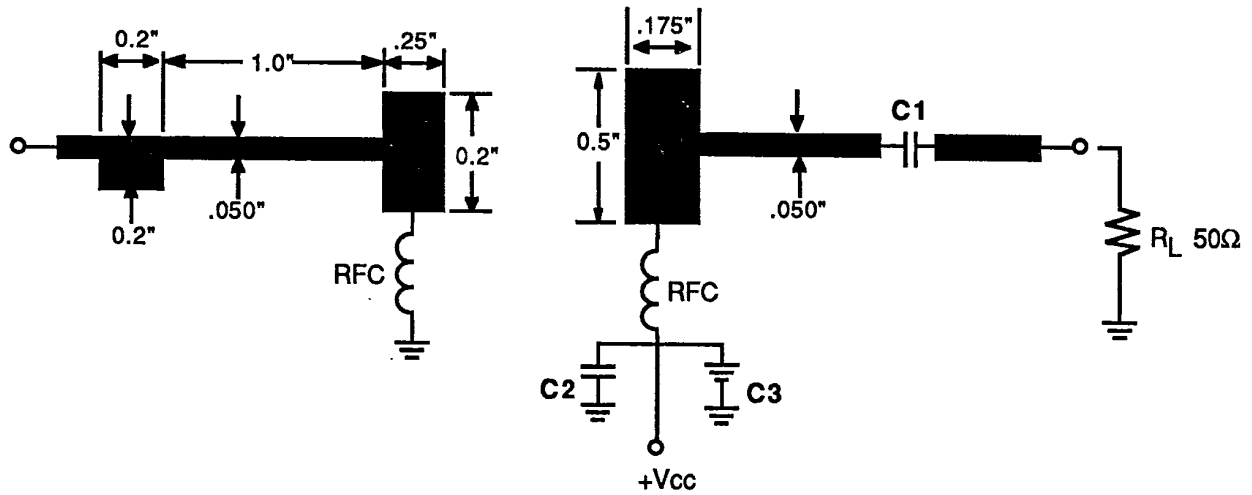
SERIES LOAD REACTANCE VS FREQUENCY (TYPICAL)



3005-4

### 3005 TEST AMPLIFIER

f = 3000 MHz



--- MICROSTRIP ON 0.020 TEFLON FIBERGLASS,  $\epsilon_r = 2.55$   
 C1, C2 -- ATC 'A' 47 pf  
 C3 --- 10 $\mu$ fd @ 35 Volts

4/6/61