

23A005

0.5 Watts, 20 Volts, Class A
Linear to 2300 MHz

GENERAL DESCRIPTION

The 23A005 is a COMMON EMITTER transistor capable of providing 0.5 Watt of Class A, RF output power to 2300 MHz. This transistor is specifically designed for general Class A amplifier applications. It utilizes gold metalization and diffused ballasting to provide high reliability and supreme ruggedness. The transistor uses a fully hermetic High Temperature Solder Sealed package.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C 3.0 Watts

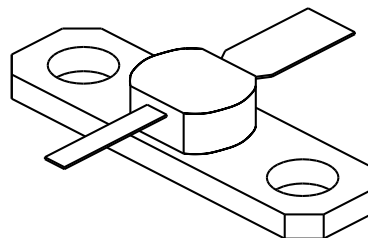
Maximum Voltage and Current

BVces	Collector to Emitter Voltage	50 Volts
BVebo	Emitter to Base Voltage	3.5 Volts
Ic	Collector Current	400 mA

Maximum Temperatures

Storage Temperature	- 65 to + 200°C
Operating Junction Temperature	+ 200°C

CASE OUTLINE 55BT, STYLE 2



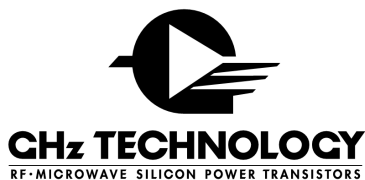
ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out	F = 2.3 GHz	.5	0.7		Watts
Pin	Power Input	Ic = 120 mA			.07	Watts
Pg	Power Gain	Vcc = 20 Volts	8.5	9.5		dB
Ft	Transition Frequency	Vce = 20V, Ic = 120 mA	4.0	4.3		GHz
VSWR	Load Mismatch Tolerance				30:1	

BVebo	Emitter to Base Breakdown	Ie = 1 mA	3.5			Volts
BVces	Collector to Emitter Breakdown	Ic = 10 mA	50			Volts
BVceo	Collector to Emitter Breakdown	Ic = 10 mA	22			Volts
h_{FE}	DC Current Gain	Vce = 5 V, Ic = 100 mA	20			
Cob	Capacitance	Vcb = 28V, f = 1 MHz		2.4	3.0	pF
θjc	Thermal Resistance			32	35	°C/W

Issue August 1996

GHz TECHNOLOGY INC. RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE. GHz RECOMMENDS THAT BEFORE THE PRODUCT(S) DESCRIBED HEREIN ARE WRITTEN INTO SPECIFICATIONS, OR USED IN CRITICAL APPLICATIONS, THAT THE PERFORMANCE CHARACTERISTICS BE VERIFIED BY CONTACTING THE FACTORY.



23A005-1 (20V, 120mA)

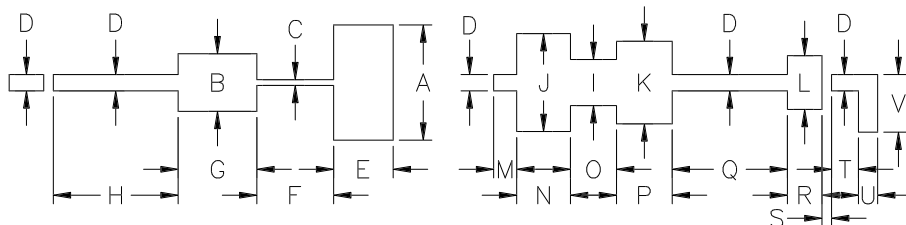
MMICAD for Windows Thu Jul 07 13:48:04 1994
CIRCUIT: MES

FREQ	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
Mhz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
0.100	0.47454	-95.2554	18.0671	141.547	0.01787	50.7706	0.82112	-24.5159
0.200	0.63181	-130.521	13.0172	118.293	0.02571	36.5129	0.67334	-37.8388
0.300	0.69167	-147.990	9.72668	100.914	0.02910	28.3304	0.59245	-45.3258
0.400	0.72051	-158.884	7.65963	89.8204	0.03072	24.4892	0.55219	-50.9748
0.500	0.73228	-166.479	6.26404	82.1308	0.03202	22.1256	0.53485	-56.4636
0.600	0.73894	-172.252	5.27796	74.4571	0.03296	20.9634	0.52900	-61.9843
0.700	0.74266	-177.035	4.54919	66.2444	0.03395	19.7881	0.52896	-67.7474
0.800	0.74554	178.854	3.99189	59.6606	0.03491	19.4614	0.53401	-73.4258
0.900	0.74622	174.959	3.55077	53.4625	0.03583	19.0716	0.54160	-79.0932
1.000	0.74692	171.317	3.20045	47.6838	0.03703	19.2090	0.55295	-84.6732
1.100	0.74464	167.896	2.90850	42.0884	0.03827	19.0947	0.56634	-90.1720
1.200	0.74160	164.635	2.66116	36.6646	0.03982	19.0327	0.58110	-95.5511
1.300	0.73992	161.495	2.45228	31.3945	0.04129	18.9103	0.59610	-100.600
1.400	0.73720	158.338	2.27267	26.3059	0.04288	18.6008	0.61238	-105.376
1.500	0.73435	155.149	2.12279	21.3030	0.04478	18.6652	0.62914	-109.844
1.600	0.72845	152.200	1.99847	16.3897	0.04710	18.3814	0.64861	-114.386
1.700	0.73095	149.080	1.88858	10.9611	0.04973	17.1534	0.66492	-119.196
1.800	0.72985	145.038	1.77024	5.55489	0.05163	15.6556	0.67175	-123.798
1.900	0.71838	141.377	1.66141	0.77322	0.05376	14.6299	0.67796	-127.814
2.000	0.71044	138.054	1.57323	-3.89599	0.05605	13.7191	0.68570	-131.792
2.100	0.70403	134.493	1.49428	-8.67506	0.05874	12.4302	0.69513	-135.716
2.200	0.69438	130.751	1.42241	-13.5361	0.06150	10.7884	0.70641	-139.809
2.300	0.68657	127.164	1.35551	-18.2269	0.06417	9.02043	0.71730	-144.002
2.400	0.67829	123.196	1.29522	-22.8819	0.06675	7.16376	0.72636	-147.897
2.500	0.66881	119.053	1.24320	-27.5560	0.06984	5.61929	0.73772	-151.705
2.600	0.65802	115.022	1.19275	-32.3453	0.07267	3.69521	0.74907	-155.491
2.700	0.64868	110.753	1.14423	-37.1372	0.07600	1.56373	0.75577	-159.222
2.800	0.64011	106.195	1.09834	-41.8004	0.07920	-0.51118	0.76098	-162.542
2.900	0.63217	101.321	1.05472	-46.5021	0.08286	-2.93984	0.76375	-165.658
3.000	0.62255	96.1466	1.01424	-51.1387	0.08625	-5.38132	0.76407	-168.562

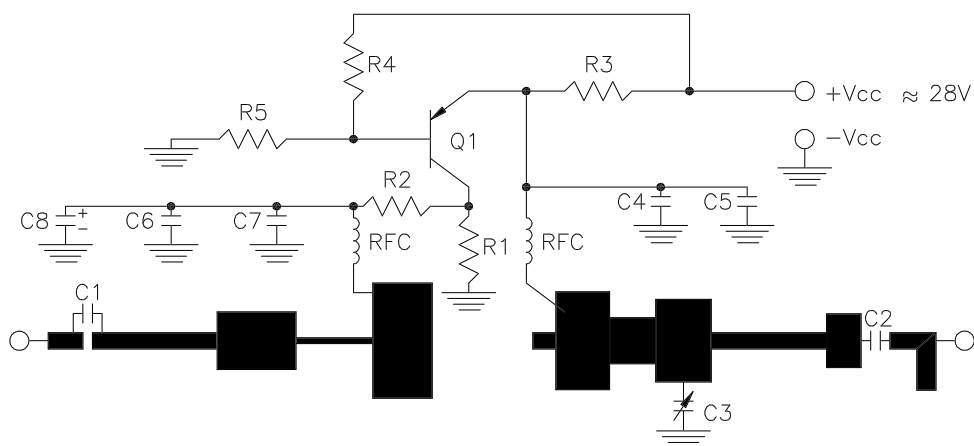
REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
------	-----	-------------	------	----------

DIM	INCHES
A	.600
B	.300
C	.030
D	.085
E	.310
F	.400
G	.410
H	.650
I	.240
J	.510
K	.430
L	.280
M	.120
N	.280
O	.240
P	.290
Q	.600
R	.180
S	.050
T	.140
U	.100
V	.300



23A005 TEST CIRCUIT



■ MICROSTRIP $t=0.028''$ DIELECTRIC $E_r=2.55$

C1, C2 = 82Pf CHIP

C3 = 0.3-3.5Pf JOHANSON

C4, C7 = 82Pf CHIP

C5, C6 = 1ufd 50V

C8 = 10ufd 50V

Q1 = 2N2907

R1 = 6800 1/4W

R2 = 390 1/4W

R3 = 680 10W

R4 = 10K 1/4W

R5 = 22K 1/4W



CHz TECHNOLOGY

CAGE
OPJR2

DWG NO.

23A005

REV

—

SCALE

1/1

SHEET