GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

1617AB35

35 Watts, 25 Volts, Class AB
Satcom 1600 - 1700 MHz

GENERAL DESCRIPTION

The 1617AB35 is a COMMON EMITTER transistor capable of providing 35 Watts of Class AB, RF output power over the band 1600 - 1700 MHz. This transistor is specifically designed for **SATCOM COMMUNICATIONS** amplifier applications. It includes Input prematching and utilizes Gold metalization and EMITTER BALLASTING to provide high reliability and supreme ruggedness. .

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25ºC 120 Watts

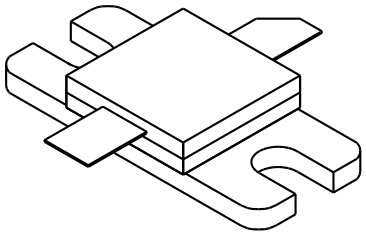
Maximum Voltage and Current

BVces	Collector to Emitter Voltage	60 Volts
LVceo	Collector to Emitter Voltage	27 Volts
BVebo	Emitter to Base Voltage	3.5 Volts
Ic	Collector Current	14.0 Amps

Maximum Temperatures

Storage Temperature	- 65 to + 150ºC
Operating Junction Temperature	+ 230ºC

CASE OUTLINE
55AR, STYLE 2
COMMON EMITTER



A49

ELECTRICAL CHARACTERISTICS @ 25 ^{O}C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out	F =1700 MHz	35			Watt
Pin	Power Input	Vce = 25 Volts			4.5	Watt
Pg	Power Gain	Icq = 250 mAmps	9.0	10.0		dB
η_c	Collector Efficiency	As Above		50		%
VSWR	Load Mismatch Tolerance	As Above			3:1	
IMD$_3$	3rd Order IMD	As Above			-30	dBc

BVces	Collector to Emitter Breakdown	Ic = 50 mA	60			Volts
LVceo	Collector to Emitter Breakdown	Ic = 50 mA	27			Volts
BVebo	Emitter to Base Breakdown	Ie = 10 mA	3.5			Volts
Ices	Collector Leakage Current	Vce = 27 Volts			10	mA
h_{FE}	DC - Current Gain	Vce = 5 V, Ic = 0.7 A	20		100	
Cob	Output Capacitance	F =1 MHz, Vcb = 28 V		36		pF
θjc	Thermal Resistance	Tc = 25ºC			1.6	ºC/W

Issue January 1996

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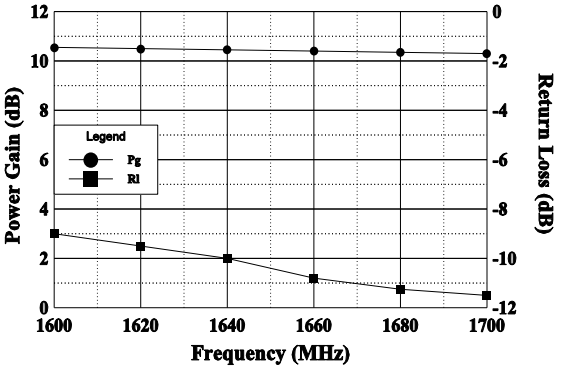
RF·MICROWAVE SILICON POWER TRANSISTORS

Typical Performance

1617AB35

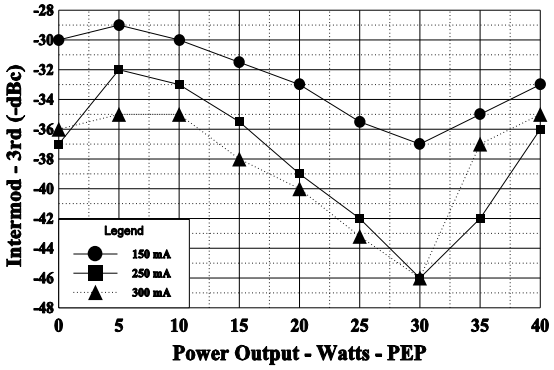
BROADBAND POWER GAIN & RETURN LOSS

Pout = 35 W, Vcc = 25 V, Icq = 250 mA



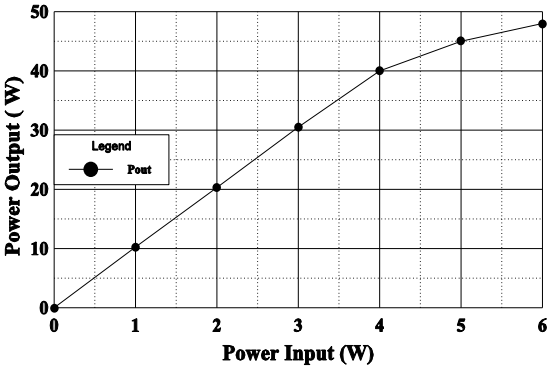
THIRD ORDER IMD vs POWER OUTPUT

Vcc = 25 V, f = 1700 MHz, Two Tones



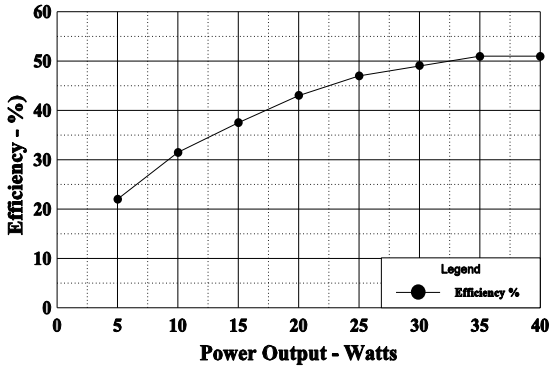
Power Output vs Power Input - PEP

Vcc = 25 V, f = 1700 MHz, Icq = 250mA



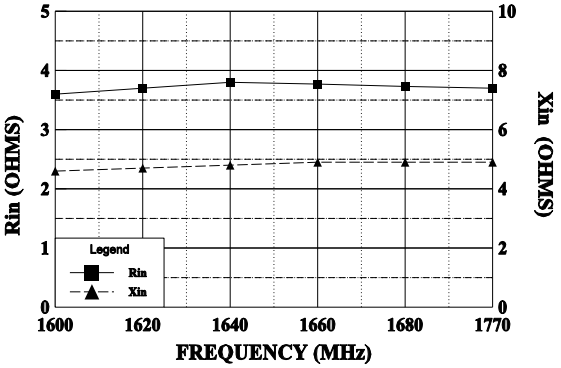
Collector Efficiency vs Power Out - PEP

Vcc = 25 V, f = 1700 MHz, Icq = 250mA



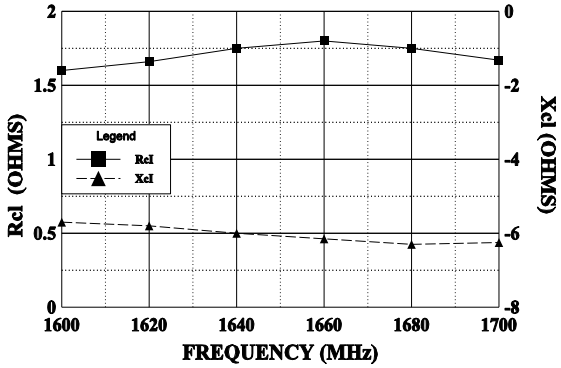
INPUT IMPEDANCE

Vcc = 25 V, Pout = 35 W



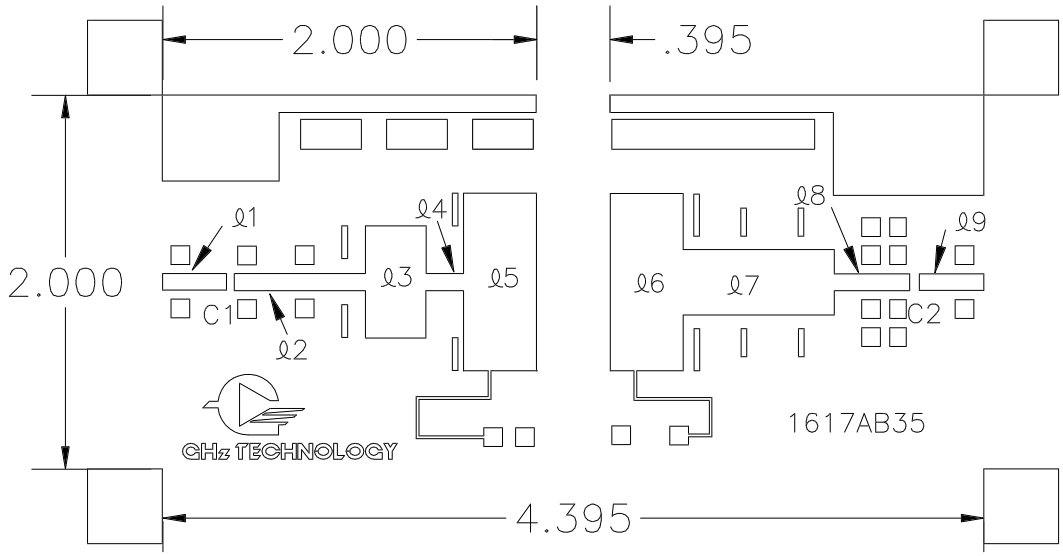
LOAD IMPEDANCE

Vcc = 25 V, Pout= 35 W



August 1996

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



C1,C2=100pf ATC

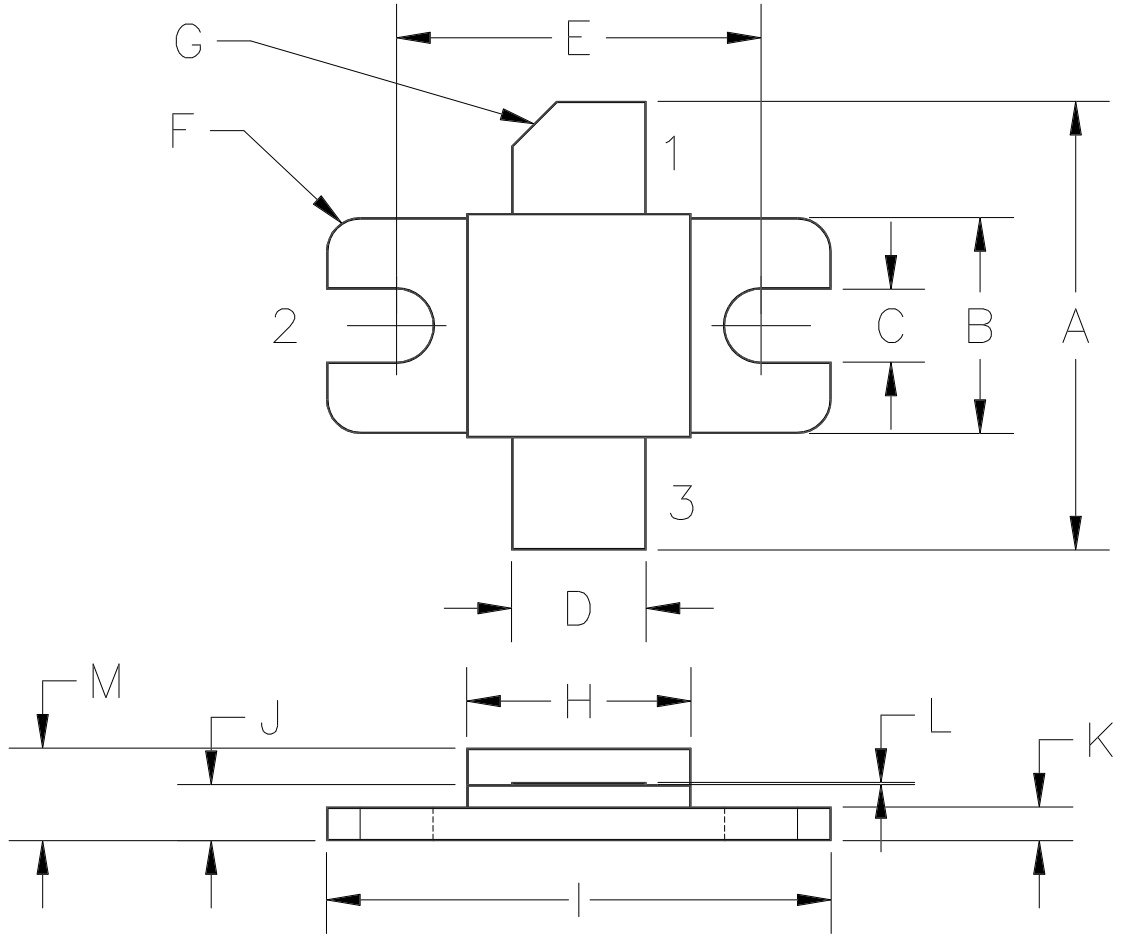
1/32" PTFE glass Er=2.5

ℓ NO.	X DIM	Y DIM
1	.340	.089
2	.700	.089
3	.325	.600
4	.200	.089
5	.390	.950
6	.390	.950
7	.810	.350
8	.405	.089
9	.346	.089

DATE: 6 FEB 96

GHz TECHNOLOGY	CAGE 0PJR2	DWG NO. 1617AB35	REV –
		SCALE 1/1	SHEET

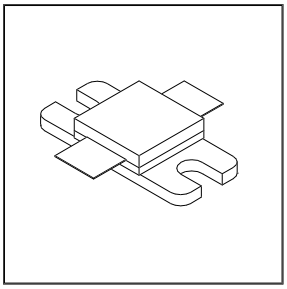
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



DIM	MILLIMETER	TOL	INCHES	TOL
A	20.32	.76	.800	.050
B	9.78	.13	.385	.005
C	3.30	.13	.130	.005
D	6.10	.13	.240	.005
E	16.51	.13	.650	.005
F	1.52 R	.13	.060 R	.005
G	45°	5°	45°	5°
H	10.16 SQ	.13	.400 SQ	.005
I	22.86	.13	.900	.005
J	2.54	.13	.100	.005
K	1.52	.13	.060	.005
L	.102	.02	.004	.001
M	4.19	.13	.165	.005

STYLE 1:
PIN 1 = COLLECTOR
2 = BASE
3 = EMITTER

STYLE 2:
PIN 1 = COLLECTOR
2 = EMITTER
3 = BASE



GHz TECHNOLOGY	CAGE 0PJR2	DWG NO. 55AR	REV A
		SCALE 3/1	SHEET