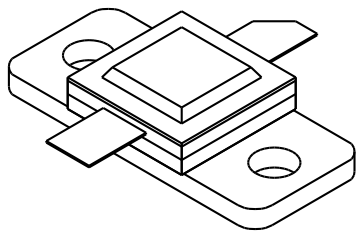


1617AM10

10 Watts, 18 Volts, Class A
Linear 1500 - 1800 MHz

<p>GENERAL DESCRIPTION</p> <p>The 1617AM10 is a COMMON EMITTER, HIGH GAIN transistor capable of providing 10 Watts, P_{1dB}, Class A, RF output power in the band 1500 - 1800 MHz. The transistor includes double input and output prematching for full broadband capability. Gold metalization and diffused ballasting are used to provide high reliability and supreme ruggedness. The transistor uses a fully hermetic solder sealed package.</p>	<p>CASE OUTLINE 55AT, STYLE 2</p>  <p>SEE NOTE BELOW</p>
<p>ABSOLUTE MAXIMUM RATINGS</p> <p>Maximum Power Dissipation @ 25°C 50 Watts</p> <p>Maximum Voltage and Current</p> <p>BVcbo Collector to Base Voltage 45 Volts BVceo Collector to Emitter Voltage 20 Volts BVebo Emitter to Base Voltage 3.5 Volts Ic Collector Current 4.0 Amps</p> <p>Maximum Temperatures</p> <p>Storage Temperature - 65 to + 200°C Operating Junction Temperature + 200°C</p>	

ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout - 1dB	Power Out - 1 dB	F = 1700 MHz	10			Watts
Pin	Power Input	Vcc = 18 Volts			1.0	Watts
Pg - 1dB	Power Gain	Ic = 2.0 Amps	10			dB
VSWR 1	Load Mismatch Tolerance	Pout = 10 Watts	5 : 1			

BVcbo	Collector to Base Breakdown	Ic = 50 mA	45			Volts
BVceo	Collector to Emitter Breakdown	Ic = 50 mA	20			Volts
BVebo	Emitter to Base Breakdown	Ie = 6.0 mA	3.5			Volts
Icbo	Collector to Base Leakage	Vcb = 20 V			6.0	mA
Hfe	Current Gain	Vce = 5 V, Ic = 2 A	15		100	
θjc	Thermal Resistance	Tc = 25 °C		2.6	2.8	°C/W

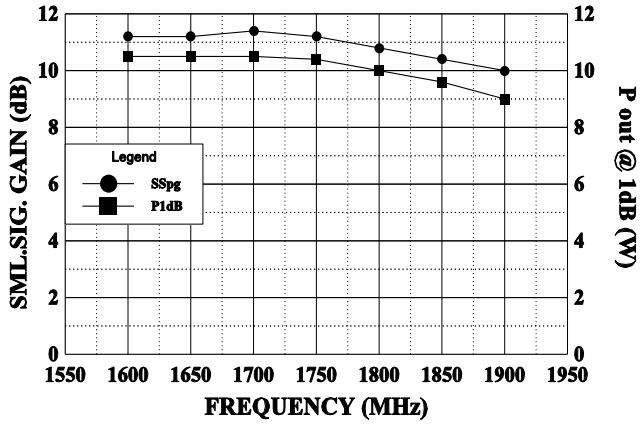
Case Outline Note: During 1995 Ghz will be converting the 55AT style flange to the version using a slot in the mounting area, refer to 55AW.

Initial Issue September, 1994

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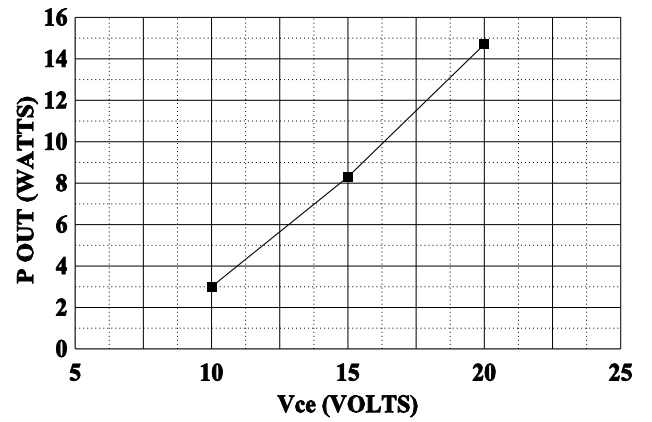
SMALL SIGNAL GAIN AND P_{1dB}

V_{cc} = 18 Volts, I_{cq} = 2 A, T_c = + 25 C



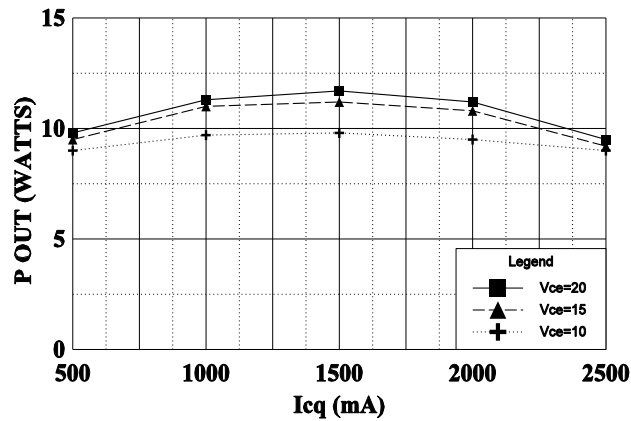
P_{1dB} vs V_{cc}

F = 1700 MHz



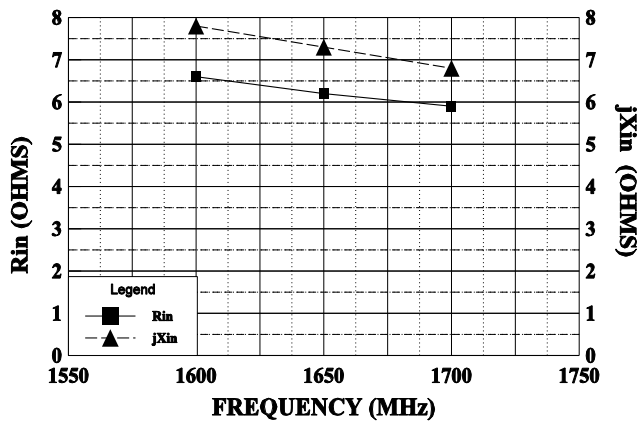
P_{1dB} vs I_{cq}

F = 1700 MHz, V_{cc} = 20, 22, 24 Volts



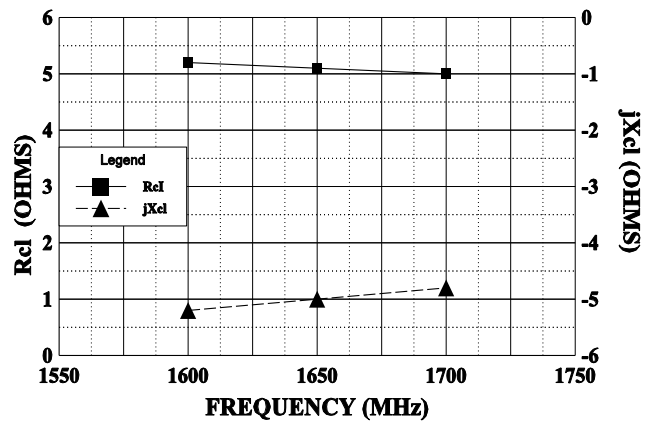
LARGE SIGNAL INPUT IMPEDANCE

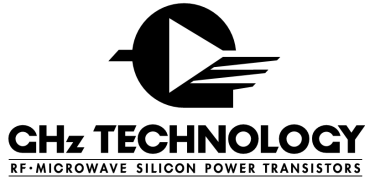
V_{cc} = 18 V, Pin = 1.5 W



LARGE SIGNAL LOAD IMPEDANCE

V_{cc} = 18 V, Pin = 1.5 W





1617AM10-1 (18V, 1.8A)

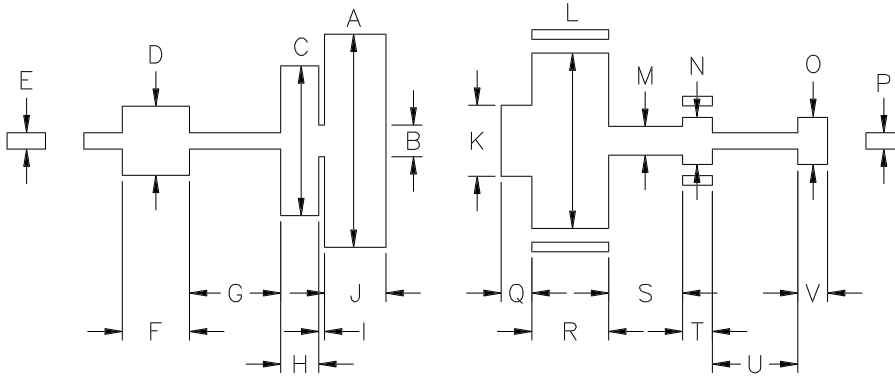
MMICAD for Windows Thu Jul 07 15:37:58 1994
 CIRCUIT: MES

FREQ MHz	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
0.100	0.90806	-177.171	3.40860	61.0224	0.00614	-21.3705	0.88063	-171.763
0.200	0.94646	-177.544	1.18834	34.3237	0.00340	-35.1121	0.94527	-175.729
0.300	0.97141	-179.015	0.49374	17.4944	0.00129	-21.6921	0.97611	-178.892
0.400	0.98271	179.675	0.18981	6.98405	0.00181	74.7273	0.99139	177.899
0.500	0.98866	178.447	0.03051	22.2196	0.00325	84.1734	0.99562	175.005
0.600	0.99143	177.244	0.07859	149.019	0.00569	82.0315	0.99294	172.258
0.700	0.99355	176.167	0.15321	145.403	0.00728	80.9799	0.98369	169.607
0.800	0.99577	175.349	0.21586	137.903	0.00937	73.6351	0.96566	167.012
0.900	0.99624	174.291	0.27671	129.841	0.01137	70.3128	0.94430	164.627
1.000	0.99601	173.132	0.34237	121.208	0.01386	63.4106	0.91801	162.480
1.100	0.99473	171.980	0.42307	112.047	0.01633	57.9572	0.88810	160.229
1.200	0.99099	170.695	0.53170	101.873	0.01920	50.0051	0.85097	157.819
1.300	0.98715	168.902	0.69796	89.6193	0.02384	41.9274	0.79451	154.932
1.400	0.96884	166.326	0.98194	72.8332	0.03140	29.4898	0.69827	151.891
1.500	0.89566	162.580	1.49734	43.9547	0.04580	4.24005	0.50385	156.495
1.600	0.75494	169.139	1.84787	-9.34245	0.05315	-47.9748	0.61256	-167.097
1.700	0.85754	176.936	1.24040	-56.2083	0.03301	-96.2939	0.90054	-179.209
1.800	0.92852	175.027	0.77167	-80.5882	0.01866	-125.448	0.93059	170.715
1.900	0.95725	172.908	0.52357	-95.6567	0.01134	-148.194	0.91127	165.199
2.000	0.97216	171.055	0.37912	-106.871	0.00761	-176.269	0.88670	162.011
2.100	0.97784	169.399	0.28829	-115.767	0.00542	165.775	0.86543	160.359
2.200	0.98069	167.949	0.22738	-123.656	0.00460	144.908	0.85414	159.194
2.300	0.98183	166.654	0.18556	-130.976	0.00515	142.654	0.84867	158.533
2.400	0.98111	165.402	0.15651	-138.156	0.00640	149.407	0.85314	158.262
2.500	0.97924	164.512	0.13100	-146.176	0.00834	126.479	0.86243	157.251

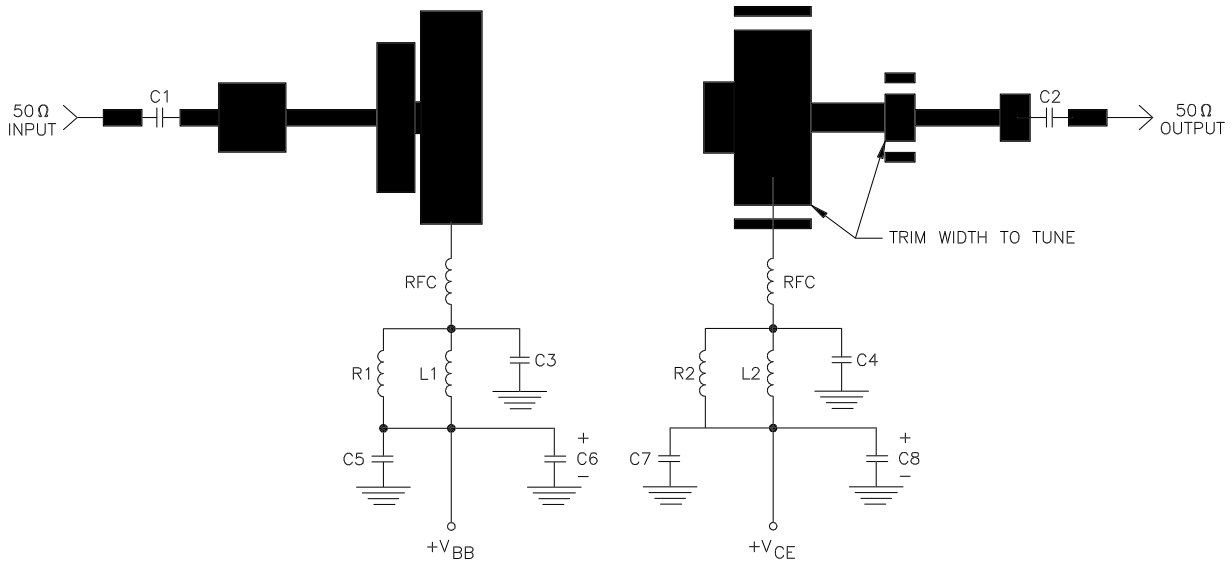
REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
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DIM	INCHES
A	1.110
B	.165
C	.780
D	.360
E	.085
F	.350
G	.475
H	.197
I	.030
J	.320
K	.370
L	.912
M	.150
N	.245
O	.245
P	.085
Q	.160
R	.400
S	.385
T	.155
U	.445
V	.155



1617 AM10 TEST CIRCUIT



DIELECTRIC = 31.2 MIL THICK TFE $\epsilon_r = 2.55$
 C1, C2, C3, C4 = 62pF CHIP ATC "B"
 C5, C7 = 0.1 MFD
 C6, C8 = 10 MFD @ 35V
 R1, R2 = 15Ω 1/2 WATT
 RFC = 4 turns #22 wire 1/16" I.D.
 L1, L2 = 10 MICROHENRY