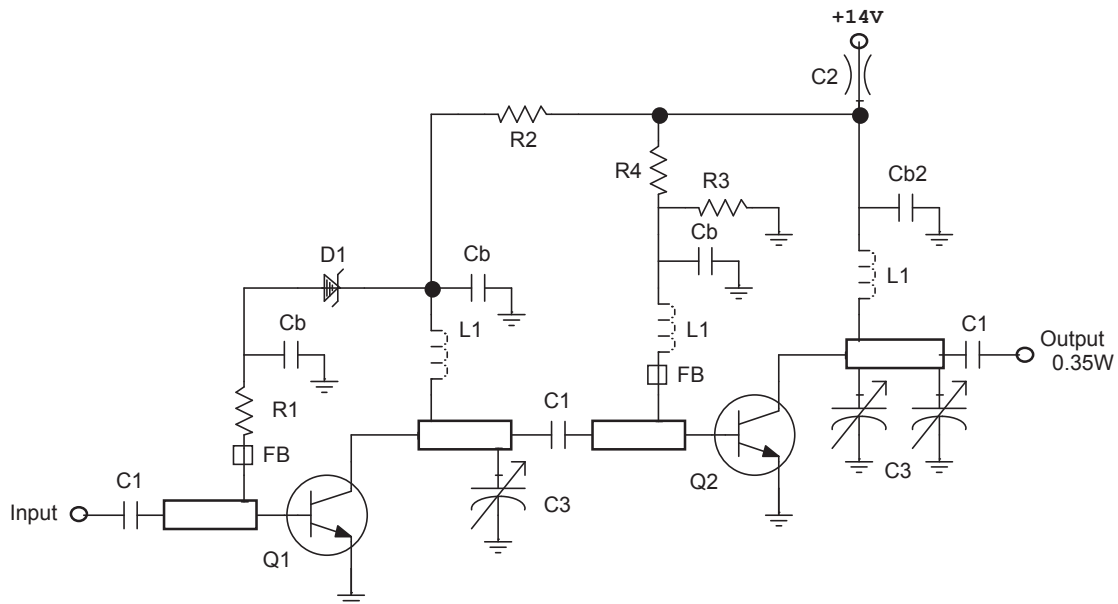


**2304 MHz Linear Amplifier**  
**WA3JUF 1985**  
**Class AB G=13dB**

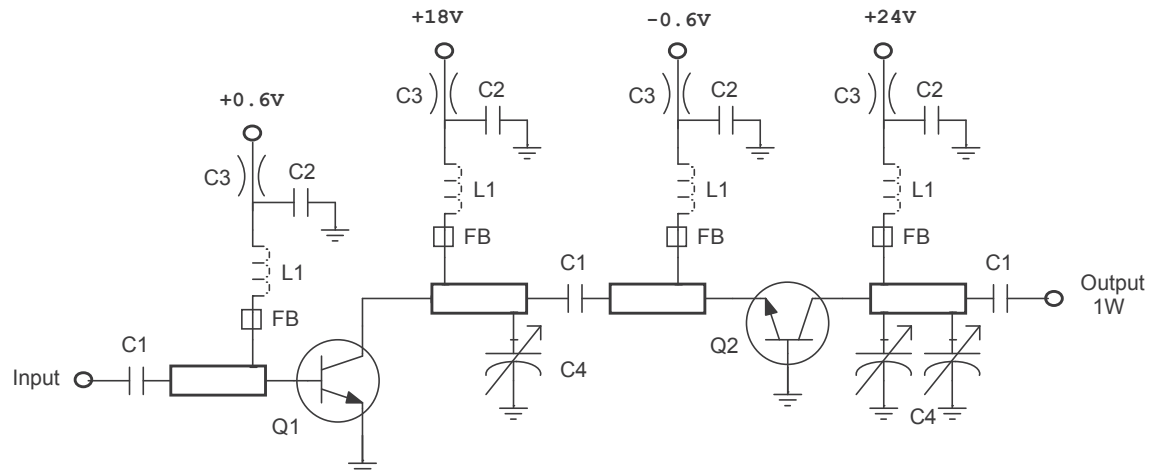


- Q1 - SD1333 or MRF961
- Q2 - SD1850
- L1 - 4t, #28, 0.1" ID
- FB - FT43 bead
- D1 - 10V zener
- C1 - 20pf chips
- Cb - 100pf + .01uf chips
- Cb2- 100pf + .01uf chips + 1uf Tant
- C2 - 1000pf feedthru
- C3 - 4.5pf Johanson GigiTrim
- R1 - 47-ohm 1/4w
- R2 - 33-ohm 1/2w
- R3 - 100-ohm 1/4w
- R4 - 1.6K-ohm 1/4w

# 2304 MHz Linear Amplifier

## WA3JUF 1985

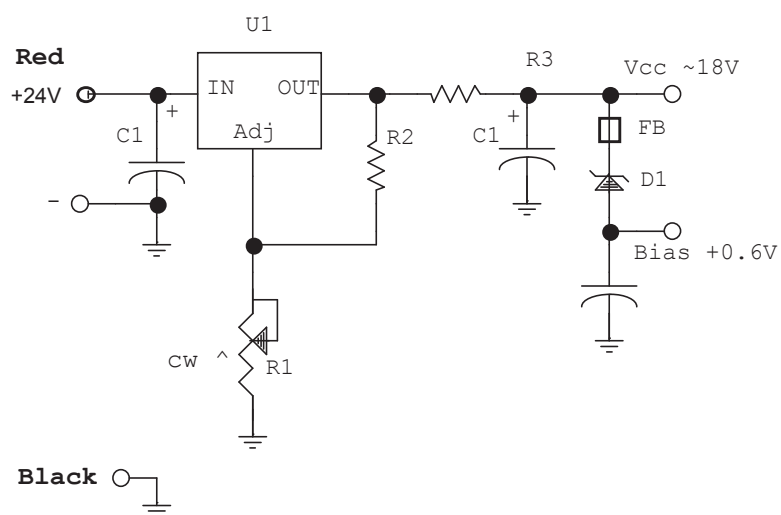
### Class AB G=15dB



- Q1 - SD1850 CE transistor
- Q2 - SD1801 CB transistor
- L1 - 4t, #28, 0.1" ID
- FB - FT43 bead
- C1 - 47pf chip
- C2 - 100pf chip
- C3 - 1000pf feedthru
- C4 - 4.5pf Johanson GigiTrim

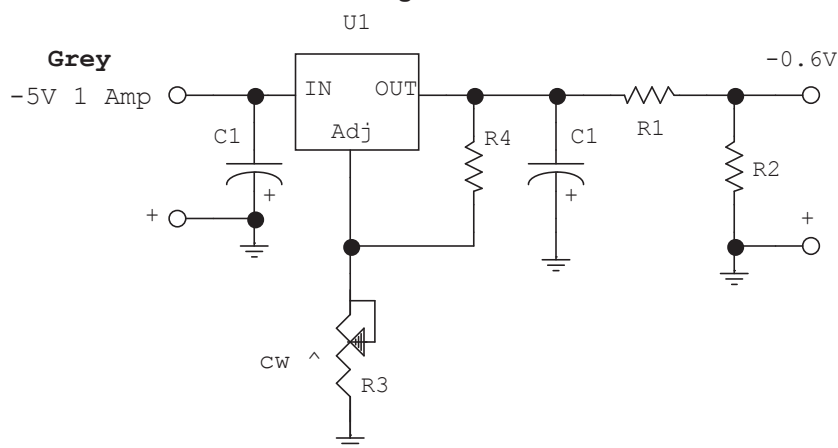
## 2-stage Amplifier supplies WA3JUF 1985

### SD1850 Vcc and CE bias



U1 - LM317T regulator  
 D1 - 1N967 18V zener  
 R1 - 100-ohm pot  
 adjusted for  $I_{CQ}=50\text{mA}$   
 R2 - 220-ohm 1/4w  
 R3 - 20-ohm 1/2w  
 FB - FT43 bead  
 C1 - 1uF tantalum

### SD1801 CB negative bias

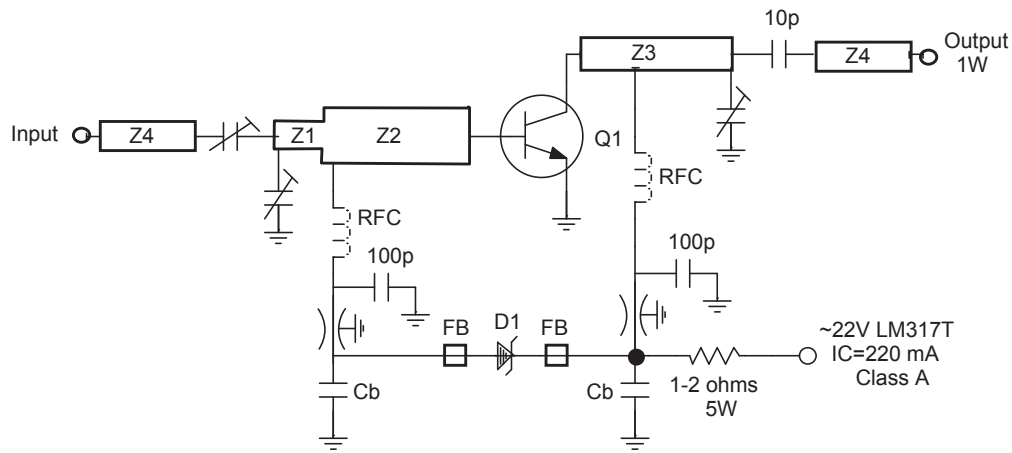


U1 - LM337T regulator  
 R1,2 - 3.3-ohms 1/2 watt  
 R3 - 100-ohm pot  
 adjusted for  $I_{CQ}=10\text{-}20\text{mA}$   
 R4 - 120-ohm 1/4w  
 C1 - 1uF tantalum

# 2304 MHz 1W Linear Amplifier

## WA3JUF 1990

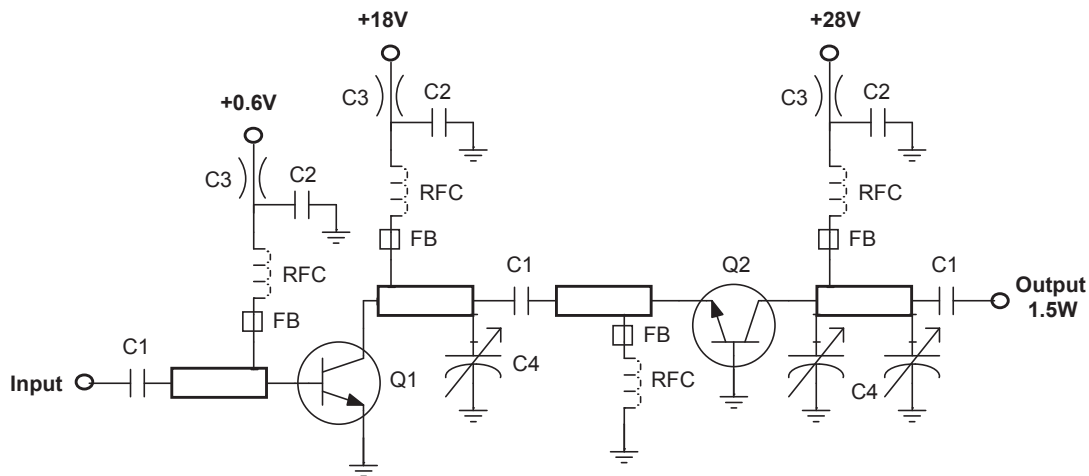
### Class AB G=7.5dB



Pin +22.5dBm Pout +30dBm PSat +31dBm

Q1 - SGS-Thomson MSC80196  
 Z1 = 0.080" x 0.275"  
 Z2 = 0.280" x 1.0"  
 Z3 = 0.140" x 0.55"  
 Z4 = 0.080" wide 50-ohm line  
 D1 = 20V zener  
 RFC = 4t, #24, 0.1"ID  
 Cb = 10uf tant + 0.1uf  
 Trimmer caps = 0.3-3pf GigiTrim  
 PCB = 1/32" Teflon Er=2.5

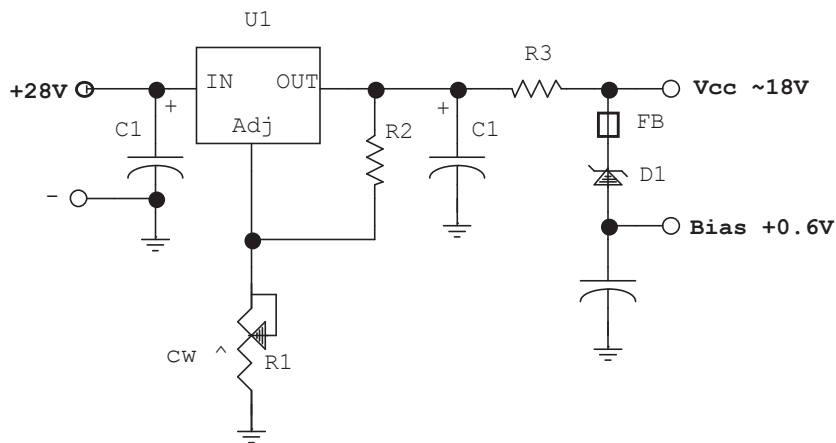
# **2304 MHz Amplifier** **Gain 18-20dB WA3JUF 1988**



Q1 - SD1850 CE transistor - AB  
 Q2 - SD1801 CB transistor - C  
 L1 - 4t, #28, 0.1" ID  
 FB - FT43 bead  
 C1 - 47pf chip  
 C2 - 100pf chip  
 C3 - 1000pf feedthru  
 C4 - 4.5pf Johanson GigiTrim

Microstrip details from Cheese Bits articles

## **SD1850 Vcc and CE bias**



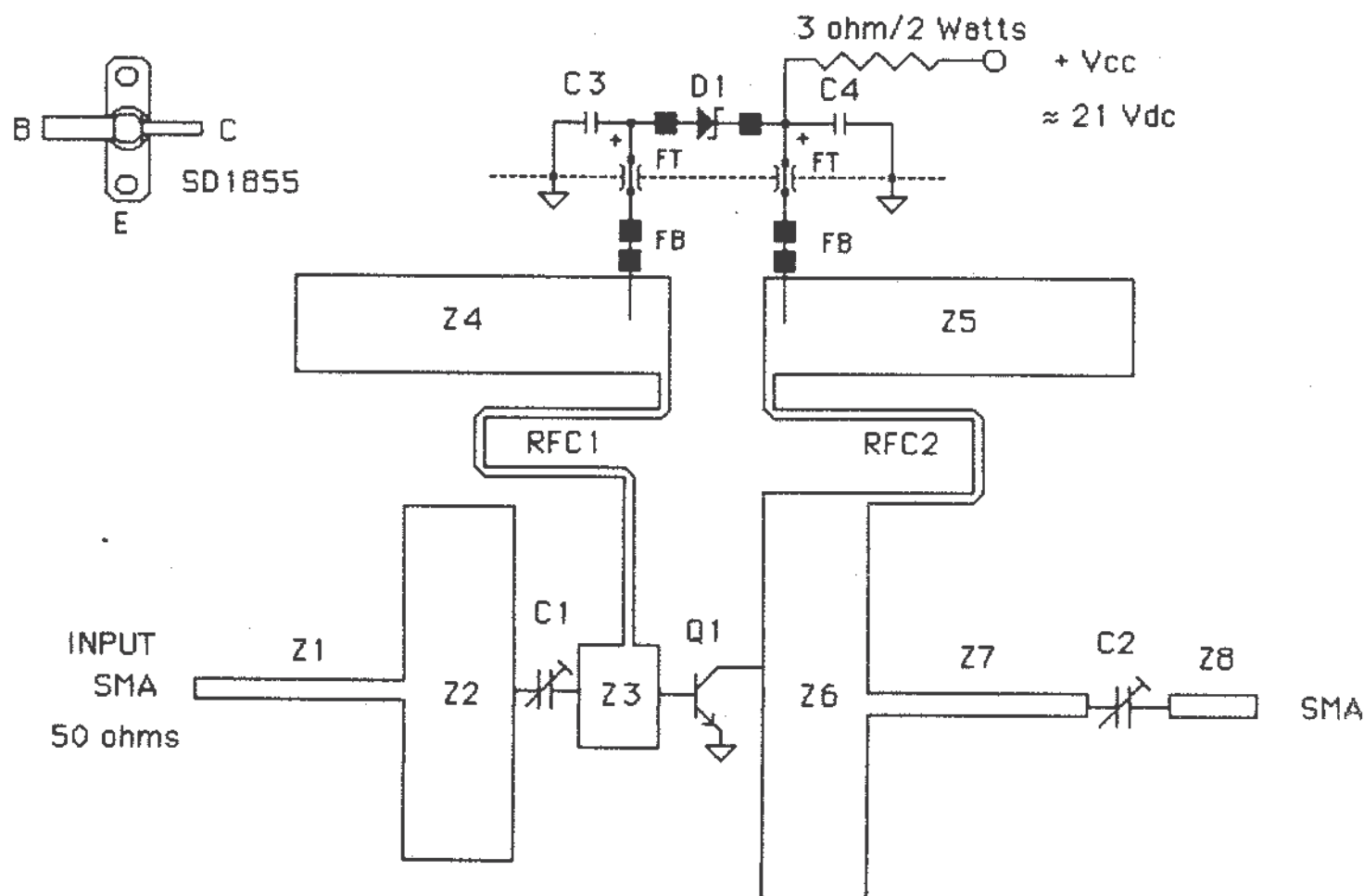
U1 - LM317T regulator  
 D1 - 1N967 18V zener  
 R1 - 100-ohm pot  
     adjusted for  $I_{cq}=50mA$   
 R2 - 240-ohm 1/4w  
 R3 - 22-ohm 1/2w  
 FB - FT43 bead  
 C1 - 1ufd tantalum

## 2.5 Watt Class 'A' Linear Amplifier for 2.3 GHz.

Gain > 6 DB

RTL > 20 DB

P sat  $\approx$  3 Watts



C1,2 3 pf Johanson Gigi-trim capacitor  
 C3,4 10 ufd/35 vdc ( 6vdc for C3 ok )  
 D1 20 volt zener 2N4747A  
 FB ferrite bead ( 2 on each FT ) ( 1 on each lead of zener )  
 FT Feedthru cap, Spectrum Controls Inc.  
 \* SCI 729-303 ( or 100 pf )

Q1 Thomson CSF Semiconductor  
 SD1855 (TCC20L25)

Z1,8 50 ohm line 0.080" wide  
 Z2 0.2 X 0.65"  
 Z3 0.25 X 0.30"  
 Z4,5 RF Short 0.275 X 1.0"  
 Z6 0.25 X 0.675"  
 Z7 0.080 X 0.65"

RFC1,2 Choke 0.035 X 1.10"

Board = 1/32" Teflon Er = 2.5

D. Mascaro WA3JUF 1985

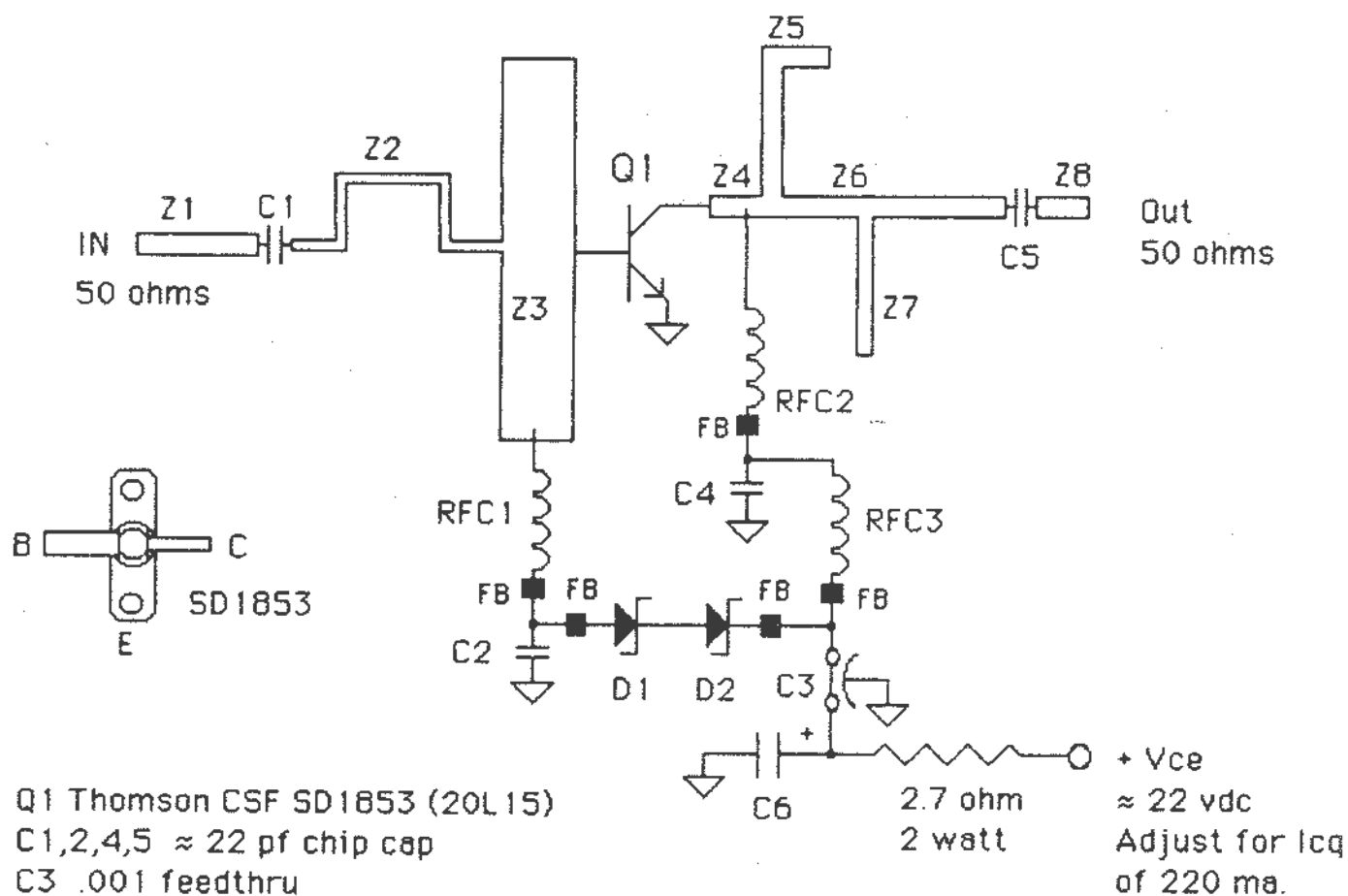
# 1 Watt Class 'A' Linear Amplifier for 2.3 GHz.

Vce 22v

Icq 220 ma.

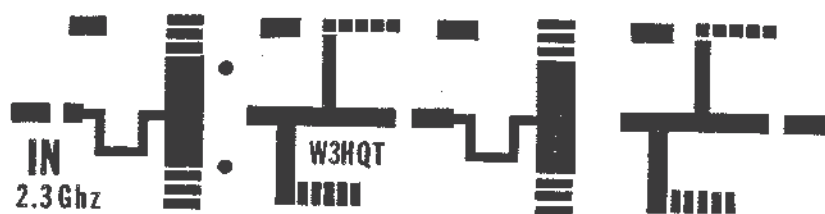
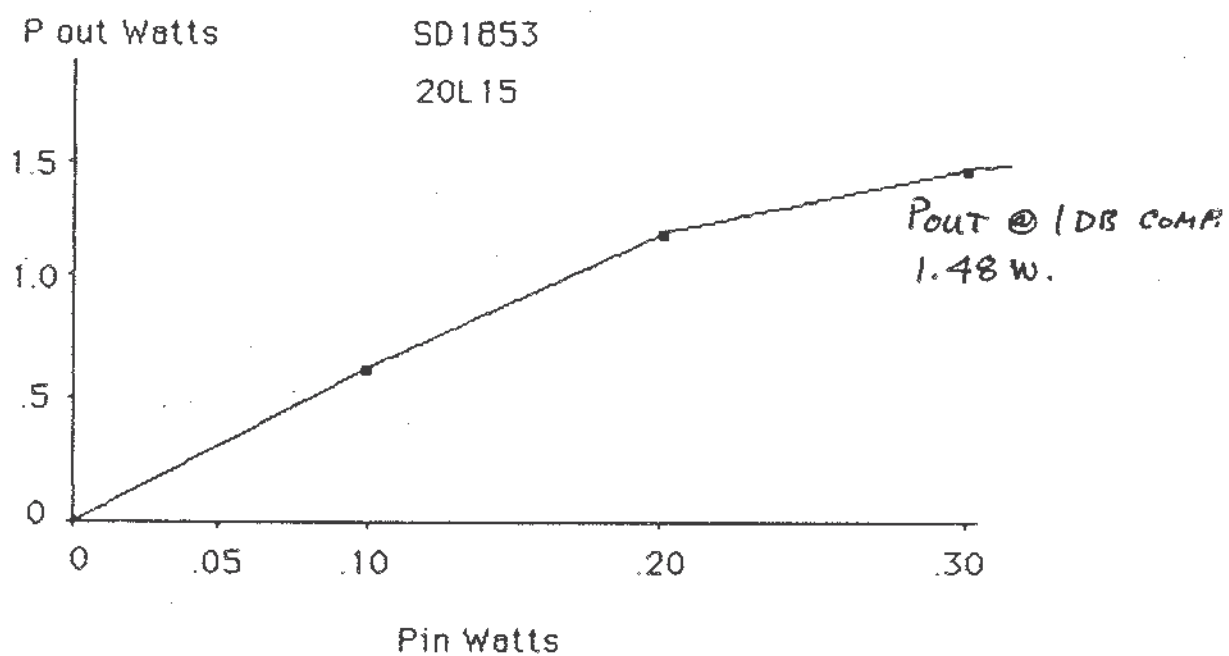
Pg > 7 DB at 1 db compression

Pout > 1.0 Watt @ 1 db comp.



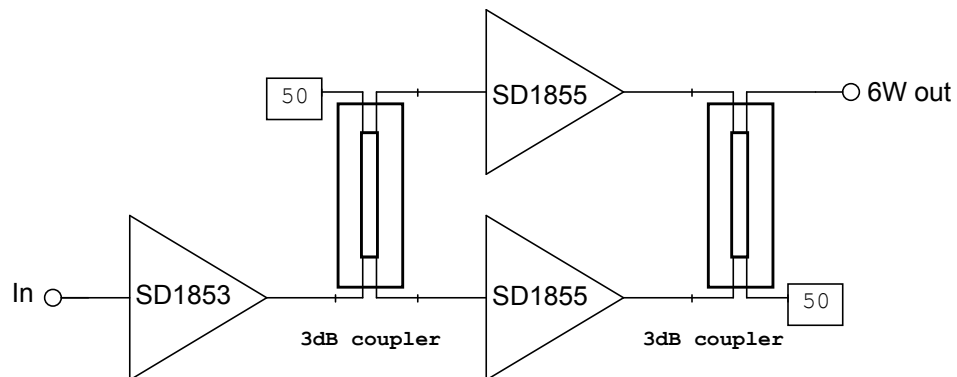
W3HQT 1984

Drawn by WA3JUF 1985

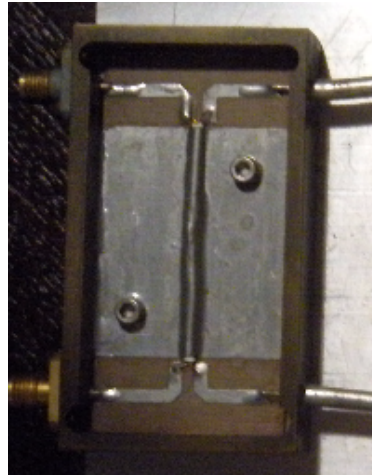




**2304 MHz 6W Linear Amplifier  
WA3JUF 1986**



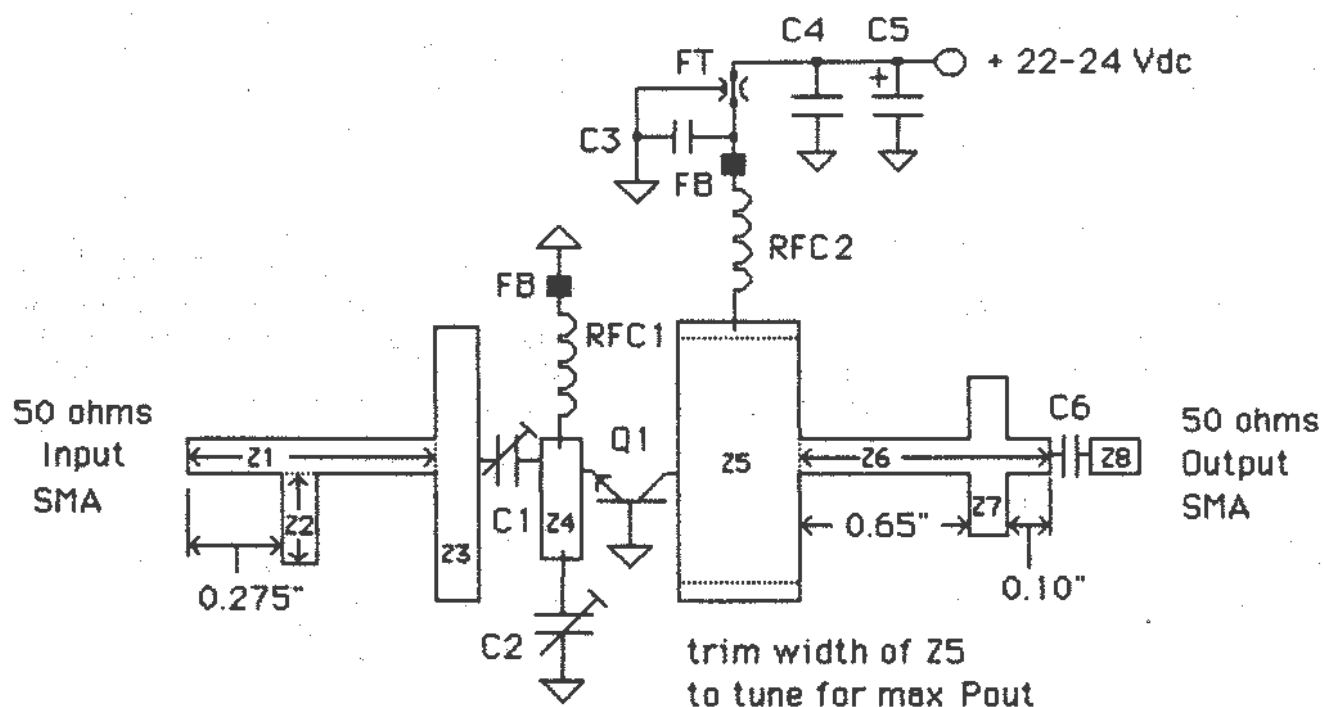
The SD1853 and SD1855 are Class A amplifiers, but the  $I_{cQ}$  can be adjusted lower toward Class AB which will increase the gain and the available power output.



Sage Wireline  
3dB coupler

1296 MHz unit shown

# 7 Watt Class 'C' Amplifier for 2.3 GHz.



Board material is 1/32" Teflon Er=2.5

Q1 Thomson CSF Semiconductor SD1817 (2307)

RFC1,2 3t, #26, 0.10" ID

C1 3 pf Johanson Gigi-trim cap

C2 0.3 pf - 3 pf Johanson piston trimmer

C3,6 47 pf chip cap

C4 .01 ufd disc

C5 10 ufd/35 Vdc

FB ferrite bead

FT Spectrum Controls, Inc. feedthru

\*SCI 729-303 (or .001 ufd)

Z1 0.08" X 1.1"

Z2 0.15" X 0.38"

Z3 0.07 X 0.85"

Z4 0.11" X 0.3"

Z5 0.4" X 0.8"

Z6 0.1" X 0.88"

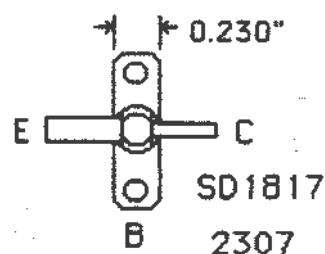
Z7 0.15" X 0.7"

Z8 0.08" wide 50 ohm line

Pin 1 Watt

Pout 7 Watts

Pin Sat. 2 Watts



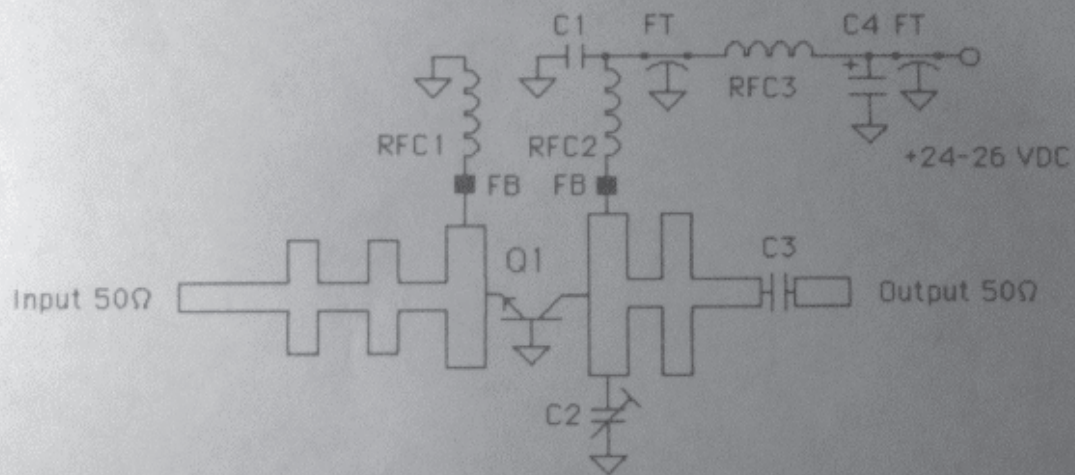
WA3JUF

D. Mascaro 1985

NOV. 1986 CHEESE-BITS

20-25 watt Class 'C' Amplifier for 2.3 GHz

Pin 3-4 Watts @ 26 Vdc



- C1,3 27-47 pf chip cap
- C2 4.5 pf Johanson Gigi-trim JMC#27273
- C4 10 ufd/35 Vdc
- FT 470 pf - 1000 pf feedthru
- FB ferrite bead
- RFC1,2 3t, #26, 0.1" ID
- RFC3 4t, #26, 0.1" ID
- Q1 Thomson SD1870

WA3JUF 1987

WA3JUF 1987

