

ELECTRONIC TUBE REFERENCE

LD597A

Specialized - Traveling Wave electronic tube

CONSOLIDATED TECHNICAL DATA
1 SECTION
CONSTRUCTION
TRAVELINGWAVE

3.6-4.2 GHz traveling-wave power amplifier providing watt-level RF output with approximately 14 watts typical saturated output.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	— / —	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 TravelingWave
No fixed ratings recorded.
Published maximum ratings and characteristics audited; remaining numeric data retained densely in parameter table.

The LD597A is a continuous-wave traveling-wave amplifier covering approximately 3.6 to 4.2 GHz, using depressed-collector operation for improved efficiency.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1971 NEC

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1971 NEC

Section 1 · TravelingWave

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
frequency range [1]	3.6	frequency range 3.6 kMc to 4.2 kMc. The minimum gain is 33db at 6 watt
frequency range [2]	4.2	frequency range 3.6 kMc to 4.2 kMc. The minimum gain is 33db at 6 watt
frequency range [3]	33	frequency range 3.6 kMc to 4.2 kMc. The minimum gain is 33db at 6 watt
frequency range [4]	6	frequency range 3.6 kMc to 4.2 kMc. The minimum gain is 33db at 6 watt
output level with a typical saturation output of	14	output level with a typical saturation output of 14 watts.
permanent magnet focusing mount, type LD	597	permanent magnet focusing mount, type LD-597A Mount, incorporated with
temperature exceed	55	temperature exceed 55°C or the mount axis is horizontal.
Published value	1	1. PPM Focused and Field Replaceable,
Published value	2	2. Depressed Collector Operation for Improved Efficiency.
Collector Voltage (Bb) .ovunenn [1]	1700 V	Collector Voltage (Bb) .ovunenn. 1700 Vdc 2000 Vdc
Collector Voltage (Bb) .ovunenn [2]	2000 V	Collector Voltage (Bb) .ovunenn. 1700 Vdc 2000 Vdc
Collector Current (Iv) cevvnenn	35 A	Collector Current (Iv) cevvnenn. - 35 mAdc
Helix Voltage (Ew) [1]	2600 V	Helix Voltage (Ew) 2600 Vde 3000 Vdc
Helix Voltage (Ew) [2]	3000 V	Helix Voltage (Ew) 2600 Vde 3000 Vdc
Helix Current (Iw) nnnnnnnnnnnnnn	1.5 A	Helix Current (Iw) nnnnnnnnnnnnnn - 1.5 mAdc

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Accelerating Anode Voltage (Ea)	3500 V	Accelerating Anode Voltage (Ea) ----- - 3500 Vdc
Accelerating Anode Current (Ia) - C	5 A	Accelerating Anode Current (Ia) - C.5 mAde
Focusing Electrode Voltage (¥c) oooooooooooooooooo	-55 V	Focusing Electrode Voltage (¥c) oooooooooooooooooo -55 Vde ~-L5 Vdc
Collector Dissipation oooooooooooooo	63 W	Collector Dissipation oooooooooooooo - 63 W
Collector Seal lemperature	180	Collector Seal lemperature - 180 °C
Mount Ambient Temperature Range oooooooooooooooooo [1]	-10	Mount Ambient Temperature Range oooooooooooooooooo -10 °C +55 9C
Mount Ambient Temperature Range oooooooooooooooooo [2]	55	Mount Ambient Temperature Range oooooooooooooooooo -10 °C +55 9C
Mount Ambient Temperature Range oooooooooooooooooo [3]	9	Mount Ambient Temperature Range oooooooooooooooooo -10 °C +55 9C
Cathode Heating Time	90	Cathode Heating Time 90 sec. -
Cold input and output match over	600	Cold input and output match over 600 Mc band
Heater Current at	63 A	Heater Current at 6,3 Volts -----
Frequency [1]	3.7	Frequency 3.7 kMc 4.0 kMc L.2 kMc
Frequency [2]	4	Frequency 3.7 kMc 4.0 kMc L.2 kMc
Frequency [3]	2	Frequency 3.7 kMc 4.0 kMc L.2 kMc
RF Output power [1]	9.1 W	RF Output power 9.1 W g8 W 7.4 W
RF Output power [2]	7.4 W	RF Output power 9.1 W g8 W 7.4 W
(	3	(3mW input level)
RF Saturated Output [1]	15.6	RF Saturated Output 15.6 W 1.6 W 1L.2 W
RF Saturated Output [2]	1.6	RF Saturated Output 15.6 W 1.6 W 1L.2 W
RF Saturated Output [3]	1	RF Saturated Output 15.6 W 1.6 W 1L.2 W
RF Saturated Output [4]	2	RF Saturated Output 15.6 W 1.6 W 1L.2 W
frequency range [1]	3.6	frequency range 3.6 to L.2 kMc.
frequency range [2]	2	frequency range 3.6 to L.2 kMc.
Published value	3 V	3. Application of Voltage
Published value	3.1 V	3.1 Apply the heater voltage and allow a minimum warm-up period of
Published value	3.2 V	3.2 Set the focusing electrode, collector and helix voltages according

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
LD	597	LD-597A tube envelope shipped. It is recommended that the collector
Published value	3.3 V	3.3 OSwitch on all voltages. Accelerating anode voltage should be about
Published value	3.4 A	3.4 Adjust tube position carefully to optimize current transmission
Published value	3.5 V	3.5 Apply the specified rf drive and adjust accelerating anode voltage
Published value	3.6 V	3.6 Adjust the helix voltage for maximum power output. The helix wvol-
Published value	2000 V	2000 volts, If the helix voltage is above or below this range,
The collector voltage should never be depressed below	1700 V	The collector voltage should never be depressed below 1700 volts
Published value	3.7 A	3.7 Readjust tube position for the best current transmission, and then