

Broadband microwave traveling-wave power amplifier covering approximately 5.8–8.2 GHz, with roughly 30–33 dB small-signal gain and watt-level output.

GENERAL CHARACTERISTICS

BASE DESIGNATION	–	BASE PINS	–
NOMINAL HEATER	6.3 V / –	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 LD550A is a continuous-wave traveling-wave amplifier covering approximately 5.8 to 8.2 GHz for microwave relay equipment, 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
a frequency range of [1]	5.8	a frequency range of 5.8 to 8.2 kMc. For the upper half of this frequency
a frequency range of [2]	8.2	a frequency range of 5.8 to 8.2 kMc. For the upper half of this frequency
range, this type tube has an average small signal gain of	30	range, this type tube has an average small signal gain of 30 db and a
saturated output power of about	8 W	saturated output power of about 8 watts. For the lower half of the feq-
ency range, the average small signal gain is	33	ency range, the average small signal gain is 33db and the saturated output
power is about	10 W	power is about 10 watts., The construction of the tube is of the conven-
magnet focusing system, LD	550	magnet focusing system, LD-550A Mount; it is convention-cooled, and operates
Published value	1	1. PPM Focused and Field Replaceable.
Published value	2	2., Depressed Collector Operation For Improved Efficiency.
RF Input & Output - - - - - - - WR [1]	137	RF Input & Output - - — — - - - WR-137 with UG-344/U flange
RF Input & Output - - - - - - - WR [2]	344	RF Input & Output - - — — - - - WR-137 with UG-344/U flange
Accelerating Anode Voltage - - - - = = - - - =	3400 V	Accelerating Anode Voltage - - - - = = - - - = 3400V
Accelerating Anode Current - - « = = ~ = - - ~	1 A	Accelerating Anode Current - - « = = ~ = - - ~ 1.0 mA
Helix Voltage - = - = = - = = = = = = - =	3400 V	Helix Voltage - = — = = — = = = = = = = = — = 3400 V

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Helix Current [1]	3 A	Helix Current 3 = = = = = o = = = = ~ - 1.0 mA
Helix Current [2]	1 A	Helix Current 3 = = = = = o = = = = ~ - 1.0 mA
or Voltage, min. - - = - ~ =	1600 V	or Voltage, min. - - = - ~ = - - 1600 V
Collector Current - - = = = = = = - = = = =	35 A	Collector Current - - = = = = = - = = = - - 35 mA
Collector Dissipation - - =	56 W	Collector Dissipation - - = - - - - - 56 W
Focusing Electrode Voltage, max., - - - - - =	20 V	Focusing Electrode Voltage, max., - - - - - =20V
Focusing Electrode Voltage, min, - - = - = - = -	-60 V	Focusing Electrode Voltage, min, - - = - = - = - -60V
Ambient Temperature, maX. - ~ - = = = = ~ - - =	550	Ambient Temperature, maX. - ~ - = = = = ~ - - = 550C
Ambient Temperature, min, - - ~ = = - - - - - -	-559	Ambient Temperature, min, - - ~ = = - - - - - - -559C
Collector Seal Temperature - - - - ~ = - =	130	Collector Seal Temperature - - - - ~ = - = - 130°C
Published value [1]	0 V	0 Heater Voltage = 6.3 V; Heater Current at 6.3 V = 0.73A
Published value [2]	6.3 V	0 Heater Voltage = 6.3 V; Heater Current at 6.3 V = 0.73A
Published value [3]	6.3 V	0 Heater Voltage = 6.3 V; Heater Current at 6.3 V = 0.73A
Published value [4]	0.73 V	0 Heater Voltage = 6.3 V; Heater Current at 6.3 V = 0.73A
0 Frequency - - = = - - = = = = = = = ~ = [1]	6860	0 Frequency - - = = - - = = = = = ~ = 6860 + 15 Mc
0 Frequency - - = = - - = = = = = = = ~ = [2]	15	0 Frequency - - = = - - = = = = = ~ = 6860 + 15 Mc
0 Accelerating Anode Voltage - - - - - = =	2500 V	0 Accelerating Anode Voltage - - - - - = - - 2500 Vv
© Accelerating Anode Current - - - - - =	10 mA	© Accelerating Anode Current - - - - - = - - 0.01 mA
0 Helix Voltage - = = = ~ = = = = = - - =	3100 V	0 Helix Voltage - = = = ~ = = = = = - - = 3100 v
0 Helix Current - ~ - - - = = ~ = = = = - = ~	300 mA	0 Helix Current - ~ - - - = ~ = = = = - = ~ 0.3 mA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
0 Collector Voltage — = = = ~ — = = = = = ~ — = = = = = = = =	1600 V	O Collector Voltage — = = = ~ — = = = = = = = - 1600 V
0 Focusing Electrode Voltage - - - - - « ~ « - - - - - « ~ «	-30 V	O Focusing Electrode Voltage - - - - - « ~ « - - -30V
0 RF Output ([1]	3	O RF Output (3 mW input level) - - - - - = - = 5W
0 RF Output ([2]	5	O RF Output (3 mW input level) - - - - - = - = 5W
o RF Output Saturated - ~ = = = ~ — = = = - « - - - _	11	o RF Output Saturated - ~ = = = ~ — = = = - « - - - _ 11 W
0 Small Signal Gain - = = ~ - ~ = = = = - ~ - « « ~	33	O Small Signal Gain - = = ~ - ~ = = = = - ~ - « « ~ - 33 db
0 Hot output match over	30 MHz	O Hot output match over 30 Mc/s ‘
0 Gain Linearity over [1]	30 MHz	O Gain Linearity over 30 Mc/s band - - - — - = 0.2 db
0 Gain Linearity over [2]	0.2 MHz	O Gain Linearity over 30 Mc/s band - - - — - = 0.2 db
Published value	3 A	3. Helix current increases gradually with tube life. Warning of
the end of tube life is given when helix current reaches	2 A	the end of tube life is given when helix current reaches 2
Published value	1	1HEATER
e [1]	445	e 445 max — - B 3 ANODE
e [2]	3	e 445 max — - B 3 ANODE
Published value [1]	400	400 max 7 HEATERACATHODE
Published value [2]	7	400 max 7 HEATERACATHODE
Published value	8	8 FOCUSING

TUBE TINKER

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