

ELECTRONIC TUBE REFERENCE

LD605

Specialized - Traveling Wave electronic tube

CONSOLIDATED TECHNICAL DATA
1 SECTION
CONSTRUCTION
TRAVELINGWAVE

Broadband traveling-wave power amplifier covering approximately 5.85–7.2 GHz, with saturated output around 16–23 watts depending on frequency.

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
<i>No fixed ratings recorded.</i>
<i>Published maximum ratings and characteristics audited; remaining numeric data retained densely in parameter table.</i>

The LD605 is a continuous-wave traveling-wave amplifier covering approximately 5.85 to 7.2 GHz with depressed-collector operation and broadband microwave output.

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 of [1]	585	frequency range of 5,85 kic to 7.2 kMc. For the frequency band of 5.85 kMc
frequency range of [2]	7.2	frequency range of 5,85 kic to 7.2 kMc. For the frequency band of 5.85 kMc
frequency range of [3]	5.85	frequency range of 5,85 kic to 7.2 kMc. For the frequency band of 5.85 kMc
to [1]	6.45	to 6.45 kMc, this tube type has an average gain of LO db at 10 watt out-
to [2]	10	to 6.45 kMc, this tube type has an average gain of LO db at 10 watt out-
put level and a saturated output power of about	20 W	put level and a saturated output power of about 20 watts. For the frequency
band of [1]	6.45	band of 6.45 kMc to 7.2 kMc, the average gain at 10 watt output level
band of [2]	7.2	band of 6.45 kMc to 7.2 kMc, the average gain at 10 watt output level
band of [3]	10	band of 6.45 kMc to 7.2 kMc, the average gain at 10 watt output level
is [1]	38 W	is 38 db and the saturated output power is about 17 watts.
is [2]	17 W	is 38 db and the saturated output power is about 17 watts.
magnet focusing mount, type LD	605	magnet focusing mount, type LD-605 Mount, incorporated with waveguide
temperature exceed	559	temperature exceed 559C or the mount axis is vertical.
Published value	1	1. PPM Focused and Field RHeplaceable.,

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Published value	2	2. Depressed Collector Operation for Improved Efficiency.
Collector Voltage (Eb) [1]	1900 V	Collector Voltage (Eb) 1900 Vdc 2100 Vdc
Collector Voltage (Eb) [2]	2100 V	Collector Voltage (Eb) 1900 Vdc 2100 Vdc
Collector Current (Ib) –	40 A	Collector Current (Ib) — 40 mAdc
Helix Voltage (Ew) [1]	3000 V	Helix Voltage (Ew) 3000 Vdc 3600 Vdc
Helix Voltage (Ew) [2]	3600 V	Helix Voltage (Ew) 3000 Vdc 3600 Vdc
Helix Current (Iw) –	2 A	Helix Current (Iw) — 2.0 mAdc
Accelerating Anode Voltage (Ea) –	3600 V	Accelerating Anode Voltage (Ea) — 3600 Vdc
Accelerating Anode Current (Ia) –	1 A	Accelerating Anode Current (Ia) — 1.0 mAdc
Focusing Zlectrode Voltage (Ec) [1]	-60 V	Focusing Zlectrode Voltage (Ec) -60 Vdc -20 Vdc
Focusing Zlectrode Voltage (Ec) [2]	-20 V	Focusing Zlectrode Voltage (Ec) -60 Vdc -20 Vdc
Collector Dissipation –	8 W	Collector Dissipation — 8, W
Collector Seal Temperature –	130	Collector Seal Temperature — 130 °C
Mount Ambient Temperature Range [1]	-10	Mount Ambient Temperature Range -10 °C +55 °C
Mount Ambient Temperature Range [2]	55	Mount Ambient Temperature Range -10 °C +55 °C
Cathode Heating Time	90	Cathode Heating Time 90 sec., —
Cold input and output match over [1]	5.85	Cold input and output match over 5.85 to 6.45 and
Cold input and output match over [2]	6.45	Cold input and output match over 5.85 to 6.45 and
Hot input match over [1]	5.85	Hot input match over 5.85 to 6.45 and 6.45 to 7.2 kMc VaWR
Hot input match over [2]	6.45	Hot input match over 5.85 to 6.45 and 6.45 to 7.2 kMc VaWR
Hot input match over [3]	6.45	Hot input match over 5.85 to 6.45 and 6.45 to 7.2 kMc VaWR
Hot input match over [4]	7.2	Hot input match over 5.85 to 6.45 and 6.45 to 7.2 kMc VaWR
Hot output match over [1]	5.85	Hot output match over 5.85 to 6.45 kMc vereresaees VOWR

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Hot output match over [2]	6.45	Hot output match over 5.85 to 6.45 kMc vereresaees VOWR
Hot output match over [1]	6.45	Hot output match over 6.45 to 7.2 kMc b . VSWR < 2
Hot output match over [2]	7.2	Hot output match over 6.45 to 7.2 kMc b . VSWR < 2
Hot output match over [3]	2	Hot output match over 6.45 to 7.2 kMc b . VSWR < 2
Heater Current at [1]	6.3 A	Heater Current at 6.3 Volts c.... Ceeetreieaaes . 0.6 A
Heater Current at [2]	600 mA	Heater Current at 6.3 Volts c.... Ceeetreieaaes . 0.6 A
Frequency (kic) [1]	5.85	Frequency (kic) 5.85 6.45 7.2
Frequency (kic) [2]	6.45	Frequency (kic) 5.85 6.45 7.2
Frequency (kic) [3]	7.2	Frequency (kic) 5.85 6.45 7.2
RF Output Power (W) [1]	12 W	RF Output Power (W) 12 10 7
RF Output Power (W) [2]	10 W	RF Output Power (W) 12 10 7
RF Output Power (W) [3]	7 W	RF Output Power (W) 12 10 7
RF Saturated Output (W) [1]	23	RF Saturated Output (W) 23 19 16
RF Saturated Output (W) [2]	19	RF Saturated Output (W) 23 19 16
RF Saturated Output (W) [3]	16	RF Saturated Output (W) 23 19 16
(	0.1	(0.1 mW input level)
current due to other magnetic materials less than	100 mA	current due to other magnetic materials less than 0.1 mA,
Published value	5.1 V	5.1 Apply the heater voltage and allow a minimum warm-up period
Published value	5.2 V	5.2 Set the focusing electrode, collector and helix voltages
Published value	5.3 V	5.3 OSwitch on all voltages. Accelerating anode voltage should
Published value	5.4 A	5.4 Adjust tube position carefully to optimize current transmission
Published value	5.5	5.5 Apply the specified rf drive and adjust accelerating anode
Published value	5.6 V	5.6 Adjust the helix voltage for optimum operation.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
The helix voltage should never be made to exceed	3600 V	The helix voltage should never be made to exceed 3600 volts
or fall below	3000 V	or fall below 3000 volts. If the helix voltage is above or
below	1900	below 1900 volts with respect to the cathode,
Published value	5.7	5.7 Readjust tube position and adjust the focusing electrode