

ELECTRONIC TUBE REFERENCE

F7347

Specialized - Traveling Wave electronic tube

CONSOLIDATED TECHNICAL DATA
1 SECTION
CONSTRUCTION
TRAVELINGWAVE

Rugged metal-ceramic helix traveling-wave pulse amplifier covering 2-4 GHz, providing about 1 kW rated peak output and 30 dB gain.

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 values retained densely in parameter table.	

The F7347 is a one-kilowatt pulsed traveling-wave amplifier covering approximately 2 to 4 GHz, using a rugged metal-ceramic envelope and helix slow-wave structure.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1962 ITT

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

1962 ITT

Section 1 · TravelingWave

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
The F [1]	7347	The F-7347 is a 1 kilowatt pulse traveling wave amplifier tube having 30 db
The F [2]	1	The F-7347 is a 1 kilowatt pulse traveling wave amplifier tube having 30 db
The F [3]	30	The F-7347 is a 1 kilowatt pulse traveling wave amplifier tube having 30 db
gain and [1]	2000	gain and 2000 to 4000 mc frequency range. It is constructed in a rugged
gain and [2]	4000	gain and 2000 to 4000 mc frequency range. It is constructed in a rugged
oxide impregnated cathode are used. Duty cycles up to	5	oxide impregnated cathode are used. Duty cycles up to . 005 and pulse lengths
Heater Voltage	6.3 V	Heater Voltage 6.3 (x6%) volts
Heater Current	5.2 A	Heater Current 5.2 amperes
Maximum Anode Voltage (Note [1])	1 V	Maximum Anode Voltage (Note 1) 8000 wvolts
Maximum Anode Voltage (Note [2])	8000 V	Maximum Anode Voltage (Note 1) 8000 wvolts
Maximum Helix Current	500 mA	Maximum Helix Current 0.5 ampere peak
Maximum Collector Dissipation (Note [1])	2 W	Maximum Collector Dissipation (Note 2) 100 watts average
Maximum Collector Dissipation (Note [2])	100 W	Maximum Collector Dissipation (Note 2) 100 watts average
Maximum R-F Input Power	10 W	Maximum R-F Input Power 10 watts average
Maximum R-F Output Power	15 W	Maximum R-F Output Power 15 watts average
Maximum Cathode Current	2.5 A	Maximum Cathode Current 2.5 amperes peak
Maximum Grid Current	5 A	Maximum Grid Current .5 ampere peak

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Cold Input VSWR (Note [1])	7	Maximum Cold Input VSWR (Note 7) 4.0
Maximum Cold Input VSWR (Note [2])	4	Maximum Cold Input VSWR (Note 7) 4.0
Maximum Frequency (Note [1])	3	Maximum Frequency (Note 3) 4000 mc
Maximum Frequency (Note [2])	4000	Maximum Frequency (Note 3) 4000 mc
Minimum Frequency (Note [1])	3	Minimum Frequency (Note 3) 2000 mc
Minimum Frequency (Note [2])	2000	Minimum Frequency (Note 3) 2000 mc
Minimum Transmission Loss at Grid Bias = [1]	-67	Minimum Transmission Loss at Grid Bias = -67 volts 10 db
Minimum Transmission Loss at Grid Bias = [2]	10	Minimum Transmission Loss at Grid Bias = -67 volts 10 db
Control grid to all other elements	22	Control grid to all other elements 22 ppfd
Maximum Tube Temperature	177	Maximum Tube Temperature 177 °cC
Center Frequency	3000	Center Frequency 3000 mc
Anode Voltage (Note [1])	1 V	Anode Voltage (Note 1) 7500 volts
Anode Voltage (Note [2])	7500 V	Anode Voltage (Note 1) 7500 volts
Cathode Current	1.8 A	Cathode Current 1.8 amperes peak
Power Output (at center frequency)	1.8 kW	Power Output (at center frequency) 1.8 kw peak
Bandwidth [1]	20	Bandwidth 2,0to 4.0 kmc
Bandwidth [2]	4	Bandwidth 2,0to 4.0 kmc
Gain (Note [1])	4	Gain (Note 4) 30 db
Gain (Note [2])	30	Gain (Note 4) 30 db
Pulse Width	10	Pulse Width 10 p seconds
Grid Bias (for cut-off)	-100	Grid Bias (for cut-off) -100 wvolts
Grid Voltage during Pulse (Note [1])	6 V	Grid Voltage during Pulse (Note 6) +300 wvolts
Grid Voltage during Pulse (Note [2])	300 V	Grid Voltage during Pulse (Note 6) +300 wvolts
Grid Current during Pulse	200 mA	Grid Current during Pulse 0.2 ampere peak
Note	1 V	Note 1: All voltages shown are with respect to cathode. Anode and collector
Note	2	Note 2: Conduction cooling for the collector must be provided by a suitable

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Note [1]	3 W	Note 3: Useful gain and power output exists below 2000 mc and above 4000 mc
Note [2]	2000 W	Note 3: Useful gain and power output exists below 2000 mc and above 4000 mc
Note [3]	4000 W	Note 3: Useful gain and power output exists below 2000 mc and above 4000 mc
Note [1]	4 W	Note 4: This gain is obtained over the 2.0 to 4. 0 kmc bandwidth at the power
Note [2]	2 W	Note 4: This gain is obtained over the 2.0 to 4. 0 kmc bandwidth at the power
Note [3]	4 W	Note 4: This gain is obtained over the 2.0 to 4. 0 kmc bandwidth at the power
Note [4]	0 W	Note 4: This gain is obtained over the 2.0 to 4. 0 kmc bandwidth at the power
signal gain will be approximately	10	signal gain will be approximately 10 db higher,
Note	5 V	Note 5: Positive voltage must not be applied to the grid in the absence of
Note	6 V	Note 6: The positive grid voltage pulse should be the minimum consistent
Note	7	Note 7: Mismatch up to and including a short circuit in input or output lines
([1]	1 V	(1) Heater warm up of 2 minutes before applying high voltage is recommended.
([2]	2 V	(1) Heater warm up of 2 minutes before applying high voltage is recommended.
(	2 V	(2) High voltage must not be applied in the absence of proper grid bias and
Published value	1	1 watt input
Published value [1]	700	700 // . 1 watt input \\\
Published value [2]	1	700 // . 1 watt input \\\
Published value [1]	2	2-1/16 dia. max. Collector
Published value [2]	-1	2-1/16 dia. max. Collector
Published value [3]	16	2-1/16 dia. max. Collector
~—	510	~—.510 dia. max, Output
G Grid [1]	15	G Grid 15+1/4 Green
G Grid [2]	1	G Grid 15+1/4 Green

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
G Grid [3]	4	G Grid 15+1/4 Green
H Heater [1]	15	H Heater 15+1/4 Brown
H Heater [2]	1	H Heater 15+1/4 Brown
H Heater [3]	4	H Heater 15+1/4 Brown
Green Yellow K Heater-Cathode [1]	15	Green Yellow K Heater-Cathode 15zx1/4 Yellow
Green Yellow K Heater-Cathode [2]	4	Green Yellow K Heater-Cathode 15zx1/4 Yellow