



ELECTRONIC TUBE REFERENCE

F6867

Specialized - Traveling Wave electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRAVELINGWAVE

8–9.6 GHz traveling-wave amplifier designed for broadband microwave amplification, providing about 30 dB small-signal 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

SECTION 1 TravelingWave

No fixed ratings recorded.

Published maximum ratings and characteristics audited; remaining numeric data retained densely in parameter table.

The F6867 is a low-power continuous-wave traveling-wave amplifier with high gain, a metal envelope, and a 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
gain and [1]	8000 MHz	gain and 8000 to 9600 mc frequency range. It is constructed in a rugged
gain and [2]	9600 MHz	gain and 8000 to 9600 mc frequency range. It is constructed in a rugged
Heater Voltage [1]	6.3 V	Heater Voltage 6.3 (x10%) volts
Heater Voltage [2]	0 V	Heater Voltage 6.3 (x10%) volts
Heater current	850 mA	Heater current 0.85 amperes
Maximum Anode Voltage (Note [1])	1 V	Maximum Anode Voltage (Note 1) 1500 volts
Maximum Anode Voltage (Note [2])	1500 V	Maximum Anode Voltage (Note 1) 1500 volts
Maximum Shell Current (Note [1])	2 A	Maximum Shell Current (Note 2 and Note 6) 3 ma
Maximum Shell Current (Note [2])	6 A	Maximum Shell Current (Note 2 and Note 6) 3 ma
Maximum Shell Current (Note [3])	3 A	Maximum Shell Current (Note 2 and Note 6) 3 ma
Maximum Collector Voltage (Note [1])	3 V	Maximum Collector Voltage (Note 3) 1600 volts
Maximum Collector Voltage (Note [2])	1600 V	Maximum Collector Voltage (Note 3) 1600 volts
Maximum Collector Dissipation {(Note [1])}	4 W	Maximum Collector Dissipation {(Note 4) 25 watts
Maximum Collector Dissipation {(Note [2])}	25 W	Maximum Collector Dissipation {(Note 4) 25 watts
Maximum Control Electrode Voltage (Note [1])	5 V	Maximum Control Electrode Voltage (Note 5) -250 volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Control Electrode Voltage (Note [2])	-250 V	Maximum Control Electrode Voltage (Note 5) -250 volts
Maximum Frequency	9600 MHz	Maximum Frequency 9600 mc
Minimum Frequency	8000 MHz	Minimum Frequency 8000 mc
Maximum Glass Temperature	1600	Maximum Glass Temperature 1600C
Anode Voltage	1400 V	Anode Voltage 1400 wvolts
Shell Current	2 A	Shell Current 2 ma
Collector Voltage	1500 V	Collector Voltage 1500 wvolts
Collector Current	8 A	Collector Current 8 ma
Control Electrode Voltage (Note [1])	5 V	Control Electrode Voltage (Note 5) -15 volts
Control Electrode Voltage (Note [2])	-15 V	Control Electrode Voltage (Note 5) -15 volts
Power Output	100 W	Power Output 100 milliwatts
Bandwidth [1]	8 MHz	Bandwidth 8.0t0 9.6 kmc
Bandwidth [2]	9.6 MHz	Bandwidth 8.0t0 9.6 kmc
Gain over Bandwidth (Small Signal)	30	Gain over Bandwidth (Small Signal) 30 db min.
Gain over Bandwidth (Power)	25 W	Gain over Bandwidth (Power) 25 db min.
Beam	1	Beam 1.0
Note	1 V	Note 1: All voltages shown are with respect to cathode. Anode and helix are
Note	2 A	Note 2: The shell current is the difference between the cathode current and
current exceeds	3 V	current exceeds 3 ma, high voltage is removed.
Note [1]	3	Note 3: It is generally desirable to operate the collector at 100 volts positive
Note [2]	100	Note 3: It is generally desirable to operate the collector at 100 volts positive
Note	4	Note 4: Forced air cooling of collector is required for average collector
power in excess of	10 W	power in excess of 10 watts. As the collector power is increased,
Note	5 V	Note 5: The control electrode voltage is adjusted for maximum beam trans-
([1]	2 V	(2) Turn on cooling air, solenoid voltage (adjust to approximately 1300 gauss),

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
([2]	1300 V	(2) Turn on cooling air, solenoid voltage (adjust to approximately 1300 gauss),
(	3 V	(3) Raise high voltage to desired value, adjusting solenoid voltage and control
to exceed	3 A	to exceed 3 ma shell current. It may be necessary to rotate the tube in
(	4	(4) The above procedure is not required after initial set up; however, heater
applying high voltage. Observance of the	3 V	applying high voltage. Observance of the 3 ma maximum limit on shell
Published value [1]	8 A	8 20 collector current with shell
Published value [2]	20 A	8 20 collector current with shell
current less than	3 A	current less than 3 ma,.
Published value [1]	0 MHz	0 for maximum gain at f = 9. 0 kmc
Published value [2]	9 MHz	0 for maximum gain at f = 9. 0 kmc
Published value [3]	0 MHz	0 for maximum gain at f = 9. 0 kmc
Z8	30	Z8 30l Gain
Heater-Cathode A %) [1]	15	Heater-Cathode A %) 15/16
Heater-Cathode A %) [2]	16	Heater-Cathode A %) 15/16

TUBE TINKER

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