



ELECTRONIC TUBE REFERENCE

1D7G

Voltage - Radio Detector Converter electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

HEPTODE

Battery or receiving-tube frequency converter combining local-oscillator and mixer action for superheterodyne radio service. Its multi-grid structure provides frequency conversion while minimizing component count and, in battery types, filament power.

GENERAL CHARACTERISTICS

BASE DESIGNATION	G-7Z	BASE PINS	8
NOMINAL HEATER	2 V / 60 mA	PARALLEL HEATER	– / –
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Heptode	
PLATE RESISTANCE	400000 Ω
TRANSCONDUCTANCE	0.000275 S
MAXIMUM PLATE VOLTAGE	180 V
MAXIMUM SCREEN VOLTAGE	67.5 V
MAXIMUM CATHODE CURRENT	9 mA
Conversion conductance promoted; static oscillator-grid-to-anode transconductance retained as parameter.	

Directly heated pentagrid converter for frequency-converter service.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1937 Raytheon Radio Receiving Tubes

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

1937 RAYTHEON RADIO RECEIVING TUBES

Section 1 · Heptode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum grid 2 voltage	135 V	—
Maximum grid 2 supply voltage	180 V	ThroughSeriesResistor
Minimum grid 4 bias	-3 V	—
Plate voltage	135 V	FrequencyConverter
Screen voltage	67.5 V	FrequencyConverter
Grid 2 voltage	135 V	FrequencyConverter
Grid 4 bias	-3 V	FrequencyConverter
Oscillator grid resistor	50000 ohm	FrequencyConverter
Plate current	1.2 mA	PlateVoltage=135V
Screen current	2.5 mA	PlateVoltage=135V
Grid 2 current	2.3 mA	PlateVoltage=135V
Oscillator grid current	0.2 mA	PlateVoltage=135V
Total cathode current	6.2 mA	PlateVoltage=135V
Plate voltage	180 V	FrequencyConverter
Plate current	1.3 mA	PlateVoltage=180V

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	0.4 MOhm	PlateVoltage=135V
Conversion transconductance	275 uS	PlateVoltage=135V
Conversion transconductance	300 uS	PlateVoltage=180V
Oscillator-section transconductance	425 uS	NotOscillating

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

195X General Electric Essential Characteristics

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

195X GENERAL ELECTRIC ESSENTIAL CHARACTERISTICS

Section 1 · Heptode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	180 V	—
Maximum screen-grid voltage	67.5 V	—
Oscillator grid current	0.2 mA	Converter
Oscillator grid resistor	50000 Ohm	Converter
Plate voltage	180 V	Converter
Screen-grid voltage	67.5 V	Converter
Control-grid voltage	-3 V	Converter
Plate current	1.3 mA	Converter
Screen-grid current	2.4 mA	Converter
Plate resistance	500000 Ohm	Converter
Conversion transconductance	300 uS	Converter
Oscillator plate voltage	180 V	Converter

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1961 Tung Sol

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

1961 TUNG SOL

Section 1 · Heptode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Filament Voltage	2 V	Nominal
Filament Current	60 mA	Nominal
OscillatorAnodeVoltage	135 V	—
OscillatorAnodeSupplyVoltage	180 V	—
Control Grid Voltage	-3 V	—
Total Cathode Current	9 mA	—
Plate Voltage	135 V	ConverterService;PlateVoltage=135V
Screen Voltage	67.5 V	ConverterService;PlateVoltage=135V
OscillatorAnodeVoltage	135 V	ConverterService;PlateVoltage=135V
OscillatorAnodeSupplyVoltage	135 V	ConverterService;PlateVoltage=135V
Control Grid Voltage	-3 V	ConverterService;PlateVoltage=135V
Oscillator Grid Resistor	50000 ohm	ConverterService;PlateVoltage=135V
Plate Current	1.2 mA	ConverterService;PlateVoltage=135V
Screen Current	2.5 mA	ConverterService;PlateVoltage=135V
OscillatorAnodeCurrent	2.3 mA	ConverterService;PlateVoltage=135V
Oscillator Grid Current	0.2 mA	ConverterService;PlateVoltage=135V
Total Cathode Current	6.2 mA	ConverterService;PlateVoltage=135V
Plate Voltage	180 V	ConverterService;PlateVoltage=180V
Screen Voltage	67.5 V	ConverterService;PlateVoltage=180V
OscillatorAnodeVoltage	135 V	ConverterService;PlateVoltage=180V
OscillatorAnodeSupplyVoltage	180 V	ConverterService;PlateVoltage=180V
Control Grid Voltage	-3 V	ConverterService;PlateVoltage=180V
Oscillator Grid Resistor	50000 ohm	ConverterService;PlateVoltage=180V
Plate Current	1.3 mA	ConverterService;PlateVoltage=180V
Screen Current	2.4 mA	ConverterService;PlateVoltage=180V
OscillatorAnodeCurrent	2.3 mA	ConverterService;PlateVoltage=180V
Oscillator Grid Current	0.2 mA	ConverterService;PlateVoltage=180V
Total Cathode Current	6.2 mA	ConverterService;PlateVoltage=180V

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance	400000 ohm	ConverterService;PlateVoltage=135V
Conversion Conductance	275 uS	ConverterService;PlateVoltage=135V
Plate Resistance	500000 ohm	ConverterService;PlateVoltage=180V
Conversion Conductance	300 uS	ConverterService;PlateVoltage=180V
Oscillator Transconductance	425 uS	StaticOscillatorSectionNotOscillating

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
ControlGridToPlateCapacitance	0.26 pF	WithShield
ControlGridToOscillatorGridCapacitance	0.11 pF	WithShield
ControlGridToAnodeGridCapacitance	0.32 pF	WithShield
OscillatorGridToAnodeGridCapacitance	1.2 pF	WithShield
RF Input Capacitance	10 pF	WithShield
Oscillator Input Capacitance	4.8 pF	WithShield
OscillatorOutputCapacitance	5.5 pF	WithShield
MixerOutputCapacitance	14 pF	WithShield

TUBE TINKER

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and their source documents.

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