

ELECTRONIC TUBE REFERENCE

6AK5W

Voltage Pentode - Sharp Cutoff (single) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
PENTODE

Ruggedized special-quality sharp-cutoff pentode for wideband radar, RF, and IF amplification in military and airborne equipment.

GENERAL CHARACTERISTICS

BASE DESIGNATION	7BD	BASE PINS	7
NOMINAL HEATER	6.3 V / 175 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

7BD - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – G1	A	G1 – Control Grid	CONNECTED
PIN2 – G3	A	G3 – Suppressor Grid	CONNECTED
PIN2 – IS	A	IS – Internal Screen	CONNECTED
PIN2 – K	A	K – Cathode	CONNECTED
PIN3 – H	–	H – Heater	CONNECTED
PIN4 – H	–	H – Heater	CONNECTED
PIN5 – P	A	P – Plate (Anode)	CONNECTED
PIN6 – G2	A	G2 – Screen Grid	CONNECTED
PIN7 – G3	A	G3 – Suppressor Grid	CONNECTED
PIN7 – IS	A	IS – Internal Screen	CONNECTED
PIN7 – K	A	K – Cathode	CONNECTED

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	340000 Ω
TRANSCONDUCTANCE	0.005 S
MAXIMUM PLATE VOLTAGE	120 V
MAXIMUM SCREEN VOLTAGE	120 V
MAXIMUM PLATE DISSIPATION	1.65 W
MAXIMUM SCREEN DISSIPATION	0.55 W
MAXIMUM CATHODE CURRENT	20 mA
<i>Promoted only from clearly identified printed ratings/characteristics; additional published operating points retained in TUBE_SECTION_PARAMETER.</i>	

Ruggedized sharp-cutoff miniature pentode characterized by low heater power, high transconductance and low capacitances for high-frequency wide-band radar and IF service in military and industrial airborne equipment.

SOURCE OPERATING CONDITIONS

1958 Compagnie General

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

1958 COMPAGNIE GENERAL

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Operating Frequency Maximum	400 MHz	—
Plate Resistance	500000 ohm	—
Transconductance	5100 uS	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Dissipation	1.65 W	—

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

195X Raytheon Special Purpose Tubes

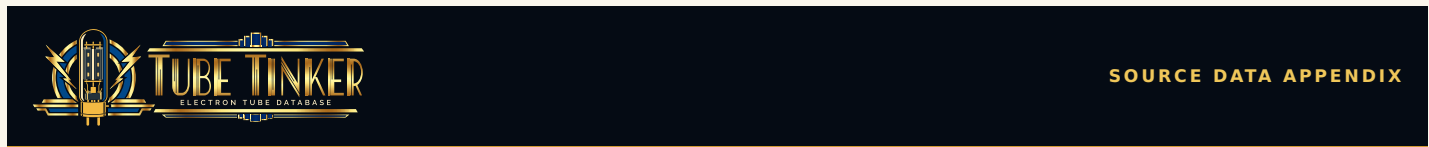
Published test conditions and operating points. Values on this page are preserved as reported by this source.

195X RAYTHEON SPECIAL PURPOSE TUBES

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Control-grid voltage	-2 V	RF Amplifier
Plate voltage	120 V	RF Amplifier
Screen voltage	120 V	RF Amplifier
Plate current	7.5 mA	RF Amplifier
Screen current	2.5 mA	RF Amplifier

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	340000 Ω	Section1
Transconductance	5000 μS	Section1



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1966 Tung Sol Electronic Tubes 3 of 4

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

1966 TUNG SOL ELECTRONIC TUBES 3 OF 4

Section 1 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	340000 ohm	PromotedValue
Transconductance	0.0051 A/V	PromotedValue
HEATER VOLTAGE – published value 1	6 VOLTS	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
HEATER VOLTAGE – published value 2	1 VOLTS	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
NEATER VOLTAGE	6 VOLTS	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
NEATER CURRENT	0.175 AMP	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
PLATE VOLTAGE	120 VOLT	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
GRID 1F2 VOLTAGE – published value 1	2 VOLTS	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
GRID 1F2 VOLTAGE – published value 2	120 VOLTS	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
CATHODE BIAS RESISTOR B	200 OHMS	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
PLATE RESISTANCE (APPROX.)	4 MEGOHM	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
TRANSCONDUCTANCE	5000	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
PLATE CURRENT	7.5 mA	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
GRID-TO-HEATER CURRENT – published value 1	2 mA	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
GRID-TO-HEATER CURRENT – published value 2	2.5 mA	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
GRID-TO-HEATER VOLTAGE (APPROX.), Ip=10 µA – published value 1	10	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
GRID-TO-HEATER VOLTAGE (APPROX.), Ip=10 µA – published value 2	-12	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
HEATER CURRENT – published value 1	160 mA	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
HEATER CURRENT – published value 2	190 mA	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
PLATE CURRENT (1) – published value 1	4.5 mAdC	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
PLATE CURRENT (1) – published value 2	11 mAdC	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
TRANSCONDUCTANCE (i) – published value 1	3751 µMHOS	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
TRANSCONDUCTANCE (i) – published value 2	6250 µMHOS	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
SCREEN CURRENT – published value 1	1.3 mAdc	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
SCREEN CURRENT – published value 2	3.2 mAdc	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
PLATE CURRENT (3)	3	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
TRANSCONDUCTANCE (2)D	2	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
GRID CURRENT (2)E	2	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	200 V	PromotedValue
Maximum screen voltage	155 V	PromotedValue
Maximum plate dissipation	1.65 W	PromotedValue
Maximum screen dissipation	0.55 W	PromotedValue
Maximum cathode current	20 mA	PromotedValue
MAXIMUM DC PLATE VOLTAGE	2	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
MAXIMUM OC GRID M2 VOLTAGE – published value 1	2 VOLTS	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
MAXIMUM OC GRID M2 VOLTAGE – published value 2	155 VOLTS	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
MAXIMUM PLATE DISSIPATION	1.65 WATTS	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
MAXIMUM HEATER CATHODE VOLTAGE	130 VOLTS	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
MAXIMUM GRID ,Y2 DISSIPATION – published value 1	2 WATT	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
MAXIMUM GRID ,Y2 DISSIPATION – published value 2	0.55 WATT	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.
MAXIMUM BULB TEMPERATURE	165	OCR table transcription; verify against supplied datasheet layout where multiple columns represent operating conditions.