



ELECTRONIC TUBE REFERENCE

E83F

Voltage Pentode electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

PENTODE

Premium wide-band amplifier pentode documented by Amperex, Philips, Mullard, and other manufacturers. It is intended for professional broadband signal amplification where stable characteristics and special-quality construction are important.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9C12	BASE PINS	9
NOMINAL HEATER	6.3 V / 300 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Pentode	
PLATE RESISTANCE	500000 Ω
TRANSCONDUCTANCE	0.009 S
MAXIMUM PLATE VOLTAGE	210 V
MAXIMUM SCREEN VOLTAGE	210 V
MAXIMUM PLATE DISSIPATION	2.1 W
MAXIMUM SCREEN DISSIPATION	0.35 W
MAXIMUM GRID DISSIPATION	0.05 W
MAXIMUM CATHODE CURRENT	16 mA
<i>Pentode section; values semantically promoted from published characteristics/maximum-ratings tables where present.</i>	

E83F is listed in the supplied Amperex material as a wide-band premium amplifier pentode. Published ratings and characteristics were captured from the supplied table.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1953 La Radiotechnique

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

1953 LA RADIOTECHNIQUE

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tension de l'anode (pour I_k	550 V	Pentode
Tension de l'anode	210 V	Pentode
Puissance dissipée sur l'anode. Pa	21 W	Pentode
(pour I_k	550 V	Pentode
Tension de la grille 2	210 V	Pentode
Puissance dissipée sur la grille 2 P_{g2}	0.35 W	Pentode
en $s_{000} -V_g$	11 V	Pentode
- V_{oai}	100 V	Pentode
periode)	200 V	Pentode
Puissance dissipée sur la grille 1. Par	50 mW	Pentode
grille 1120220000s a es nn en u_0 » R_{a1}	1 Mohm	Pentode
periode)	8 mA	Pentode
Tension entre cathode et filament V_{kf}	100 V	Pentode
Ronflement. – Avec une resistance de grille R_g	0.5 Mohm	Pentode
Isolement entre la cathode et le filament. – (V_f	6.3 V	Pentode
V_{kt}	15 μA	Pentode



SOURCE OPERATING CONDITIONS

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1958 Amperex Industrial

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

1958 AMPEREX INDUSTRIAL

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	210 V	Published table
Plate voltage	120 V	Published table
Screen voltage	210 V	Published table
Plate current	16 mA	Published table
Power output	34 W	Published table

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	9000 ohm	Published table
Heater/filament voltage	6.3 V	Published rating
Heater/filament current	300 mA	Published rating



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1958 Mullard Receiving Tubes

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

1958 MULLARD RECEIVING TUBES

Section 1 · Pentode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	General industrial high-slope amplifier	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1963 Amperex Condensed

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

1963 AMPEREX CONDENSED

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published rating
Heater current	300 mA	Published rating
Plate resistance	9000 ohm	WideBandAmplifier
Power/output characteristic	34	WideBandAmplifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	120 V	WideBandAmplifier
Screen voltage	210 V	WideBandAmplifier
Plate current	10 mA	WideBandAmplifier



SOURCE OPERATING CONDITIONS

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1963 Philips Electron Tubes Handbook V1a

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

1963 PHILIPS ELECTRON TUBES HANDBOOK V1A

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	210 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Screen voltage	120 V	—
Plate voltage	120 V	ClassA
Plate current	8.3 mA	ClassA

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate current	8.7–11.3 mA	—
Screen current	1.7–2.5 mA	—
Transconductance	7800–10200 μ S	—
Plate resistance	0.3— M Ω m	—
Transconductance	8200 μ S	ClassA



TUBE TINKER
ELECTRON TUBE DATABASE

SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1963 Philips Electron Tubes Handbook V3

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

1963 PHILIPS ELECTRON TUBES HANDBOOK V3

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published heater rating
Heater current	300 mA	Published heater rating
Transconductance	9000 μ S	Published characteristic point
Plate resistance	500000 Ω m	Published characteristic point
Amplification factor	34	Published characteristic point

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	210 V	Published characteristic point
Screen voltage	120 V	Published characteristic point

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate current	10 mA	Published characteristic point
Screen current	2.1 mA	Published characteristic point



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1999 Philips E-Z

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

1999 PHILIPS E-Z

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Life expectancy	0 h	Published datasheet value
Heater voltage V_{ϕ}	6.3 V	Published datasheet value
Anode current I	10 mA	Published datasheet value
Mutual conductance S	9 mA/V	Published datasheet value
Heater voltage V_i	6.3 V	Published datasheet value
Heater current I_e	315 mA	Published datasheet value
Anode voltage V_a	210 V	Published datasheet value
Grid No	0 V	Published datasheet value
Cathode resistor R_y	165 Ω	Published datasheet value
Internal resistance R_y	0.3 M Ω	Published datasheet value
(R.F.) R_{eq}	1000 Ω	Published datasheet value
Anode current I	0.5 mA	Published datasheet value
and cathode $V_i =$	100 V	Published datasheet value
Voltage between electrodes V =	250 V	Published datasheet value
cathode, heater and screen $C_{gl/gzgfikfs}$	10.8 pF	Published datasheet value
Cathode current =	12.1 mA	Published datasheet value
Cathode to heater C_{kf}	4 pF	Published datasheet value
ation period of	10000 h	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No	1 MQ	Published datasheet value
Cathode current I max	16 mA	Published datasheet value
Cathode current peak value I _{kp} max	80 mA	Published datasheet value
Anode current I	8.3 mA	Published datasheet value
Grid No	1.7 mA	Published datasheet value
Mutual conductance S	8.2 mA/V	Published datasheet value
Internal resistance R _i	0.44 MQ	Published datasheet value
Grid No.1 current +I _{g1}	0.3 μA	Published datasheet value
Output power W _{o S0}	870 mW	Published datasheet value
b o et e oo et =	15 V	Published datasheet value
g2 =	750 V	Published datasheet value
(mA)	0 V	Published datasheet value
I Voo =	210 V	Published datasheet value
(ma) Yoga =	120 V	Published datasheet value
Voo =	120 V	Published datasheet value
(ma) Vbgz =	120 V	Published datasheet value
I =	120 V	Published datasheet value
P : " ' = I _o (I _{g1} =	3 μA	Published datasheet value
{l == I _{ga} (I _g =	3 μA	Published datasheet value
' il ~ = ===I _{g2} (I _{g1} =	3 μA	Published datasheet value
T H] ' ,L~ →+ N I _{gr} =	0.3 μA	Published datasheet value
v Vg2 =	120 V	Published datasheet value
(MW ms) Vo3 =	0 V	Published datasheet value
(ha3) Yoz =	120 V	Published datasheet value
Vg3 =	0 V	Published datasheet value
\ I _o =	10 mA	Published datasheet value