

ELECTRONIC TUBE REFERENCE

E90F

Voltage - Pentode Sharp Cutoff (single) electronic tube

CONSOLIDATED TECHNICAL DATA
1 SECTION
CONSTRUCTION
PENTODE

Shock- and vibration-resistant sharp-cutoff high-frequency pentode documented by Amperex and Philips. It combines fixed-gain HF amplification with rugged special-quality construction for demanding professional service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	9
NOMINAL HEATER	6.3 V / 150 mA	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	1300000 Ω
TRANSCONDUCTANCE	0.0046 S
AMPLIFICATION FACTOR	50
MAXIMUM PLATE VOLTAGE	330 V
MAXIMUM SCREEN VOLTAGE	150 V
Special-quality long-life premium pentode for professional high-frequency and amplifier service.	

E90F is listed in the supplied Amperex material as a shock- and vibration-resistant sharp-cutoff HF pentode. Published ratings and characteristics were captured from the supplied table.



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	150 mA	Published rating
Amplification/characteristic value	50	MobileHF
Transconductance	4600 μ S	MobileHF
Plate resistance	1300000 ohm	MobileHF

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	MobileHF
Plate current	7.4 mA	MobileHF
Screen voltage	150 V	MobileHF
Screen current	2.9 mA	MobileHF



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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	250 V	—
Screen voltage	150 V	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate current	2.2–3.6 mA	—
Transconductance	3500–5700 μ S	—
Plate resistance	0.25 M Ω m	—
Cutoff grid voltage	-6.5 V	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate capacitance	3.6–4.8 pF	—
Grid capacitance	4.4–5.6 pF	—



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	150 mA	Published heater rating

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate supply voltage	250 V	MobileHF

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Screen voltage	150 V	MobileHF
Plate current	7.4 mA	MobileHF
Screen current	2.9 mA	MobileHF

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate capacitance	4.2 pF	Published
Input capacitance	5 pF	Published
Grid-to-plate capacitance	0.0035 pF	Published



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
alimentation série ou pa- Ir =	150 mA	Published datasheet value
Chauffage: indirect par C.A. ou C.C. Ve =	6.3 V	Published datasheet value
Ca ') =	-5 pF	Published datasheet value
Cag	0.0035 pF	Published datasheet value
Vg3 =	150 V	Published datasheet value
Vg1 =	4.6 mA	Published datasheet value
Vba =	250 V	Published datasheet value
Vbgz =	0.5 pA	Published datasheet value
Ca!) =	-4.8 pF	Published datasheet value
Cag1') = <	0.0035 pF	Published datasheet value
Ves =	150 V	Published datasheet value
Ve =	4.6 mA	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Vg3 =	2.5 kQ	Published datasheet value
Ia =	101 pA	Published datasheet value
Ve =	5 V	Published datasheet value
Vva =	100 Q	Published datasheet value
Vogz =	0.5 µA	Published datasheet value
s =	4 mA/V	Published datasheet value
Cal) =	-4.8 pF	Published datasheet value
Cag1') = <	6.0035 pF	Published datasheet value
Ia <	3.2 mA/V	Published datasheet value
Vg1 =	1 V	Published datasheet value
Vbgz =	0.5 µA	Published datasheet value
s =	4 mA	Published datasheet value
Life expectancy	1000 h	Published datasheet value
Ve =	63 V	Published datasheet value
Vpa =	250 V	Published datasheet value
Vgs = 0V Ver (k neg) =	135 V	Published datasheet value
Vpge =	150 V	Published datasheet value
Vibrational forces for a period of	32 h	Published datasheet value
Ve =	6.3 V	Published datasheet value
Vgz = 0V Vkr (k neg) =	135 V	Published datasheet value
Vitrational forces for a period of	32 h	Published datasheet value
Vba =	2 kQ	Published datasheet value
Vpgza =	100 Q	Published datasheet value
Ves = ov Ck =	1000 pF	Published datasheet value
Vag = max	600 V	Published datasheet value
Va = max	557 V	Published datasheet value
B = max	15 mA	Published datasheet value
Vg2o = max	100 V	Published datasheet value
Rg; en polarisation fixe max	0.5 MQ	Published datasheet value
Rg1 en polarisation automatique = max	1 MQ	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Vpgz =	100 Q	Published datasheet value
Vag = max,	600 V	Published datasheet value
Wa = max	15 mA	Published datasheet value
Vg2p = max	100 V	Published datasheet value
Rg en polarisation fixe max	0.5 MQ	Published datasheet value
) The value of	135 V	Published datasheet value
La valeur de	135 V	Published datasheet value
Der Wert von	135 V	Published datasheet value
The value of	135 V	Published datasheet value
Vo3=	0 V	Published datasheet value

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