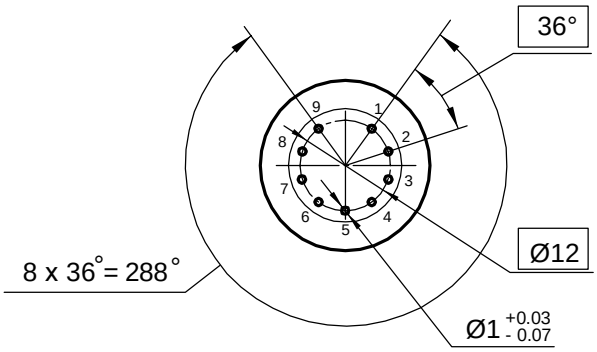
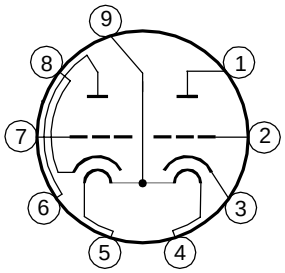
12AT7EH

Vacuum tube 12AT7EH is a miniature twin triode with equipotential cathodes, designed to amplify low frequency voltage in radio engineering devices.

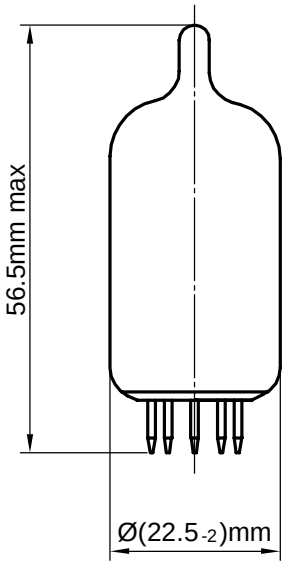
Pin arrangement



Electrode -to - lead connection diagram



Dimensions



Lead designation	Name of electrode
1	Second triode plate
2	Second triode grid
3	Second triode cathode
4,5,9	Heater
6	First triode plate
7	First triode grid
8	First triode cathode

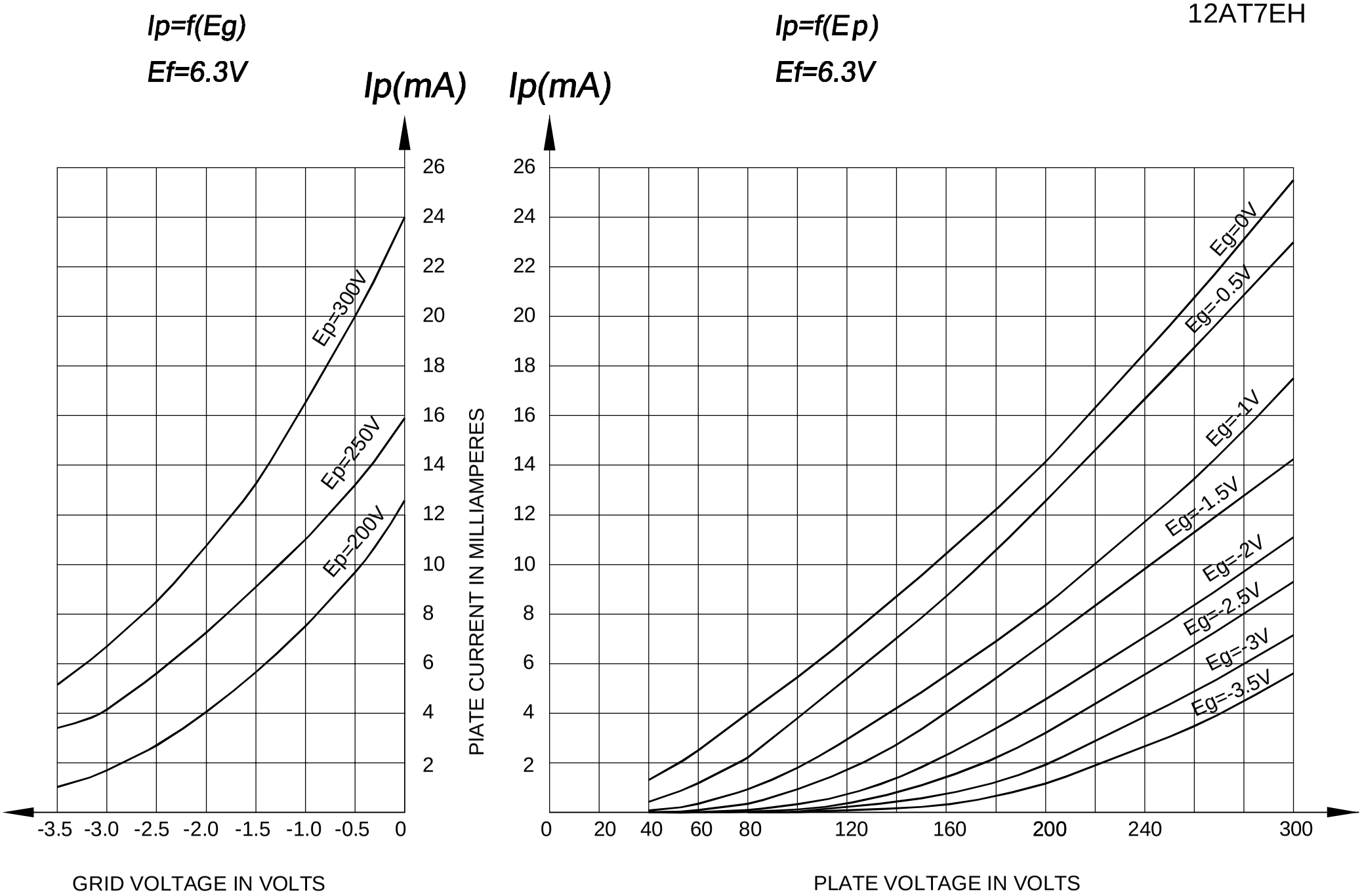
Electrical parameters

Parameters, conditions and units	Nominal	
	min	max
Heater current,mA at: filament voltage 6.3 V at: filament voltage 12.6 V	 350 175	 390 195
Grid back current, µA, (at: filament voltage 6.3 V or 12.6 V, plate voltage 250 V, grid voltage minus 2.0 V, resistance in grid circuit 0.25 MΩ)	—	0.5
Plate current, mA, (at: filament voltage 6.3 V or 12.6 V, plate voltage 250 V, grid voltage minus 2.0 V)	7.0	14.0
First and second triodes plate current difference, % (at: filament voltage 6.3 V or 12.6 V, plate voltage 250 V, grid voltage minus 2.0 V)	—	± 40
Slope of characteristic, mA/V (at: filament voltage 6.3 V or 12.6 V, plate voltage 250 V, grid voltage minus 2.0 V)	4.3	6.5
Amplification factor (at: filament voltage 6.3 V or 12.6 V, plate voltage 250 V, grid voltage minus 2.0 V)	45	—
Cathode - heater insulation resistance, MΩ (at: filament voltage 6.3 V or 12.6 V, cathode - heater voltage ± 200 V)	20	—
Plate current at the beginning of the characteristic, µA (at: filament voltage 6.3 V or 12.6 V, plate voltage 250 V, grid voltage minus 12.0 V)	—	30

Limiting Values

Parameters, units	Nominal	
	min	max
Filament voltage, V for parallel connection for series connection	 6 12	 6.6 13.2
Plate voltage, V	—	330
Cathode - heater voltage, V	—	± 200
Power dissipation at the plate of each triode, W	—	3.25
Cathode current, mA	—	18
Grid circuit resistance for each of the triodes, MΩ fixed bias self - bias	 — —	 0.25 1.0

12AT7EH


Ip=f(Eg)
Ef=6.3V
Ip(mA)
Ep=300V
Ep=250V
Ep=200V
26
24
22
20
18
16
14
12
10
8
6
4
2
-3.5 -3.0 -2.5 -2.0 -1.5 -1.0 -0.5 0
GRID VOLTAGE IN VOLTS
PIATE CURRENT IN MILLIAMPERES
Ip=f(Ep)
Ef=6.3V
Ip(mA)
Eg=0V
Eg=-0.5V
Eg=-1V
Eg=-1.5V
Eg=-2V
Eg=-2.5V
Eg=-3V
Eg=-3.5V
0 20 40 60 80 120 160 200 240 300
PLATE VOLTAGE IN VOLTS