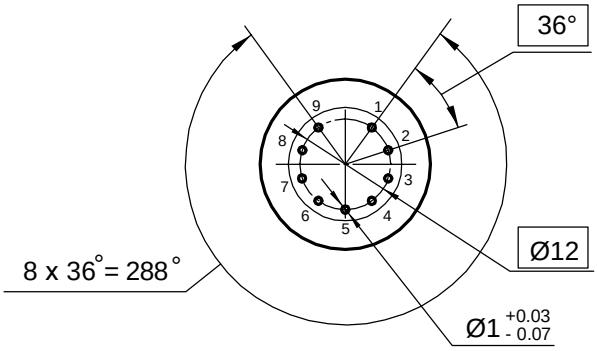
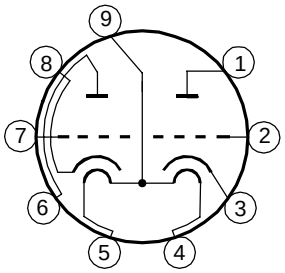
12AU7W/6189 Tung-Sol

Vacuum tube 12AU7W/6189 Tung-Sol is a miniature twin triode with equipotential cathodes, designed to amplify low frequency voltage in radio engineering devices.

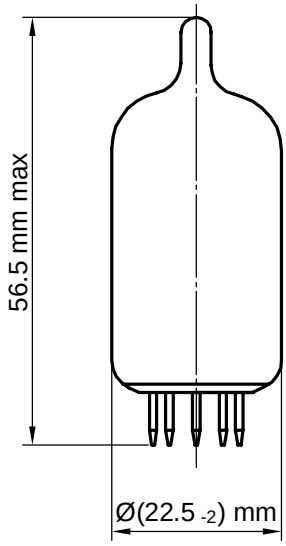
Pin arrangement



Electrode -to - lead connection diagram



Dimensions



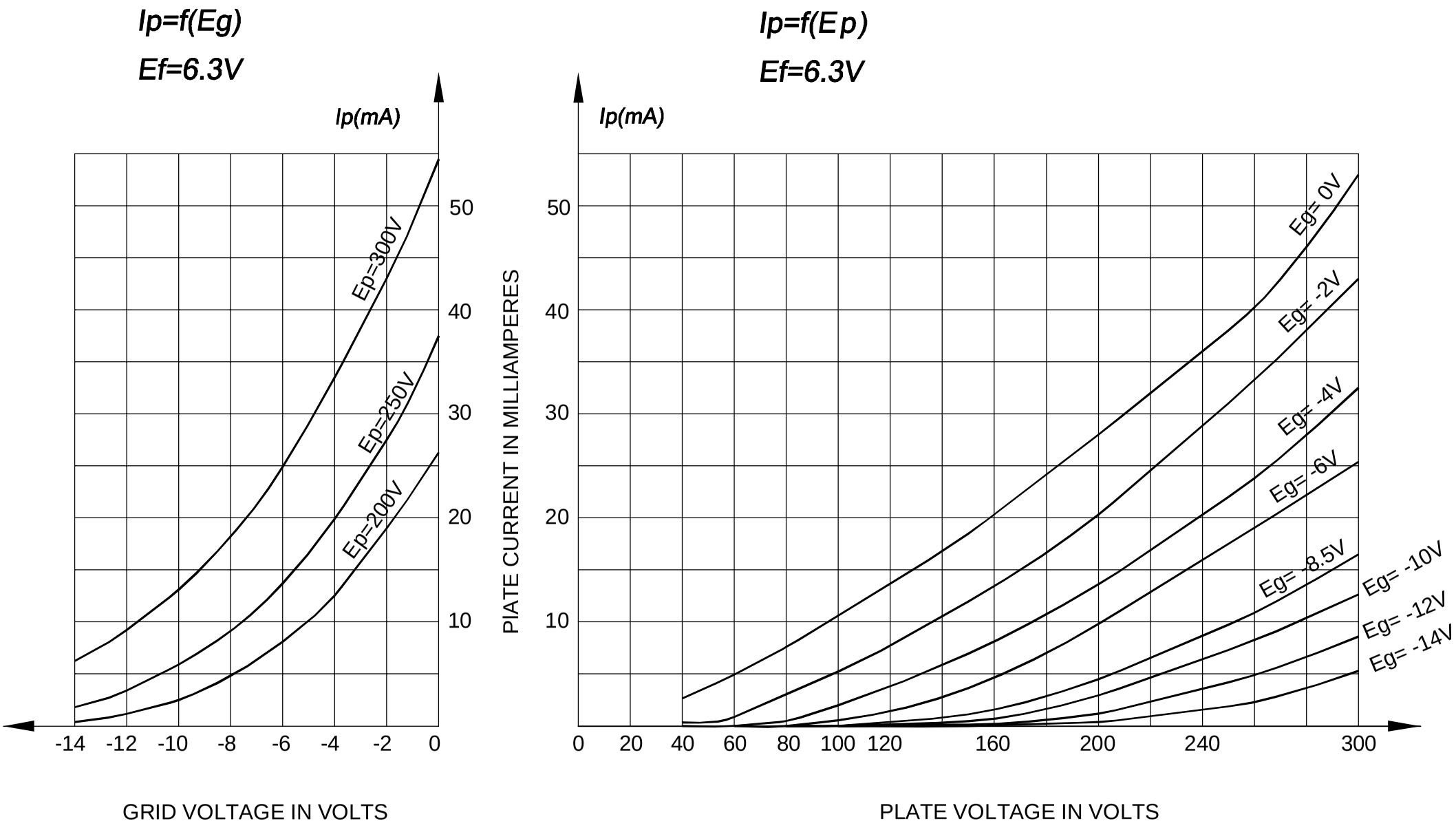
Lead designation	Name of electrode
1	Second triode plate
2	Second triode grid
3	Second triode cathode
4, 5, 9	Heater
6	First triode plate
7	First triode grid
8	First triode cathode

Electrical parameters

Parameters, conditions and units	Nominal	
	min	max
Heater current, mA at: filament voltage 6.3 V at: filament voltage 12.6 V	 300 150	 350 175
Grid reverse current, µA, (at: filament voltage 6.3 V or 12.6 V, plate voltage 250 V, grid voltage minus 8.5 V, resistance in grid circuit 0.25 MΩ)	—	0.2
Plate current, mA, (at: filament voltage 6.3 V or 12.6 V, plate voltage 250 V, grid voltage minus 8.5 V)	7.8	13.0
First and second triodes plate current difference, % (at: filament voltage 6.3 V or 12.6 V, plate voltage 250 V, grid voltage minus 8.5 V)	—	± 15
Slope of characteristic, mA/V (at: filament voltage 6.3 V or 12.6 V, plate voltage 250 V, grid voltage minus 8.5 V)	1.7	3.0
Amplification factor (at: filament voltage 6.3 V or 12.6 V, plate voltage 250 V, grid voltage minus 8.5 V)	13	—
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 25.0 V)	—	50

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	—	300
Cathode - heater voltage, V	—	± 200
Power dissipation at the plate of each triode, W	—	2.75
Cathode current, mA	—	22
Grid circuit resistance for each of the triodes, MΩ fixed bias self - bias	 — —	 0.25 1.0


Ip=f(Eg)
Ef=6.3V
Ip(mA)
Ep=300V
Ep=250V
Ep=200V
50
40
30
20
10
-14
-12
-10
-8
-6
-4
-2
0
GRID VOLTAGE IN VOLTS
PIATE CURRENT IN MILLIAMPERES
Ip=f(Ep)
Ef=6.3V
Ip(mA)
Eg= 0V
Eg= -2V
Eg= -4V
Eg= -6V
Eg= -8.5V
Eg= -10V
Eg= -12V
Eg= -14V
50
40
30
20
10
0
20
40
60
80
100
120
160
200
240
300
PLATE VOLTAGE IN VOLTS