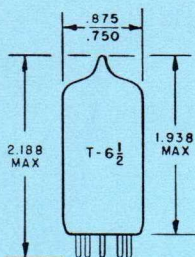
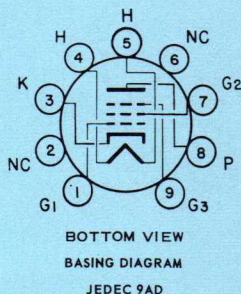


## TUNG-SOL

PENTODE  
MINIATURE TYPE

## SHARP-CUTOFF PENTODE

FOR  
AUDIO PRE-AMPLIFIER  
APPLICATIONSCOATED UNIPOTENTIAL CATHODE  
ANY MOUNTING POSITIONGLASS BULB  
SMALL BUTTON NOVAL  
9 PIN BASE E9-1  
OUTLINE DRAWING  
JEDEC 6-2

THE 5879 IS A SHARP-CUTOFF PENTODE IN THE 9 PIN MINIATURE CONSTRUCTION. IT IS INTENDED FOR USE IN THE INPUT STAGE OF AUDIO AMPLIFIERS. IT COMBINES HIGH GAIN WITH VERY LOW LEVEL OF MICROPHONICS, HUM, AND OTHER AUDIO FREQUENCY NOISES.

## DIRECT INTERELECTRODE CAPACITANCES

|               | PENTODE<br>CONNECTION | TRIODE <sup>A</sup><br>CONNECTION |    |
|---------------|-----------------------|-----------------------------------|----|
| GRID TO PLATE | MAX. 0.11             | 1.4                               | pf |
| INPUT         | 2.7                   | 1.4                               | pf |
| OUTPUT        | 2.4                   | 0.85                              | pf |

<sup>A</sup> GRID 2 AND 3 CONNECTED TO PLATE.

## HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

|                                         |     |       |         |       |
|-----------------------------------------|-----|-------|---------|-------|
| AVERAGE CHARACTERISTICS                 | 6.3 | VOLTS | 150     | MA.   |
| LIMITS OF APPLIED VOLTAGE : AC OR DC    |     |       | 6.3±0.6 | VOLTS |
| MAXIMUM HEATER-CATHODE VOLTAGE:         |     |       |         |       |
| HEATER NEGATIVE WITH RESPECT TO CATHODE |     |       | 100     | VOLTS |
| HEATER POSITIVE WITH RESPECT TO CATHODE |     |       | 100     | VOLTS |

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## TUNG-SOL

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## MAXIMUM RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

|                                    | TRIODE<br>CONNECTION <sup>A</sup> | PENTODE<br>CONNECTION |         |
|------------------------------------|-----------------------------------|-----------------------|---------|
| PLATE VOLTAGE                      | 275                               | 330                   | VOLTS   |
| GRID 3 VOLTAGE                     | -----                             | 0                     | VOLTS   |
| GRID 2 SUPPLY VOLTAGE              |                                   | 330                   | VOLTS   |
| GRID 2 VOLTAGE                     |                                   | See Rating Chart      |         |
| PLATE DISSIPATION                  | 1.7                               | 1.25                  | WATTS   |
| GRID 2 DISSIPATION UP TO 165 VOLTS | -----                             | 0.25                  |         |
| GRID 1 VOLTAGE:                    |                                   |                       |         |
| NEGATIVE BIAS VALUE                | 55                                | 55                    | VOLTS   |
| POSITIVE BIAS VALUE                | 0                                 | 0                     | VOLTS   |
| GRID 1 CIRCUIT RESISTANCE          | 2.2                               | 2.2                   | MEGOHMS |

## AVERAGE CHARACTERISTICS

|                                     | TRIODE<br>CONNECTION <sup>A</sup> |       | PENTODE<br>CONNECTION |            |
|-------------------------------------|-----------------------------------|-------|-----------------------|------------|
| PLATE VOLTAGE                       | 100                               | 250   | 250                   | VOLTS      |
| GRID 3 VOLTAGE                      | -----                             | ----- | 0                     | VOLTS      |
| GRID 2 VOLTAGE                      | -----                             | ----- | 100                   | VOLTS      |
| GRID 1 VOLTAGE                      | -3                                | -8    | -3                    | VOLTS      |
| PLATE CURRENT                       | 2.2                               | 5.5   | 1.8                   | MA.        |
| GRID 2 CURRENT                      | -----                             | ----- | 0.4                   | MA.        |
| TRANSCONDUCTANCE                    | 1,240                             | 1,530 | 1,000                 | $\mu$ MHOS |
| AMPLIFICATION FACTOR                | 21                                | 21    |                       | VOLTS      |
| PLATE RESISTANCE                    | APPROX. .017                      | .137  | 2                     | MEGOHMS    |
| GRID 1 VOLTAGE FOR $I_b = 10 \mu A$ |                                   |       | -8                    | VOLTS      |

<sup>A</sup> GRIDS 2 AND 3 CONNECTED TO PLATE.

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## TUNG-SOL

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## TYPICAL OPERATION

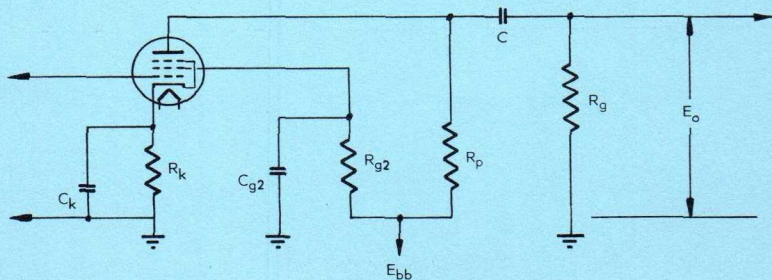
PENTODE CONNECTION

RESISTANCE-COUPLED AMPLIFIER

MAXIMUM VOLTAGE GAIN

| $E_{bb}$ | $R_p$ | $R_g$ | $R_{g2}$ | $R_k$ | $C_{g2}$ | $C_k$ | $C$   | $E_o$ | $V.G.*$ |
|----------|-------|-------|----------|-------|----------|-------|-------|-------|---------|
| 90       | 0.1   | 0.1   | 0.35     | 1700  | 0.044    | 4.6   | 0.020 | 13    | 29      |
|          |       | 0.22  |          |       | 0.046    | 4.5   | 0.012 | 17    | 39      |
|          |       | 0.47  |          |       | 0.047    | 4.4   | 0.006 | 20    | 47      |
|          | 0.22  | 0.22  | 0.80     | 3000  | 0.034    | 3.2   | 0.010 | 15    | 43      |
|          |       | 0.47  |          |       | 0.035    | 3.1   | 0.005 | 21    | 59      |
|          |       | 1.0   |          |       | 0.036    | 3.0   | 0.003 | 24    | 67      |
|          | 0.47  | 0.47  | 1.9      | 7000  | 0.021    | 1.8   | 0.005 | 21    | 59      |
|          |       | 1.0   |          |       | 0.022    | 1.7   | 0.003 | 25    | 75      |
|          |       | 2.2   |          |       | 0.023    | 1.7   | 0.002 | 28    | 87      |
| 180      | 0.1   | 0.1   | 0.35     | 700   | 0.060    | 7.4   | 0.020 | 24    | 39      |
|          |       | 0.22  |          |       | 0.062    | 7.3   | 0.012 | 28    | 56      |
|          |       | 0.47  |          |       | 0.064    | 7.2   | 0.006 | 33    | 65      |
|          | 0.22  | 0.22  | 0.80     | 1200  | 0.045    | 5.5   | 0.010 | 24    | 65      |
|          |       | 0.47  |          |       | 0.046    | 5.3   | 0.005 | 31    | 87      |
|          |       | 1.0   |          |       | 0.048    | 5.2   | 0.003 | 34    | 101     |
|          | 0.47  | 0.47  | 1.9      | 2500  | 0.033    | 3.5   | 0.005 | 27    | 98      |
|          |       | 1.0   |          |       | 0.034    | 3.4   | 0.003 | 32    | 122     |
|          |       | 2.2   |          |       | 0.035    | 3.3   | 0.002 | 37    | 140     |
| 300      | 0.1   | 0.1   | 0.35     | 300   | 0.075    | 10.8  | 0.020 | 25    | 51      |
|          |       | 0.22  |          |       | 0.077    | 10.6  | 0.012 | 32    | 68      |
|          |       | 0.47  |          |       | 0.080    | 10.5  | 0.006 | 35    | 83      |
|          | 0.22  | 0.22  | 0.80     | 600   | 0.056    | 7.9   | 0.010 | 28    | 81      |
|          |       | 0.47  |          |       | 0.057    | 7.5   | 0.005 | 37    | 109     |
|          |       | 1.0   |          |       | 0.058    | 7.4   | 0.003 | 41    | 123     |
|          | 0.47  | 0.47  | 1.3      | 1200  | 0.044    | 5.3   | 0.005 | 35    | 125     |
|          |       | 1.0   |          |       | 0.046    | 5.2   | 0.003 | 42    | 152     |
|          |       | 2.2   |          |       | 0.047    | 5.1   | 0.002 | 48    | 174     |

\* AT AN OUTPUT VOLTAGE OF 1 VOLT RMS AND GRID 1 BIAS OF 1 VOLT.



## TUNG-SOL

CONTINUED FROM PRECEDING PAGE

## RESISTANCE-COUPLED AMPLIFIER

## MAXIMUM VOLTAGE OUTPUT

| $E_{bb}$ | $R_p$ | $R_g$ | $R_{g2}$ | $R_k$ | $C_{g2}$ | $C_k C$ | $E C$ | $E_o$ | V.G. |
|----------|-------|-------|----------|-------|----------|---------|-------|-------|------|
|          |       |       |          |       |          |         |       |       |      |
| 90       | 0.1   | 0.1   | 0.12     | 2000  | 0.09     | 4.8     | 0.027 | 22    | 23   |
|          |       | 0.22  | 0.15     | 2200  | 0.08     | 4.4     | 0.013 | 28    | 32   |
|          |       | 0.47  | 0.17     | 2400  | 0.07     | 4.0     | 0.007 | 31    | 39   |
|          | 0.22  | 0.22  | 0.35     | 3500  | 0.06     | 3.3     | 0.011 | 24    | 33   |
|          |       | 0.47  | 0.40     | 3800  | 0.065    | 3.2     | 0.006 | 30    | 44   |
|          |       | 1.0   | 0.44     | 4100  | 0.06     | 3.0     | 0.003 | 32    | 50   |
|          | 0.47  | 0.47  | 0.90     | 6800  | 0.04     | 2.0     | 0.005 | 25    | 47   |
|          |       | 1.0   | 1.0      | 7400  | 0.04     | 2.0     | 0.003 | 30    | 57   |
|          |       | 2.2   | 1.1      | 8000  | 0.04     | 2.0     | 0.002 | 32    | 64   |
| 180      | 0.1   | 0.1   | 0.19     | 1300  | 0.08     | 6.0     | 0.021 | 48    | 33   |
|          |       | 0.22  | 0.20     | 1400  | 0.08     | 5.85    | 0.013 | 59    | 46   |
|          |       | 0.47  | 0.22     | 1500  | 0.07     | 5.45    | 0.007 | 68    | 57   |
|          | 0.22  | 0.22  | 0.44     | 2000  | 0.09     | 4.85    | 0.011 | 48    | 41   |
|          |       | 0.47  | 0.53     | 2300  | 0.07     | 4.45    | 0.006 | 62    | 62   |
|          |       | 1.0   | 0.55     | 2400  | 0.065    | 4.25    | 0.004 | 68    | 72   |
|          | 0.47  | 0.47  | 1.0      | 3500  | 0.07     | 3.5     | 0.005 | 51    | 54   |
|          |       | 1.0   | 1.1      | 3700  | 0.07     | 3.5     | 0.003 | 59    | 66   |
|          |       | 2.2   | 1.2      | 4000  | 0.07     | 3.3     | 0.002 | 66    | 81   |
| 300      | 0.1   | 0.1   | 0.18     | 1000  | 0.1      | 7.0     | 0.022 | 85    | 38   |
|          |       | 0.22  | 0.2      | 1100  | 0.1      | 6.8     | 0.013 | 110   | 53   |
|          |       | 0.47  | 0.23     | 1200  | 0.075    | 6.4     | 0.007 | 124   | 66   |
|          | 0.22  | 0.22  | 0.47     | 1400  | 0.1      | 5.75    | 0.012 | 88    | 44   |
|          |       | 0.47  | 0.52     | 1600  | 0.1      | 5.45    | 0.006 | 113   | 64   |
|          |       | 1.0   | 0.58     | 1700  | 0.075    | 5.0     | 0.004 | 124   | 86   |
|          | 0.47  | 0.47  | 1.1      | 2300  | 0.1      | 4.6     | 0.006 | 90    | 58   |
|          |       | 1.0   | 1.2      | 2500  | 0.1      | 4.3     | 0.004 | 110   | 76   |
|          |       | 2.2   | 1.3      | 2800  | 0.1      | 4.2     | 0.002 | 121   | 99   |

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## TUNG-SOL

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 TRIODE  
 CONNECTION  
 RESISTANCE-COUPLED AMPLIFIER

## MAXIMUM VOLTAGE GAIN

| $E_{bb}$ | $R_p$ | $R_g$ | $R_k$ | $C_k$ | $C$   | $E_o$ | V.G.            |
|----------|-------|-------|-------|-------|-------|-------|-----------------|
| 90       | 0.047 | 0.047 | 1800  | 2.9   | 0.060 | 9     | 10 <sup>A</sup> |
|          |       | 0.1   | 2100  | 2.4   | 0.033 | 12    | 11 <sup>B</sup> |
|          |       | 0.22  | 2200  | 2.3   | 0.016 | 14    | 12 <sup>C</sup> |
|          | 0.1   | 0.1   | 3200  | 1.8   | 0.027 | 10    | 12 <sup>B</sup> |
|          |       | 0.22  | 3900  | 1.3   | 0.015 | 13    | 13 <sup>C</sup> |
|          |       | 0.47  | 4300  | 1.0   | 0.007 | 16    | 13              |
|          | 0.22  | 0.22  | 6200  | 0.87  | 0.015 | 12    | 13 <sup>B</sup> |
|          |       | 0.47  | 8100  | 0.53  | 0.006 | 16    | 13              |
|          |       | 1.0   | 9000  | 0.49  | 0.003 | 19    | 14              |
| 180      | 0.047 | 0.047 | 1200  | 3.5   | 0.063 | 21    | 12              |
|          |       | 0.1   | 1600  | 2.6   | 0.033 | 29    | 13              |
|          |       | 0.22  | 1800  | 2.4   | 0.016 | 35    | 13              |
|          | 0.1   | 0.1   | 2200  | 1.9   | 0.031 | 26    | 13              |
|          |       | 0.22  | 2900  | 1.35  | 0.015 | 33    | 14              |
|          |       | 0.47  | 3400  | 1.1   | 0.007 | 40    | 14              |
|          | 0.22  | 0.22  | 4500  | 0.92  | 0.015 | 28    | 14              |
|          |       | 0.47  | 6400  | 0.61  | 0.006 | 39    | 14              |
|          |       | 1.0   | 8200  | 0.52  | 0.003 | 47    | 14              |
| 300      | 0.047 | 0.047 | 1100  | 3.9   | 0.063 | 42    | 13              |
|          |       | 0.1   | 1500  | 2.8   | 0.033 | 65    | 13              |
|          |       | 0.22  | 1700  | 2.5   | 0.016 | 71    | 14              |
|          | 0.1   | 0.1   | 2000  | 2.1   | 0.032 | 45    | 15              |
|          |       | 0.22  | 3400  | 1.4   | 0.015 | 74    | 15              |
|          |       | 0.47  | 3700  | 1.1   | 0.007 | 83    | 15              |
|          | 0.22  | 0.22  | 4300  | 0.97  | 0.015 | 50    | 15              |
|          |       | 0.47  | 7200  | 0.63  | 0.007 | 88    | 15              |
|          |       | 1.0   | 7400  | 0.63  | 0.003 | 94    | 15              |

A AT 2 VOLTS (RMS) OUTPUT.

B AT 3 VOLTS (RMS) OUTPUT.

C AT 4 VOLTS (RMS) OUTPUT.

