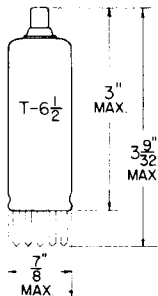


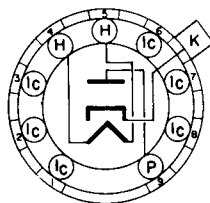
**TUNG-SOL**



**GLASS BULB**  
SKIRTED MINIATURE

DIODE  
MINIATURE TYPE

UNIPOTENTIAL CATHODE  
HEATER  
12.6 VOLTS 0.6±6% AMP.  
AC OR DC  
ANY MOUNTING POSITION



**BOTTOM VIEW**  
SMALL-BUTTON  
9 PIN NOVAL  
9CB

THE 12AF3 IS A SINGLE INDIRECTLY-HEATED DIODE INTENDED FOR USE IN HORIZONTAL FREQUENCY DAMPER SERVICE TELEVISION RECEIVERS. IT IS DESIGNED TO WITHSTAND HIGH VOLTAGE PULSES OF LINE FREQUENCY BETWEEN CATHODE AND BOTH HEATER AND PLATE ELEMENTS SUCH AS NORMALLY ENCOUNTERED IN "DIRECT DRIVE" CIRCUITS.

**DIRECT INTERELECTRODE CAPACITANCES - APPROX.**

|  |     |     |
|--|-----|-----|
| HEATER TO CATHODE H TO C                 | 2.8 | μμf |
| CATHODE TO PLATE AND HEATER K TO (P + H) | 9.0 | μμf |
| PLATE TO CATHODE AND HEATER P TO (K + H) | 6.0 | μμf |

**RATINGS<sup>A</sup>**

INTERPRETED ACCORDING TO DESIGN-MAXIMUM SYSTEM<sup>BC</sup>

|   |      |         |
|---|------|---------|
| HEATER VOLTAGE                          | 12.6 | VOLTS   |
| MAXIMUM HEATER-CATHODE VOLTAGE:         |      |         |
| HEATER NEGATIVE WITH RESPECT TO CATHODE |      |         |
| DC                                      | 1000 | VOLTS   |
| TOTAL DC AND PEAK                       | 4500 | VOLTS   |
| HEATER POSITIVE WITH RESPECT TO CATHODE |      |         |
| DC                                      | 100  | VOLTS   |
| TOTAL DC AND PEAK                       | 300  | VOLTS   |
| MAXIMUM PEAK INVERSE PLATE VOLTAGE      | 4500 | VOLTS   |
| MAXIMUM DC PLATE CURRENT                | 185  | MA.     |
| MAXIMUM STEADY STATE PEAK PLATE CURRENT | 750  | MA.     |
| MAXIMUM PLATE DISSIPATION               | 6.0  | WATTS   |
| MAXIMUM BULB TEMPERATURE                | 210  | °C      |
| HEATER WARM-UP TIME*                    | 11.0 | SECONDS |

CONTINUED ON FOLLOWING PAGE

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## TUNG-SOL

CONTINUED FROM PRECEDING PAGE

## AVERAGE CHARACTERISTICS

TUBE VOLTAGE DROP  
(WITH TUBE CONDUCTING PLATE CURRENT  $\approx$  340 MA.)                      30                      VOLTS

\* HEATER WARM-UP TIME IS DEFINED AS THE TIME REQUIRED FOR THE VOLTAGE ACROSS THE HEATER TO REACH 80% OF ITS RATED VOLTAGE AFTER APPLYING 4 TIMES RATED HEATER VOLTAGE TO A CIRCUIT CONSISTING OF THE TUBE HEATER IN SERIES WITH A RESISTANCE OF VALUE 3 TIMES THE NOMINAL HEATER OPERATING RESISTANCE.

<sup>A</sup> FOR OPERATION IN A 525-LINE, 30-FRAME SYSTEM AS DESCRIBED IN "STANDARDS OF GOOD ENGINEERING PRACTICE FOR TELEVISION BROADCAST STATIONS: FEDERAL COMMUNICATIONS COMMISSION", THE DUTY CYCLE OF THE VOLTAGE PULSE MUST NOT EXCEED 15% OF ONE SCANNING CYCLE.

<sup>B</sup> UNLESS OTHERWISE STATED.

<sup>C</sup> DESIGN-MAXIMUM RATINGS ARE THE LIMITING VALUES EXPRESSED WITH RESPECT TO BOGIE TUBES AT WHICH SATISFACTORY TUBE LIFE CAN BE EXPECTED TO OCCUR. TO OBTAIN SATISFACTORY CIRCUIT PERFORMANCE, THEREFORE, THE EQUIPMENT DESIGNER MUST ESTABLISH THE CIRCUIT DESIGN SO THAT NO DESIGN-MAXIMUM VALUE IS EXCEEDED WITH A BOGIE TUBE UNDER THE WORST PROBABLE OPERATING CONDITIONS WITH RESPECT TO SUPPLY-VOLTAGE VARIATION, EQUIPMENT COMPONENT VARIATION, EQUIPMENT CONTROL ADJUSTMENT, LOAD VARIATION, AND ENVIRONMENTAL CONDITIONS.