



SUBMINIATURE DIODE-PENTODE

DESCRIPTION

The 1AK5 is a filament type diode-pentode of subminiature construction designed for use in applications requiring extreme economy of space, weight, and battery drain. The flexible terminal leads may be soldered or welded directly to the terminals of circuit components without the use of sockets. Standard subminiature sockets may be used by cutting the leads to 0.20" length.

MECHANICAL DATA

ENVELOPE: T-2X3 Glass

BASE: None (0.016" tinned flexible leads. Length: 1.5" min.
Spacing: 0.048" center-to-center)

TERMINAL CONNECTIONS: (Red dot is adjacent to Lead 1)

- | | |
|----------------------|--------------------------------------|
| Lead 1 Pentode Plate | Lead 4 Filament, Negative; Grid #3 ■ |
| Lead 2 Grid #2 | Lead 5 Grid #1 |
| Lead 3 Diode Plate | Lead 6 Filament, Positive; Grid #3 ■ |

MOUNTING POSITION: Any

ELECTRICAL DATA

DIRECT INTERELECTRODE CAPACITANCES: (uufds.) *

- | | |
|---------------------------|-----------|
| Grid to Plate: (g 1 to p) | 0.10 max. |
| Input: g 1 to (f+g 2+g 3) | 2.0 |
| Output: p to (f+g 2+g 3) | 2.7 |

DESIGN CENTER MAXIMUM RATINGS:

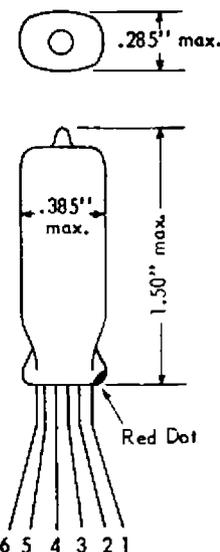
- | | |
|--|------------|
| Filament Voltage (dc) | 1.25 volts |
| Plate Voltage | 90 volts |
| Grid #2 Voltage | 90 volts |
| Total Cathode Current | 1.0 ma. |
| Diode Current for Continuous Operation † | 0.75 ma. |

CHARACTERISTICS AND TYPICAL OPERATION - CLASS A 1 AMPLIFIER:

- | | |
|--|------------|
| Filament Voltage (dc) | 1.25 volts |
| Filament Current | 20 ma. |
| Plate Voltage | 45 volts |
| Grid #2 Voltage | 45 volts |
| Grid #1 Voltage ▲ | 0 volts |
| Plate Resistance | 0.4 meg. |
| Transconductance | 280 umhos |
| Plate Current | 0.5 ma. |
| Grid #2 Current | 0.2 ma. |
| Minimum Diode Current with 10 volts DC † | 1.5 ma. |

CHARACTERISTICS AND TYPICAL OPERATION - RESISTANCE - COUPLED AMPLIFIER:

- | | |
|-----------------------------------|------------|
| Filament Voltage (dc) | 1.25 volts |
| Filament Current | 20 ma. |
| Plate Supply Voltage | 45 volts |
| Grid #2 Supply Voltage | 45 volts |
| Grid #1 Voltage ▲ | 0 volts |
| Load Resistance | 1 meg. |
| Series Grid #2 Resistor | 5 meg. |
| Grid #2 By-Pass Condenser | 0.1 ufd. |
| Grid #1 Resistor (following tube) | 10 meg. |
| Voltage Gain (approx.) | 40 |

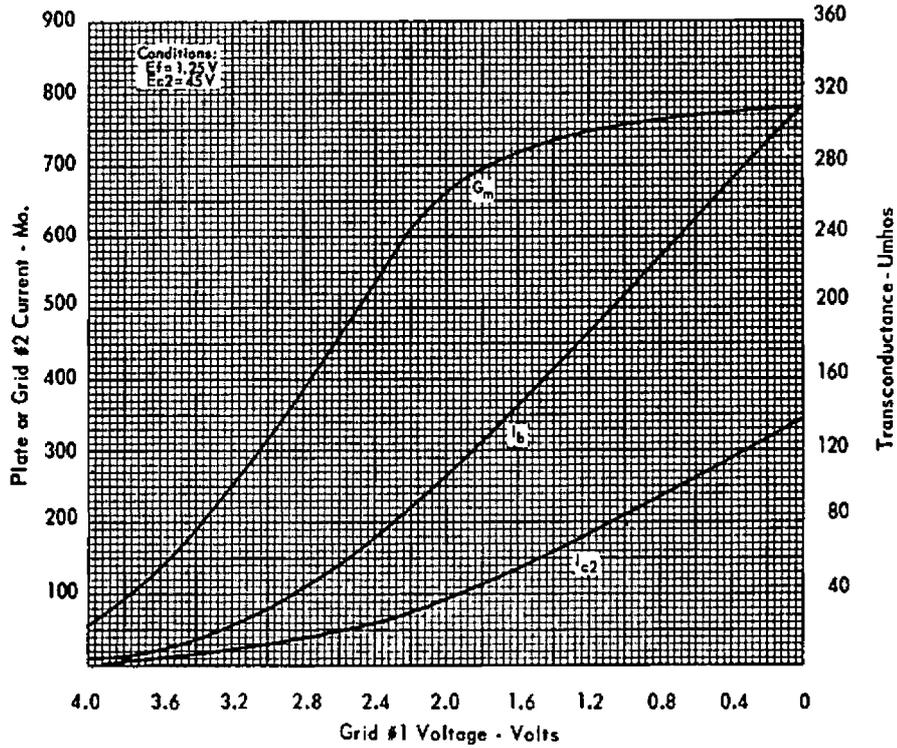


* With close fitting shield connected to lead 4. Values are approx.
 ▲ Grid #1 Resistor = 5 megohms.
 † The diode is located at the negative end of the filament.
 ■ Grid #3 is comprised of two separate deflector plates, one of which is connected to Lead 4 and the other to Lead 6.



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AVERAGE CHARACTERISTICS



AVERAGE PLATE CHARACTERISTICS

