# Twin Diode—Sharp-Cutoff Pentode

## 9-PIN MINIATURE TYPE

### GENERAL DATA

**Electrical:**
- Heater, for Unipotential Cathodes:
  - Voltage (AC or DC) ......... 6.3 ± 10% volts
  - Current ............. 0.45 amp
- Direct Interelectrode Capacitances:
  - Pentode Unit:
    - Grid No.1 to plate ........ 0.02 max. µf
    - Grid No.1 to cathode & grid No.3
      & internal shield, grid No.2,
      and heater .............. 4.8 µf
    - Plate to cathode & grid No.3
      & internal shield, grid No.2,
      and heater .............. 2.6 µf
  - Diode Units:
    - Diode-No.1 plate to cathode
      and heater .............. 1.3 µf
    - Diode-No.2 plate to cathode
      and heater .............. 1.2 µf
    - Pentode grid No.1 to either
      diode plate ............ 0.006 max. µf

### Characteristics, Class A1 Amplifier (Pentode Unit):
- Plate Supply Voltage .......... 250 volts
- Grid-No.2 Supply Voltage ........ 110 volts
- Cathode Resistor ............. 68 ohms
- Plate Resistance (Approx.) .... 0.25 megohm
- Transconductance .......... 5200 µhmhos
- Grid-No.2 Current ........... 3.5 ma
- Plate Current ............ 10 ma
- Grid-No.1 Voltage (Approx.) for
  plate µa = 10 .......... -10 volts

### Mechanical:
- Operating Position ........... Any
- Maximum Overall Length ........ 2-3/16"
- Maximum Seated Length .......... 1-15/16"
- Length, Base Seat to Bulb Top (Excluding tip) .......... 1-9/16" ± 3/32"
- Diameter .................. 0.750" to 0.875"
- Dimensional Outline .......... See General Section
- Bulb ..................... Small-Button Noval 9-Pin (JEDEC No.E9-1)
Basing Designation for BOTTOM VIEW............. 9HK

Pin 1 - Diode
Plate No.2
Pin 2 - Diode Cathode
Plate No.1
Pin 3 - Diode
Pin 4 - Heater
Pin 5 - Heater
Pin 6 - Pentode
Grid No.1
Pin 7 - Pentode
Cathode,
Grid No.3,
Internal
Shield
Pin 8 - Pentode
Grid No.2
Pin 9 - Pentode
Plate

PENTODE UNIT — AMPLIFIER — Class A1

Maximum Ratings, Design—Maximum Values:

PLATE VOLTAGE.......................... 330 max. volts
GRID-No.2 (SCREEN—GRID) SUPPLY VOLTAGE: 330 max. volts
GRID-No.2 VOLTAGE...................... See Grid-No.2 Input Rating Chart
at front of Receiving Tube Section
GRID-No.1 (CONTROL—GRID) VOLTAGE:
Negative-bias value....................... 55 max. volts
Positive-bias value....................... 0 max. volts
GRID-No.2 INPUT:
For grid-No.2 voltages up to 165 volts . 0.55 max. watt
For grid-No.2 voltages between 165
and 330 volts......................... See Grid-No.2 Input Rating Chart
at front of Receiving Tube Section
PLATE DISSIPATION........................ 3 max. watts
PEAK HEATER—CATHODE VOLTAGE:
Heater negative with respect to cathode. 200 max. volts
Heater positive with respect to cathode. 200b max. volts

Maximum Circuit Values:
Grid-No.1—Circuit Resistance:
For fixed-bias operation................ 0.1 max. megohm
For cathode-bias operation.............. 0.5 max. megohm

DIODE UNITS — Two

Values are for Each Unit

Maximum Ratings, Design—Maximum Values:

PLATE CURRENT......................... 5 max. ma
PEAK HEATER—CATHODE VOLTAGE:
Heater negative with respect to cathode. 200 max. volts
Heater positive with respect to cathode. 200b max. volts

Characteristics, Instantaneous Test Condition:
Plate Current for plate volts = 5........ 20 ma

a without external shield.
b The dc component must not exceed 100 volts.