DOUBLE-DIODE-PENTODE
MINIATURE TYPE
COATED UNIPOTENTIAL CATHODE
HEATER
12.6 VOLTS 0.15 AMP.
AC OR DC
ANY MOUNTING POSITION

THE 12F8 IS A COMBINED DOUBLE DETECTOR DIODE AND REMOTE CUT-OFF PENTODE WITH A COMMON UNIPOTENTIAL CATHODE IN THE 9 PIN MINIATURE CONSTRUCTION. THE PENTODE SECTION IS INTENDED FOR USE AS AN AF VOLTAGE AMPLIFIER WHERE THE HEATER, PLATE AND SCREEN GRID POTENTIALS ARE OBTAINED DIRECTLY FROM AN AUTOMOTIVE BATTERY. THE DESIGN OF THIS TYPE PERMITS THE APPLICATION AF AVC VOLTAGE TO THE CONTROL GRID THEREBY IMPROVING OVERALL RECEIVER AVC.

DIRECT INTERELECTRODE CAPACITANCES

INPUT: \((g_1 \text{ to } g_2 + g_3 + h + k)\)
OUTPUT: \((p \text{ to } g_2 + g_3 + h + k)\)
GRID TO PLATE: \((g_1 \text{ to } p)\)
DIODE TO DIODE

\[\begin{align*}
4.5 & \quad \mu\text{uf} \\
3.0 & \quad \mu\text{uf} \\
0.06 & \quad \mu\text{uf} \\
0.3 & \quad \mu\text{uf}
\end{align*}\]

RATINGS
INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

HEATER VOLTAGE 12.6 VOLTS
MAXIMUM HEATER-CATHODE VOLTAGE \(\pm 30\) VOLTS
MAXIMUM PLATE VOLTAGE 30 VOLTS
MAXIMUM GRID \#2 VOLTAGE 30 VOLTS
MAXIMUM POSITIVE DC GRID \#1 VOLTAGE 0 VOLTS
MAXIMUM GRID \#1 CIRCUIT RESISTANCE 10.0 MEGOMS
MAXIMUM AVERAGE DIODE CURRENT \(1\) MA.

* THIS TUBE IS INTENDED TO BE USED IN AUTOMOTIVE SERVICE FROM A NOMINAL 12 VOLT BATTERY SOURCE. THE HEATER IS THEREFORE DESIGNED TO OPERATE OVER THE 10.0 TO 15.9 VOLTAGE RANGE ENCOUNTERED IN THIS SERVICE. THE MAXIMUM RATINGS OF THE TUBE PROVIDE FOR AN ADEQUATE SAFETY FACTOR SUCH THAT THE TUBE WILL WITHSTAND THE WIDE VARIATION IN SUPPLY VOLTAGES.

CONTINUED ON FOLLOWING PAGE
TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

HEATER VOLTAGE 12.6 VOLTS
HEATER CURRENT 0.15 AMP.
PLATE VOLTAGE 12.6 VOLTS
GRID #2 VOLTAGE 12.6 VOLTS
GRID #1 VOLTAGE 0 VOLTS
PLATE CURRENT 1.0 MA.
GRID #2 CURRENT 0.38 MA.
TRANSCONDUCTANCE 1000 μMHO
PLATE RESISTANCE (APPROX.) .33 MEGOHM
GRID #1 VOLTAGE (APPROX.) FOR rM = 40 μMHO -5 VOLTS
AVERAGE DIODE CURRENT WITH 10 VOLTS DC APPLIED 2 MA.

12F8
PENTODE UNIT
E_r = 12.6 Volts
E_c2 = 12.6 Volts
E_c1 = 0

PLATE MILLIAMPERES

0 0.25 0.50 0.75 1.00 1.25

PLATE VOLTS

0 10 20 30 40 50 60
12F8 PENTODE UNIT

$E_f = 12.6$ Volts
$E_b = 12.6$ Volts
$E_{c2} = 12.6$ Volts

- - - $I_b$
- - - $g_m$

GRID #1 VOLTS

PLATE MILLIAMPERES

0.25 0.50 0.75 1.00 1.25 1.250

0 250 500 750 1000

TRANSCONDUCTANCE ($g_m$) - MICROMHOS