THE 38HE7 IS A HIGH-PERFORMANCE DIODE AND A BEAM-POWER PENTODE IN THE T-12 COMPACTRON CONSTRUCTION. THE DIODE IS DESIGNED FOR SERVICE AS THE DAMPING DIODE AND THE PENTODE AS THE HORIZONTAL-DEFLECTION AMPLIFIER IN TELEVISION RECEIVERS.

DIRECT INTERELECTRODE CAPACITANCES
WITHOUT EXTERNAL SHIELD

**DIODE SECTION**

CATHODE TO PLATE AND HEATER: K TO (P + H)  
8.0 pf

PLATE TO CATHODE AND HEATER: P TO (K + H)  
7.0 pf

HEATER TO CATHODE: (H TO K)  
1.6 pf

**PENTODE SECTION**

GRID 1 TO PLATE: (G1 TO P)  
0.38 pf

INPUT: G1 TO (H + K + G2 + G3)  
19 pf

OUTPUT: P TO (H + K + G2 + G3)  
8.0 pf

CONTINUED ON FOLLOWING PAGE
HEATER CHARACTERISTICS AND RATINGS

AVERAGE CHARACTERISTICS 37.8 VOLTS 450 MA.
HEATER WARM-UP TIME APPROX. 11 SECONDS

LIMITS OF SUPPLIED CURRENT 450 ± 30 MA.

HEATER-CATHODE VOLTAGE
HEATER POSITIVE WITH RESPECT TO CATHODE
DC COMPONENT 100 100 VOLTS
TOTAL DC AND PEAK 200 200 VOLTS
HEATER NEGATIVE WITH RESPECT TO CATHODE
DC COMPONENT 500 500 VOLTS
TOTAL DC AND PEAK 4,200 200 VOLTS

RATINGS

HORIZONTAL-DEFLECTION AMPLIFIER SERVICE
DC PLATE-SUPPLY VOLTAGE (BOOST + DC POWER SUPPLY) 500 VOLTS
PEAK POSITIVE PULSE PLATE VOLTAGE 5,000 VOLTS
PEAK NEGATIVE PULSE PLATE VOLTAGE 0 VOLTS
GRID 2 VOLTAGE 150 VOLTS
NEGATIVE DC GRID 1 VOLTAGE 55 VOLTS
PEAK NEGATIVE GRID 1 VOLTAGE 330 VOLTS
PLATE DISSIPATION 10 WATTS
GRID 2 DISSIPATION 3.5 WATTS
GRID 2 DISSIPATION FOR \( P_p \leq 9 \) WATTS 4.0 WATTS
DC CATHODE CURRENT 230 MA.

GRID 1 CIRCUIT RESISTANCE 1.0 MEGOHMS
TV DAMPER SERVICE
PEAK INVERSE PLATE VOLTAGE 4,200 VOLTS
STEADY-STATE PEAK PLATE CURRENT 1,200 MA.
DC OUTPUT CURRENT 200 MA.
BULB TEMPERATURE AT HOTTEST POINT 200 °C

CHARACTERISTICS AND TYPICAL OPERATION

PENTODE SECTION
PLATE VOLTAGE 5,000 50 130 VOLTS
GRID 2 VOLTAGE 130 130 130 VOLTS
GRID 1 VOLTAGE - 0 A -22 VOLTS
PLATE CURRENT - 450 60 MA.
GRID 2 CURRENT - 40 2.8 MA.
TRANSVERSE DISSIPATION - - 8,800 MICROMHOS
TRIODE AMPLIFICATION FACTOR - GRID 2 TIED TO PLATE - - 4.2
GRID 1 VOLTAGE FOR \( I_b = 1.0 \) MA, APPROX. -80 -39 VOLTS

DIODE SECTION
TUBE VOLTAGE DROP FOR \( I_b = 350 \) MAD 21 VOLTS

A - APPLIED FOR SHORT INTERVAL (2 SECONDS MAX.) SO AS NOT TO DAMAGE TUBE.
AVERAGE PLATE CHARACTERISTICS
$E_{c1} = 0$ VOLTS

PLATE MILLIAMPERES

GRID #2 MILLIAMPERES

PLATE VOLTS

AVERAGE TRANSFER CHARACTERISTICS
PENTODE SECTION

$E_b = 130$ VOLTS

GRID #1 VOLTS