This data should be read in conjunction with DEFINITIONS AND GENERAL OPERATIONAL RECOMMENDATIONS—THYRATRONS which precede this section of the handbook.

**PRELIMINARY DATA**

**LIMITING VALUES** (absolute ratings, not design centre)

It is important that these limits are never exceeded and such variations as mains fluctuations, component tolerances and switching surges must be taken into consideration in arriving at actual valve operating conditions.

Max. peak anode voltage
- Inverse: 500 V
- Forward: 500 V

Max. cathode current
- Peak: 100 mA
- Average (max. averaging time 30s): 25 mA
- Surge (fault protection, max. duration 0.1s): 2.0 A

Max. negative control-grid voltage
- Before conduction: 100 V
- During conduction: 10 V

Max. positive control-grid current for anode voltage more positive than -10V
- Peak: 25 mA
- Average (averaging time 1 cycle): 5.0 mA

Max. peak positive control-grid current for anode voltage more negative than -10V: 30 µA

Max. control-grid resistor
- Grid-controlled rectifier service: 10 MΩ
- Stand-by service: 100 kΩ

Recommended minimum control-grid resistor: 5 kΩ

Max. negative shield-grid voltage
- Before conduction: 50 V
- During conduction: 10 V

Max. average positive screen-grid current for anode voltage more positive than -10V: 5.0 mA

Max. peak heater-to-cathode voltage
- Cathode negative: 25 V
- Cathode positive: 100 V

Min. valve heating time: 10 s

Ambient temperature limits: -55 to 90 °C

**Note:** Where circuit conditions permit the shield-grid should be connected directly to the cathode.
CHARACTERISTICS

Electrical

Heater voltage 6.3 V
Heater current at 6.3V 150 mA
Capacitances
\begin{align*}
C_{nh} & = 0.03 \text{ pF} \\
C_{in} & = 2.0 \text{ pF} \\
C_{out} & = 1.5 \text{ pF}
\end{align*}
Control ratio
\begin{align*}
g_1 \text{ to } k, \text{ with } R_{g2} & = 0 \Omega \\
g_2 \text{ to } k, \text{ with } R_{g1} & = 0 \Omega
\end{align*}
Anode voltage drop \( 10 \) V
Recovery (deionisation) time (20μs pulse)
\begin{align*}
V_a & = 500\text{V}, \ \left| I_{k(pk)} \right| = 100\text{mA}. \ \left| V_{g1} \right| = 50\Omega \\
V_{g1} & = -50\text{V}
\end{align*}
Critical grid current at \( V_a = 350\text{V} \) r.m.s. \( 0.5 \) μA

Mechanical

Type of cooling Convection
Mounting position Any

CONTROL CHARACTERISTIC (see page C4)

The curves given indicate the spread in characteristics due to:

(a) Variations in characteristics due to changes in heater voltage.
(b) Variations in characteristics due to changes in grid resistor.
(c) Variation in grid resistor.
RECOVERY TIME PLOTTED AGAINST CONTROL-GRID VOLTAGE

$V_g = 500\,\text{V}$

$I_a (pk) = 100\,\text{mA}$

$V_{g2} = 0\,\text{V}$

$R_{g2} = 0\,\text{kΩ}$

$R_{g1} = 300\,\text{kΩ}$

$50\,\text{kΩ}$

$10\,\text{kΩ}$

$1\,\text{kΩ}$

Recovery time (µs)
CONTROL CHARACTERISTICS

$V_g = -15V$

$V_g = -10V$

$V_g = -5V$

$V_g = 0V$

$V_g = +5V$
OPERATING RANGE OF CRITICAL GRID VOLTAGE
(See Page D2)