# V.H.F. INDUSTRIAL TRIODE

# TY6-3000A

QUICK REFERENCE DATA

Forced-air cooled triode intended for use as Class 'C' industrial oscillator.

| | | |
|---|---|---|
| f | 30 | Mc/s |
| $P_{out}$ | 7.6 | kW |
| f max. | 150 | Mc/s |
| $V_a$ max. | 6.0 | kV |
| $p_a$ max. | 3.0 | kW |

To be read in conjunction with
GENERAL OPERATIONAL RECOMMENDATIONS - TRANSMITTING VALVES

INDUSTRIAL OSCILLATOR, CLASS 'C'

OPERATING CONDITIONS

| | | | |
|---|---|---|---|
| f | 30 | 30 | Mc/s |
| $P_{out}$ | 5.8 | 7.6 | kW |
| $P_{load}$ | 5.0 | 6.7 | kW |
| Duty factor | 1.0 | 1.0 | |
| $\eta_a$ | 77 | 78 | % |
| $V_a$ | 5.0 | 6.0 | kV |
| $I_a$ | 1.5 | 1.63 | A |
| $-V_g$ | 300 | 350 | V |
| $I_g$ | 300 | 310 | mA |
| $R_{g-f}$ | 1.0 | 1.13 | kΩ |
| Feedback ratio $\frac{V_{in(pk)}}{V_{a(pk)}}$ | 0.125 | 0.12 | |
| $P_{drive}$ | 157 | 180 | W |
| $p_a$ | 1.7 | 2.2 | kW |
| $p_g$ | 76 | 84 | W |

RATINGS (ABSOLUTE MAXIMUM SYSTEM)

| | | |
|---|---|---|
| f max. | 150 | Mc/s |
| $V_a$ max. | 7.0 | kV |
| $-V_g$ max. | 1.0 | kV |
| $I_g$ max. | 350 | mA |
| $I_k$ max. | 2.5 | A |
| $i_{k(pk)}$ max. | 15 | A |
| $p_a$ max. | 3.0 | kW |
| $p_g$ max. | 110 | W |
| $R_{g-f}$ max. | 10 | kΩ |

CATHODE

Directly heated, thoriated tungsten

| | | |
|---|---|---|
| $V_f$ | 12.6 | V |
| $I_f$ | 33 | A |

CAPACITANCES

| | | |
|---|---|---|
| $c_{a-g}$ | 24 | pF |
| $c_{out}$ | 0.5 | pF |
| $c_{in}$ | 21 | pF |

CHARACTERISTICS (measured at $V_a$ = 2.5kV, $I_a$ = 0.9A)

| | | |
|---|---|---|
| $g_m$ | 22 | mA/V |
| $\mu$ | 26 | |

MOUNTING POSITION

Vertical, with base up or down

COOLING

Forced-air cooled (see curves on pages C4 and C5)

Maximum temperatures

| | | |
|---|---|---|
| Anode and grid seals | 180 | °C |
| Filament seals | 210 | °C |

The amount of forced-air cooling required for the anode of this valve depends upon the anode dissipation and temperature and pressure of inlet air.

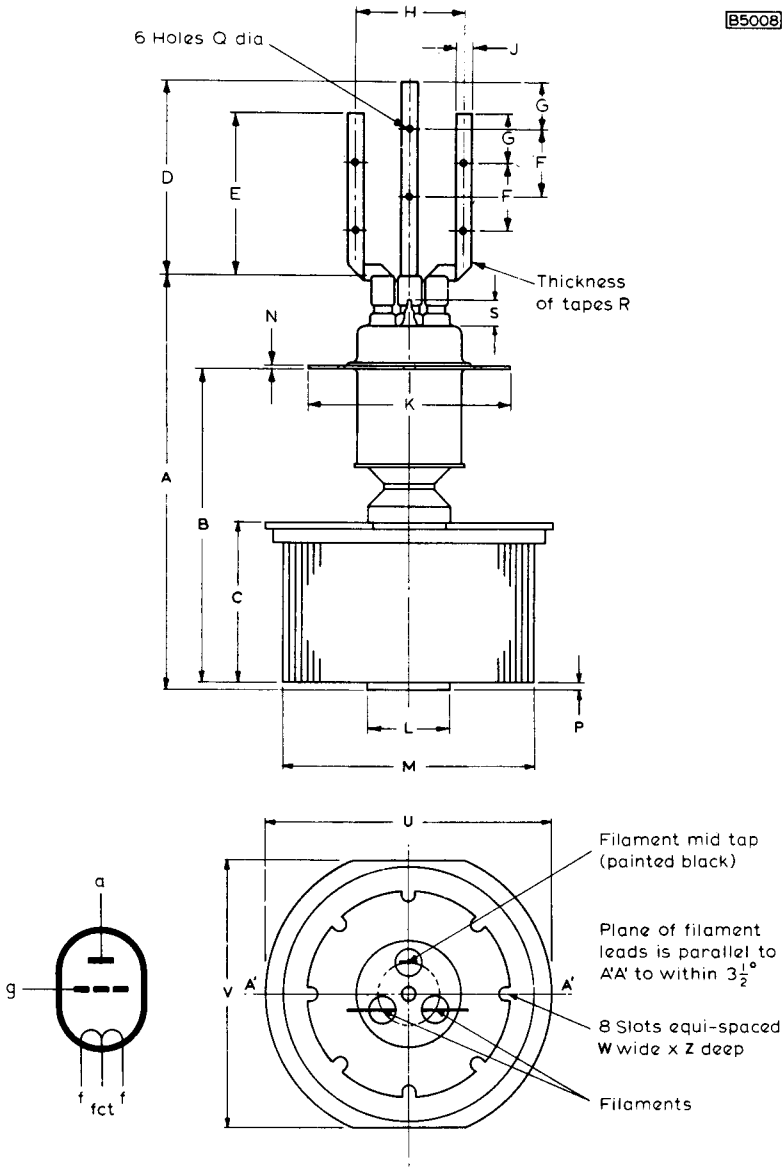
PHYSICAL DATA

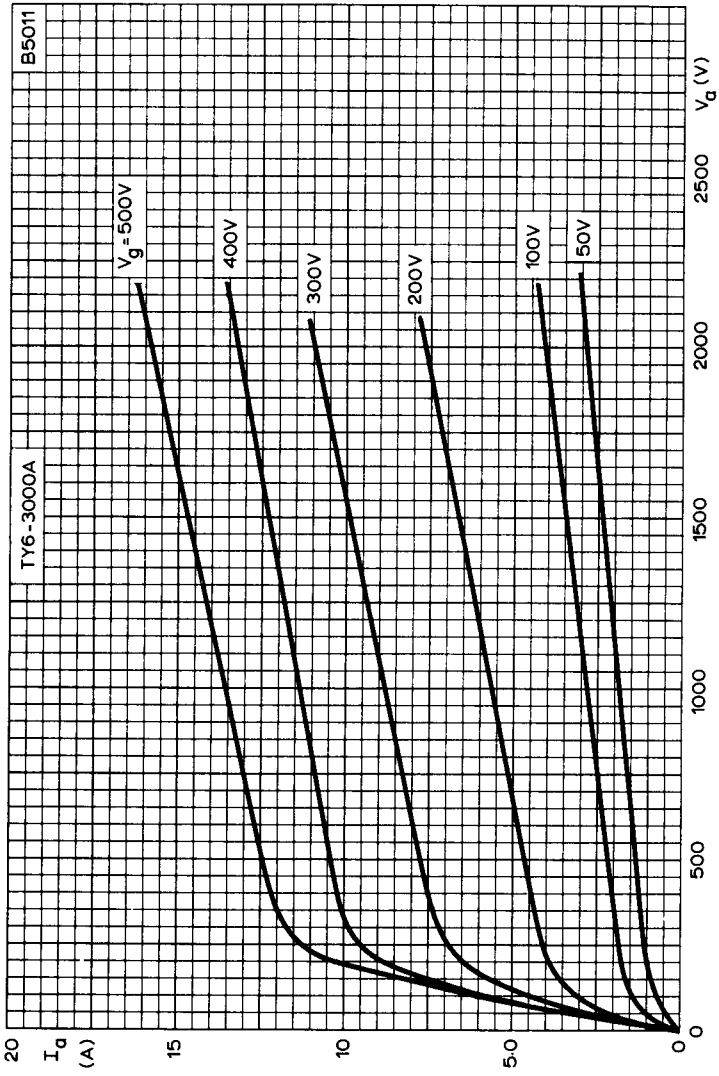
| | lb | kg |
|---|---|---|
| Weight of valve | 8.4 | 3.8 |

DIMENSIONS

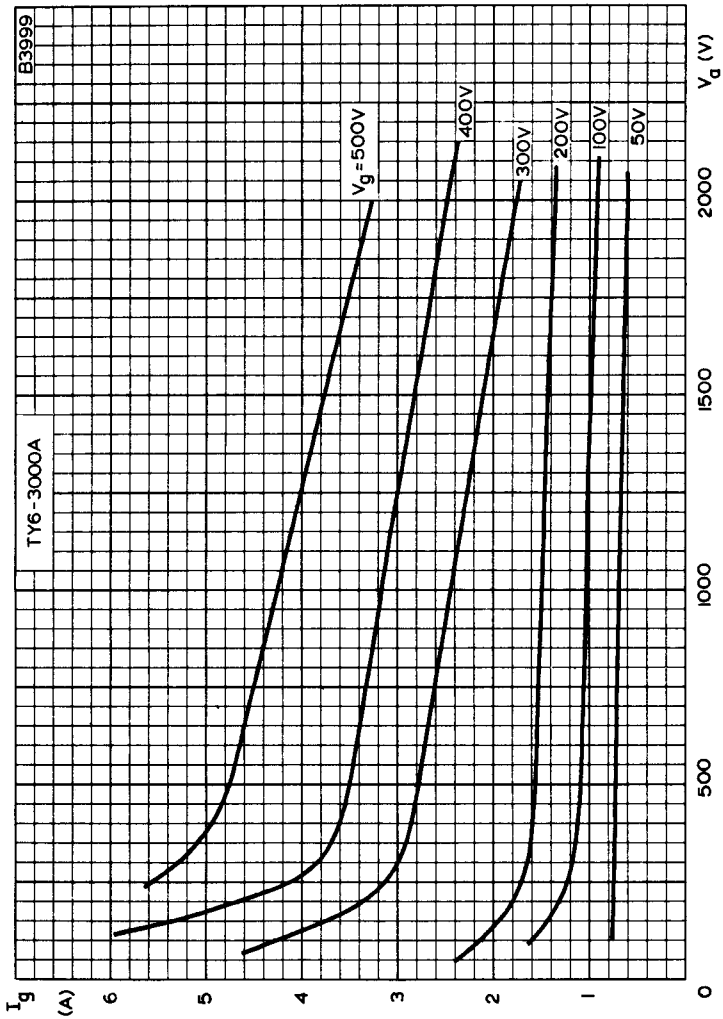
| | Inches | Millimetres | |
|---|---|---|---|
| A | 8.46 | 215 | max. |
| B | 6.075 ± 0.059 | 154.3 ± 1.5 | |
| C | 3.406 ± 0.039 | 86.5 ± 1.0 | |
| D | 4.252 ± 0.078 | 108 ± 2.0 | |
| E | 3.425 ± 0.039 | 88 ± 1.0 | |
| F | 1.378 ± 0.039 | 35 ± 1.0 | |
| G | 0.866 ± 0.078 | 20 ± 2.0 | |
| H | 2.500 | 63.5 | max. |
| J | 0.315 ± 0.019 | 8.0 ± 0.5 | |
| K | 4.567 ± 0.019 | 116 ± 0.5 | dia. |
| L | 1.969 ± 0.008 | 50 ± 0.2 | dia. |
| M | 5.929 ± 0.039 | 150.6 ± 1.0 | dia. |
| N | 0.063 ± 0.007 | 1.6 ± 0.2 | |
| P | 0.178 ± 0.008 | 4.5 ± 0.2 | |
| Q | 0.145 ± 0.002 | 3.70 ± 0.05 | |
| R | 4 x 0.010 | 4 x 0.25 | |
| S | 0.78 | 20 | max. |
| U | 6.512 ± 0.019 | 165.4 ± 0.5 | |
| V | 6.256 ± 0.019 | 158.9 ± 0.5 | |
| W | 0.182 ± 0.004 | 4.62 ± 0.1 | |
| Z | 0.205 ± 0.008 | 5.20 ± 0.20 | |

Inch dimensions derived from original millimetre dimensions

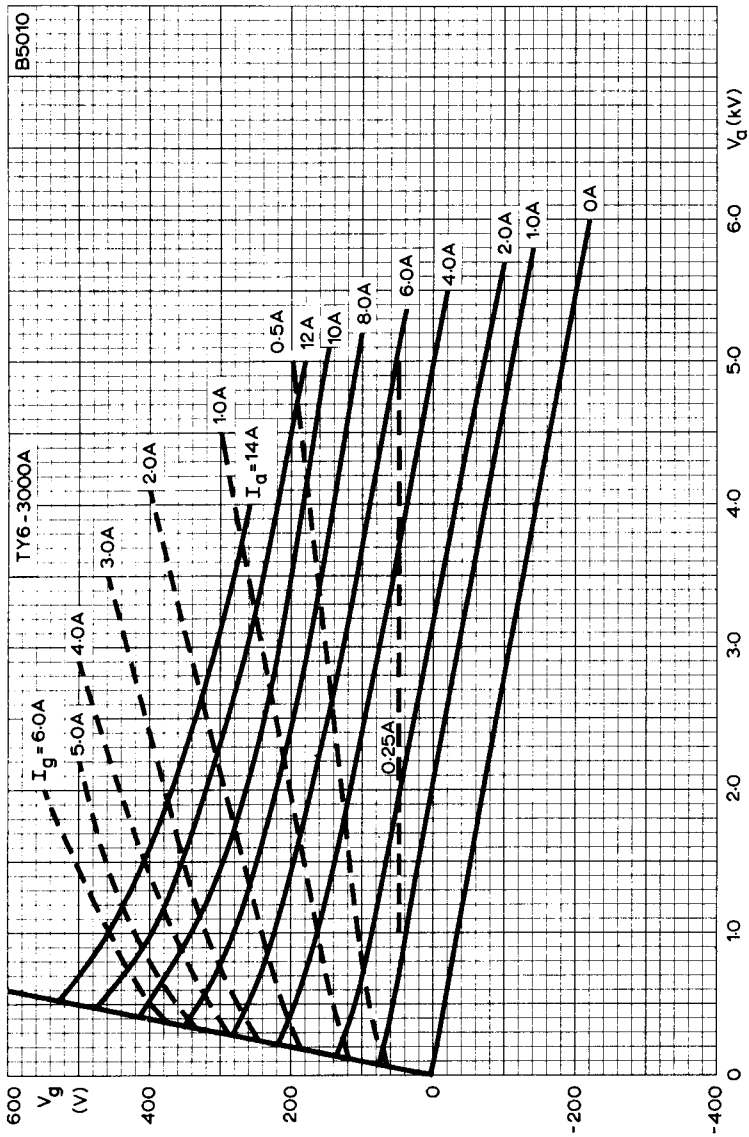

B5008
6 Holes Q dia
H
J
G
G
F
F
D
E
Thickness
of tapes R
N
S
K
A
B
C
L
P
M
U
Filament mid tap
(painted black)
Plane of filament
leads is parallel to
A'A' to within 3½°
8 Slots equi-spaced
W wide x Z deep
Filaments
V
A'
A'
a
g
f
fct
f



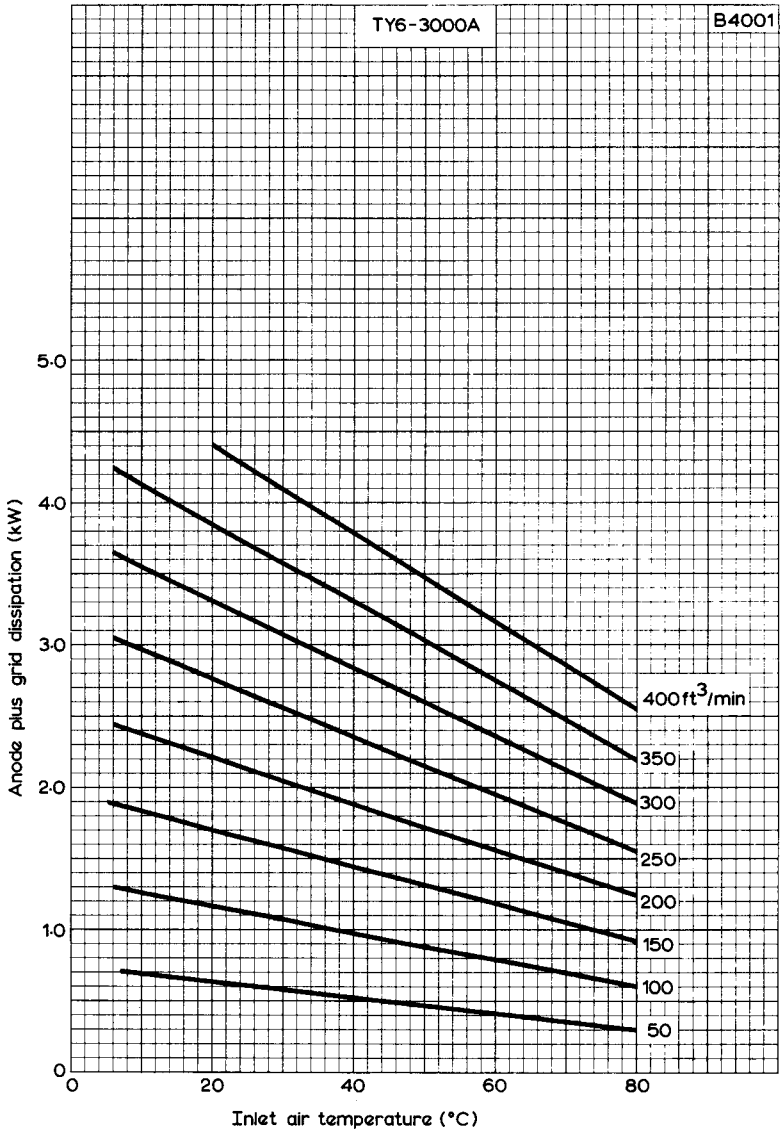

ANODE CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH GRID VOLTAGE AS PARAMETER



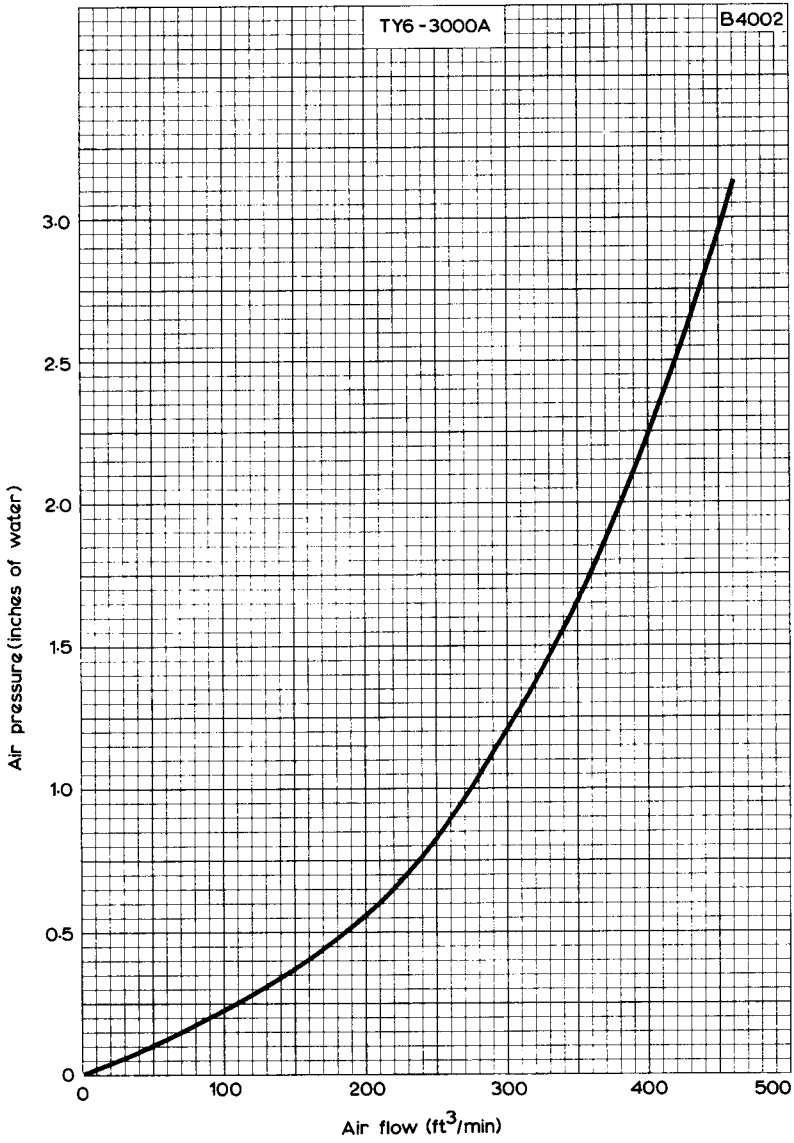

GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH GRID VOLTAGE AS PARAMETER




CONSTANT CURRENT CHARACTERISTICS




AIR COOLING CHARACTERISTICS




AIR FLOW CHARACTERISTICS