

# 4 VALVE DATA PREFERRED TYPES F RECTIFIERS

## AZ 31 Directly-heated full-wave rectifier

### FILAMENT

$V_f$  4.0 V  $I_f$  1.1 A

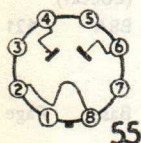
### OPERATING CONDITIONS

|                                            |         |         |         |    |
|--------------------------------------------|---------|---------|---------|----|
| $V_a$ (rms) max.                           | 2 × 500 | 2 × 400 | 2 × 300 | V  |
| $I_a$ max.                                 | 60      | 75      | 100     | mA |
| Maximum capacitance of reservoir capacitor | 60      | 60      | 60      | μF |

|                |             |                                  |     |     |              |
|----------------|-------------|----------------------------------|-----|-----|--------------|
| At $V_a$ (rms) | 300–0–300 V | Reservoir capacitance 16 $\mu$ F |     |     |              |
| $I_{out}$ (mA) |             | Limiting resistance (each anode) |     |     |              |
|                |             | 100                              | 200 | 400 | 800 $\Omega$ |
|                |             | $V_{out}$ (D.C.)                 |     |     |              |
| 45             |             | 340                              | 320 | 296 | 263 V        |
| 60             |             | 325                              | 302 | 276 | 237 V        |
| 75             |             | 310                              | 288 | 256 | 210 V        |
| 100            |             | 280                              | 261 | 225 | 166 V        |

|                            |     |     |     |       |
|----------------------------|-----|-----|-----|-------|
| At $V_a$ (rms) 400–0–400 V |     |     |     |       |
| 30                         | 484 | 472 | 457 | 430 V |
| 45                         | 464 | 451 | 433 | 397 V |
| 60                         | 450 | 434 | 412 | 364 V |
| 75                         | 435 | 420 | 393 | 332 V |

|                            |     |     |     |       |
|----------------------------|-----|-----|-----|-------|
| At $V_a$ (rms) 500–0–500 V |     |     |     |       |
| 30                         | 630 | 612 | 595 | 560 V |
| 45                         | 605 | 588 | 562 | 525 V |
| 60                         | 589 | 570 | 542 | 497 V |



BASE:  
Octal

DIMENSIONS:  
L=111 mm  
D=46 mm

## CY 31 Indirectly-heated half-wave rectifier

### HEATER

$V_h$  20 V  $I_h$  0.2 A Suitable for series operation, D.C. or A.C.  
Heating time 70 secs

### OPERATING CONDITIONS

|                     |        |
|---------------------|--------|
| $V_a$ (rms) max.    | 250 V  |
| $I_a$ max.          | 120 mA |
| $V_{h-k}$ (pk) max. | 350 V  |

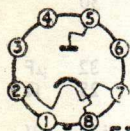
|                                             |                                              |
|---------------------------------------------|----------------------------------------------|
| Max. capacitance of reservoir capacitor (C) | Limiting resistance (R) in series with anode |
| (μF)                                        | (Ω)                                          |
| 8.0                                         | 0                                            |
| 16.0                                        | 75                                           |
| 32.0                                        | 125                                          |



At  $V_a$  (rms) 150 V

CY 31  
(contd.)

| $I_{out}$<br>(mA)    | C<br>R | 8<br>0 | 16<br>75 | 32 $\mu$ F<br>125 $\Omega$ | $V_{out}$ (D.C.) |
|----------------------|--------|--------|----------|----------------------------|------------------|
| 40                   |        | 163    | 157      | 153 V                      |                  |
| 60                   |        | 143    | 144      | 140 V                      |                  |
| 80                   |        | 125    | 132      | 130 V                      |                  |
| 100                  |        | 110    | 123      | 120 V                      |                  |
| 120                  |        | 92     | 115      | 111 V                      |                  |
| At $V_a$ (rms) 200 V |        |        |          |                            |                  |
| 40                   |        | 226    | 227      | 221 V                      |                  |
| 60                   |        | 204    | 210      | 204 V                      |                  |
| 80                   |        | 185    | 190      | 196 V                      |                  |
| 100                  |        | 165    | 180      | 175 V                      |                  |
| 120                  |        | 148    | 167      | 163 V                      |                  |
| At $V_a$ (rms) 250 V |        |        |          |                            |                  |
| 40                   |        | 300    | 292      | 282 V                      |                  |
| 60                   |        | 271    | 276      | 266 V                      |                  |
| 80                   |        | 248    | 262      | 252 V                      |                  |
| 100                  |        | 229    | 247      | 240 V                      |                  |
| 120                  |        | 210    | 232      | 227 V                      |                  |



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BASE:  
Octal

DIMENSIONS:  
L=112 mm  
D=43 mm

Miniature indirectly-heated half-wave high voltage rectifier

EY 51

HEATER

$V_h$  6.3 V  $I_h$  90 mA

Heater voltage tolerances

For  $I_{out}$  not exceeding 200  $\mu$ A

$\pm 15\%$

For  $I_{out}=500 \mu$ A

$\pm 7\%$

CAPACITANCE

$C_{a-k}$

0.8  $\mu$ F

OPERATING CONDITIONS

With sinusoidal input (up to 500 Kc/s)

P.I.V. max.

17 KV

$I_{out}$  max.

0.5 mA

$i_k$  (pk.) max.

4 mA

Min. limiting resistance

0.1 M  $\Omega$

\*Max. reservoir capacitance

0.1  $\mu$ F

\*For 50 c/s operation. At other frequencies capacitance to be inversely proportional to the frequency

OPERATING CONDITIONS

With pulse input

P.I.V. max.

17 KV

$I_{out}$  max.

0.2 mA

\* $i_k$  (pk.) max.

80 mA

Max. filter capacitance

5,000  $\mu$ F

\*For max. pulse duration of 5  $\mu$ secs.

BASE:

B2A

DIMENSIONS:

L=53 mm plus wire leads  
D=14.5 mm



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