



## ELECTRONIC TUBE REFERENCE

## 4228A

Power - Triode (over 1000V 100W) electronic tube

CONSOLIDATED TECHNICAL DATA

**1 SECTION**  
CONSTRUCTION  
**TRIODE**

Large water-cooled power triode for multi-kilowatt transmitter service. Approximately 5 kW plate dissipation and 6 kV plate capability support several kilowatts of published push-pull output in major transmitting equipment.

## GENERAL CHARACTERISTICS

|                     |                   |                      |               |
|---------------------|-------------------|----------------------|---------------|
| BASE DESIGNATION    | —                 | BASE PINS            | —             |
| NOMINAL HEATER      | 22 V / 41 A       | PARALLEL HEATER      | — / —         |
| HEATING             | Direct            | SERIES OPERATION     | Not specified |
| CATHODE ARRANGEMENT | Separate cathodes | SECTION CONSTRUCTION | Similar       |

## SECTION RATINGS

|                                                                             |               |
|-----------------------------------------------------------------------------|---------------|
| <b>SECTION1</b> Triode                                                      |               |
| PLATE RESISTANCE                                                            | 2200 $\Omega$ |
| TRANSCONDUCTANCE                                                            | 0.00818 S     |
| AMPLIFICATION FACTOR                                                        | 18            |
| MAXIMUM PLATE VOLTAGE                                                       | 6000 V        |
| MAXIMUM PLATE DISSIPATION                                                   | 5000 W        |
| MAXIMUM GRID DISSIPATION                                                    | 100 W         |
| MAXIMUM CATHODE CURRENT                                                     | 1.5 A         |
| <i>Explicit alternate/previous designation printed on 3Q150E datasheet.</i> |               |

The 4228A is a water-cooled triode described in the Standard Valves datasheet, using a directly heated filament cathode and published operating data.



## SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

# 1937 Standard Valves

Published test conditions and operating points. Values on this page are preserved as reported by this source.

## 1937 STANDARD VALVES

## Section 1 · Triode

| CHARACTERISTICS            |                 |                           |
|----------------------------|-----------------|---------------------------|
| PARAMETER                  | PUBLISHED VALUE | CONDITION / NOTE          |
| Total emission             | 6 A             | Published datasheet value |
| Grid-anode capacitance     | 24 pF           | Published datasheet value |
| Anode-filament capacitance | 3 pF            | Published datasheet value |
| Grid-filament capacitance  | 25 pF           | Published datasheet value |

| OTHER                               |                 |                           |
|-------------------------------------|-----------------|---------------------------|
| PARAMETER                           | PUBLISHED VALUE | CONDITION / NOTE          |
| Maximum frequency for above ratings | 3 MHz           | Published datasheet value |



## SOURCE OPERATING CONDITIONS

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# 1947 Standard Valves

Published test conditions and operating points. Values on this page are preserved as reported by this source.

## 1947 STANDARD VALVES

## Section 1 · Triode

| CONSTRUCTION   |                 |                  |
|----------------|-----------------|------------------|
| PARAMETER      | PUBLISHED VALUE | CONDITION / NOTE |
| Cooling method | Water           | —                |

| OTHER                  |                 |                  |
|------------------------|-----------------|------------------|
| PARAMETER              | PUBLISHED VALUE | CONDITION / NOTE |
| Push-pull power output | 3.75 kW         | PushPull         |

| PARAMETER                                  | PUBLISHED VALUE | CONDITION / NOTE |
|--------------------------------------------|-----------------|------------------|
| Maximum anode voltage for anode modulation | <b>4000 V</b>   | —                |

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