

ELECTRONIC TUBE REFERENCE

# XCH81

Voltage - Triode (with diode, heptode or hexode) electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS  
CONSTRUCTION  
HEPTODE-TRIODE

Triode-heptode combination for radio mixer, oscillator, RF, and IF applications. Its sections support both frequency conversion and associated receiver amplification, giving broader front-end flexibility than a dedicated converter.

## GENERAL CHARACTERISTICS

|                     |                |                      |            |
|---------------------|----------------|----------------------|------------|
| BASE DESIGNATION    | —              | BASE PINS            | 9          |
| NOMINAL HEATER      | 3.6 V / 600 mA | PARALLEL HEATER      | — / —      |
| HEATING             | Indirect       | SERIES OPERATION     | Capable    |
| CATHODE ARRANGEMENT | Common cathode | SECTION CONSTRUCTION | Dissimilar |

## SECTION RATINGS

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| SECTION1 Triode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |
| TRANSCONDUCTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0037 S |
| AMPLIFICATION FACTOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 22       |
| MAXIMUM PLATE VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 250 V    |
| MAXIMUM PLATE DISSIPATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.8 W    |
| MAXIMUM CATHODE CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 6.5 mA   |
| <p>Miniwatt XCH81/3AJ8 triode-heptode frequency changer for oscillator, mixer and RF/IF amplification. Oscillator triode typical static characteristics at Va 100 V, Vg 0 V: anode current 13.5 mA, gm 3.7 mA/V and amplification factor 22. The oscillator-mode effective conductance approximately 0.65 mA/V is not the static transconductance. Manufacturer per-triode maxima plate voltage 250 V, dissipation 0.8 W and cathode current 6.5 mA. Indirect series heater rating 3.6 V at 0.6 A.</p> |          |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>SECTION2</b> Heptode                                                                                                                                                                                                                                                                                                                                                                                                                               |         |
| <b>MAXIMUM PLATE VOLTAGE</b>                                                                                                                                                                                                                                                                                                                                                                                                                          | 300 V   |
| <b>MAXIMUM SCREEN VOLTAGE</b>                                                                                                                                                                                                                                                                                                                                                                                                                         | 125 V   |
| <b>MAXIMUM PLATE DISSIPATION</b>                                                                                                                                                                                                                                                                                                                                                                                                                      | 1.7 W   |
| <b>MAXIMUM SCREEN DISSIPATION</b>                                                                                                                                                                                                                                                                                                                                                                                                                     | 1 W     |
| <b>MAXIMUM CATHODE CURRENT</b>                                                                                                                                                                                                                                                                                                                                                                                                                        | 12.5 mA |
| <i>Miniwatt XCH81/3AJ8 heptode frequency-converter and optional RF/IF amplification section, common cathode shared with triode oscillator. Maximum plate 300 V, screen 125 V, plate dissipation 1.7 W, screen dissipation 1 W, cathode current 12.5 mA. Converter slope and RF/IF amplifier gm refer to different operating circuits and must not be conflated with static gm. Indirect heater supplied at 3.6 V, 0.6 A in series-heater designs.</i> |         |

Triode-heptode for mixer, oscillator, RF and IF applications.



## SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

# 194X Miniwatt

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

## 194X MINIWATT

## Section 1 · Triode

| APPLICATION |                 |                  |
|-------------|-----------------|------------------|
| PARAMETER   | PUBLISHED VALUE | CONDITION / NOTE |
| Application | Oscillator text | —                |

## 194X MINIWATT

## Section 2 · Heptode

| APPLICATION |                 |                  |
|-------------|-----------------|------------------|
| PARAMETER   | PUBLISHED VALUE | CONDITION / NOTE |
| Application | Mixer text      | —                |

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