

# JINGGUANG 5CX1500A Power Pentode



The JingGuang 5CX1500A is a high-performance ceramic/metal power pentode designed for use as a highly linear Class AB1 linear amplifier. It may also be used as a high-gain Class C amplifier in HF radio frequency industrial processing applications such as plasma generation, sputtering and semiconductor manufacturing. The 5CX1500A filament is precision fabricated in a cylindrical mesh configuration for exceptional mechanical stability and long life. The JingGuang 5CX1500A is manufactured in the JingGuang Electrical Manufactory. JingGuang has achieved the improved performance described above with exact Replacement compatibility with the 5CX1500A manufactured in the United States.



# JINGGUANG 5CX1500A

## General Characteristics

### Electrical

Filament	Thoriated-tungsten
Voltage	5.0±0.25 V
Current @5.0V	38.5 A
Transconductance (Average):	
I <sub>b</sub> = 1.0 Adc, E <sub>c2</sub> = 500 Vdc	24,000 μmhos
Amplification factor (average):	
Grid to Screen 5.5	
Direct interelectrode capacitance (grounded cathode):	
Input	75.0 pF
Output	16.5 pF
Feedthrough	0.2 pF
Frequency of maximum rating:	
CW	110 MHz

### Mechanical

Cooling	Forced air
Base	Special Ring/Breechblock
Air socket	SK-840
Air Chimney	SK-806
Operating position	Vertical, Base up or down
Maximum operating temperature	250°C
Maximum dimensions:	
Length	125.7 mm (4.95 in.)
Diameter	85.6mm (3.37 in.)
Net weight	0.8 kg (30oz)

## Radio Frequency Power Amplifier (CW conditions)

### Absolute maximum ratings

Plate voltage	5,000V
Screen voltage	750V
Plate dissipation	1,500W
Suppressor dissipation	25W
Screen dissipation	75W
Grid dissipation	25W

### Typical Operation

(Frequencies to 30MHz)

Plate voltage	3,000V	4,000V	4,500V
Suppressor voltage	0V	0 V	0V
Screen voltage	500V	500V	500V
Grid voltage	-200V	-200V	-200V
Plate current	900mA	800mA	900mA
Screen current	94mA	66mA	88mA
Grid current	35mA	25mA	34mA
Peak RF grid voltage	255V	245V	255V
Calculated driving power	9.0W	6.5W	9.0W
Plate input power	2,700W	3,200W	4,050W
Plate dissipation	720W	850W	870W
Plate output power	1,980W	2,350W	3,180W
Resonant load impedance	1,570ohms	2240ohms	2520ohms

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## Plate operation

The plate dissipation rating of the 5CX1500A is 1500 watts. The tube and associated circuitry should be protected against surge current in the event of an arc with a current limiting resistance of 10-25 ohms in series with the lead from the power supply to the plate. The resistor should be capable of withstanding the surge current. It should not be used as a fuse.

## Cooling

Plate dissipation (watts)	Minimum Cooling Air-Flow Requirements			
	Sea Level		6,000 feet	
	Air flow (CFM)	Pressure drop (inches of water)	Air flow (CFM)	Pressure drop (inches of water)
1000	27	0.33	33	0.40
1500	47	0.76	58	0.95

Since the power dissipated by the filament represents about 200 watts and since grid plus screen plus suppressor dissipation can, under some conditions, represent another 125 watts, allowance has been made in preparing this tabulation for an additional 325 watts dissipation.

## Outline drawing

