

HIGH-VACUUM DIODE 6102

Oil-Immersion Type  
 Small Size

40 Kv. Peak Inverse Voltage  
 Light Weight

The high-vacuum diode type 6102 is designed for use in rectifier applications involving peak inverse voltages up to 40 kv. The maximum average current is 150 ma. and the peak current is 900 ma. The 6102 has a thoriated tungsten filament and is intended for oil-immersed installation.

GENERAL DATA

Electrical:

Filament Type (See Note II) . . . . .	Thoriated Tungsten			
	Min.	Center	Max.	
Filament Voltage . . . . .	4.75	5.0	5.25	Volts
Filament Current at center volts . . . . .	6.8	7.2	7.6	Ampere
Filament Heating Time . . . . .	3	---	---	Seconds
Tube Voltage Drop (I <sub>b</sub> = 150 ma) . . . . .	300			Volts

Mechanical:

Mounting (See Note I) . . . . .	Special		
Mounting Position . . . . .	Vertical, plate up or down		
Cooling . . . . .	Oil Immersion		
Glass Bulb Temperature . . . . .	180 max. °C		
Seal Temperature . . . . .	180 max. °C		
Oil Temperature (See Note III) . . . . .	80 max. °C		
Net Weight . . . . .	3.5 ounces		

MAXIMUM RATINGS  
 Absolute Values

Rectifier Service:

Peak Inverse Voltage . . . . .	40	max.	Kv.
Peak Plate Current . . . . .	.900	max.	Ampere
Average Plate Current . . . . .	.150	max.	Ampere
Average Plate Dissipation . . . . .	140	max.	Watts

TYPICAL OPERATION

Single-Phase, Full-Wave:

Full Transformer Secondary Voltage (Erms) . . . . .	28300	Volts
D-C Output Voltage to Filter . . . . .	12700	Volts
D-C Output Current . . . . .	.300	Ampere

Single-Phase, Full-Wave Bridge:

Transformer Secondary Voltage (Erms) . . . . .	28300	Volts
D-C Output Voltage to Filter . . . . .	25400	Volts
D-C Output Current . . . . .	.300	Ampere

**Three-Phase, Half-Wave:**

Transformer Secondary Voltage (Erms) Line to Neutral . .	16400	Volts
D-C Output Voltage to Filter . . . . .	19100	Volts
D-C Output Current . . . . .	.450	Ampere

**Three-Phase, Double-Y Parallel (See Note V):**

Transformer Secondary Voltage (Erms) Line to Neutral . .	14100	Volts
D-C Output Voltage to Filter . . . . .	16500	Volts
D-C Output Current . . . . .	.900	Ampere

**Three-Phase, Full-Wave Bridge:**

Transformer Secondary Voltage (Erms) Line to Neutral . .	16400	Volts
D-C Output Voltage to Filter . . . . .	38000	Volts
D-C Output Current . . . . .	.450	Ampere

NOTES

I. Mounting

The 6102 should be supported by the plate terminal so that the axis of the tube is vertical with the plate terminal either up or down. Flexible leads should be provided for the filament connections to prevent strain on the tube seals.

II. Filament

The filament of the 6102 is designed for a-c operation from a transformer secondary winding. The filament voltage measured at the tube terminals should not vary more than 5% from the rated value, including the effects of power-supply regulation. The filament voltage should be applied at least 3 seconds before plate voltage is applied. Safety precautions should be observed when the filament voltage is measured in cases where the filament is at a high potential.

III. Oil Temperature

The local oil temperature is to be measured 1/8" radially outward from the outside of the anode in the plane of the anode seal. This temperature should not exceed 80°C max. as measured with a thermocouple.

IV. Filter Input

Filter circuits of the condenser-input type may be employed; the capacity of the condenser must be such that the peak plate current rating will not be exceeded. Choke-input filters may be preferred in order to obtain the largest average d-c output current under the most favorable conditions.

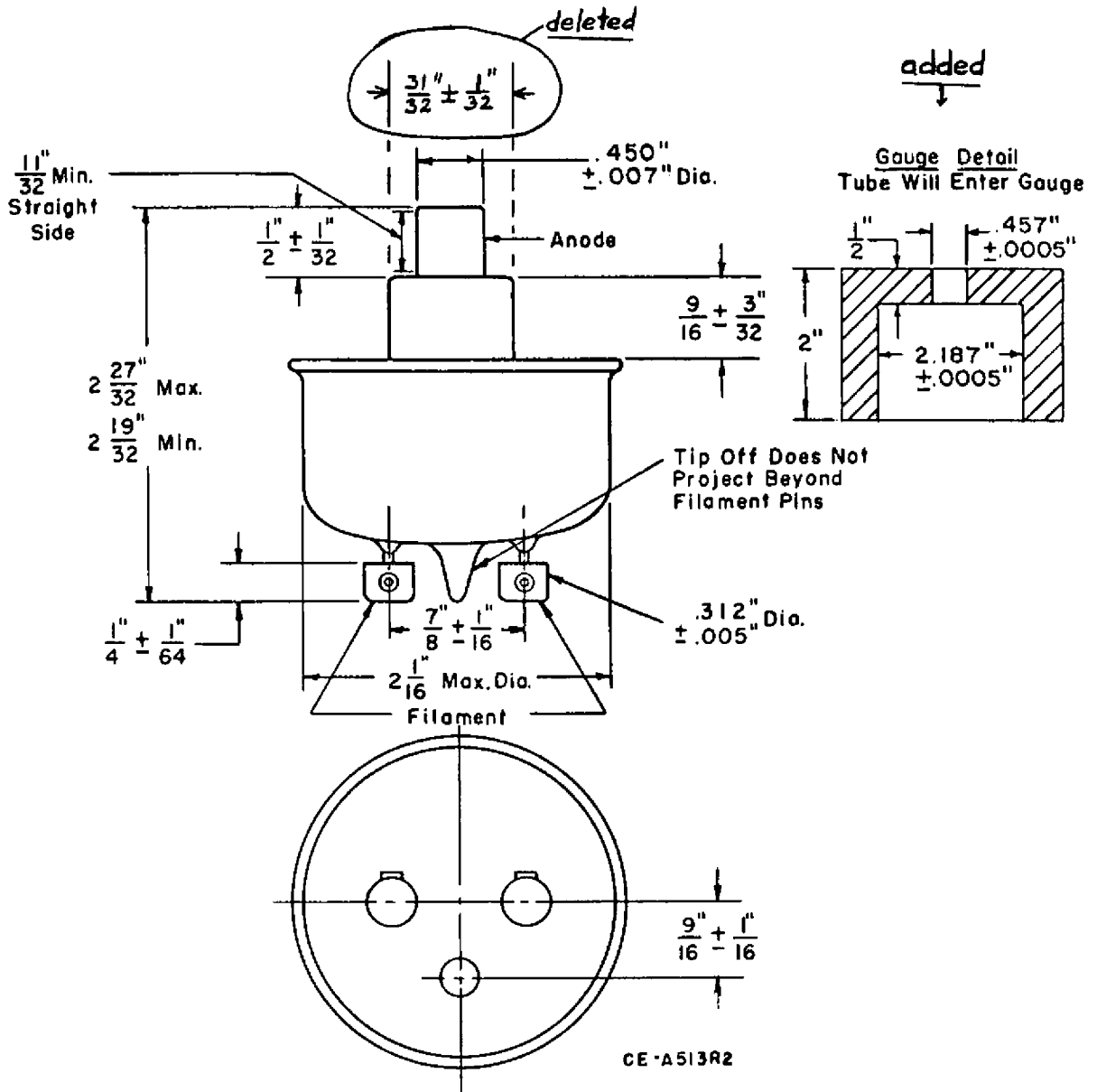
V. No Load

Under no load conditions, the peak inverse voltage across the tube will rise 15%.

VI. General

The allowable load currents shown under "Typical Operation" are for ideal conditions; circuit regulation and other factors will reduce these currents in practical installations.

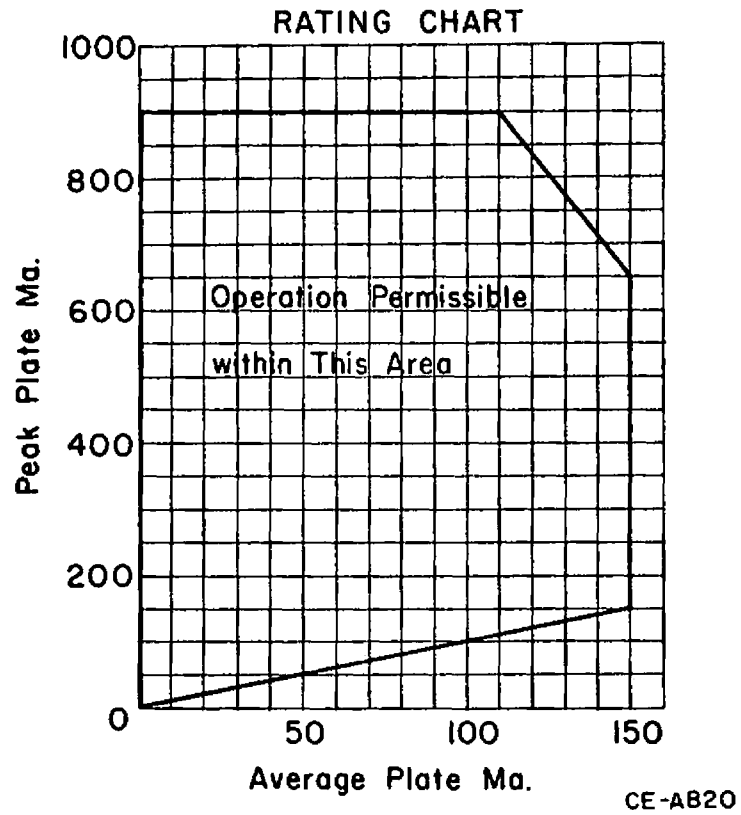
6102 OUTLINE



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