


TOSHIBA X-RAY TUBE
DG-073B-DC  0197
DG-073B-AC

Stationary Anode X-ray Tube

- ◆ Especially designed for dental X-ray unit.
- ◆ Provided with control grid to reduce tube current deviation by self-biasing.
- ◆ These tubes have focus 0.7, and are available for a maximum tube voltage 70 kV.
- ◆ Installed in the same enclosure with the high voltage transformer.

General Data

Electrical:

Circuit:

High Voltage Generator:

DG-073B-DC Constant Potential High-Voltage Generator

DG-073B-AC One-Peak High-Voltage Generator (Self-rectified)

Grounding Center-Grounded

Nominal X-ray Tube Voltage (IEC60613:2010) 70 kV (Fixed)

Nominal X-ray Tube Current 8 mA (Fixed)

Nominal Focal Spot Value (IEC60336:2005) ⁽¹⁾⁽²⁾ 0.7

Filament Condition:

DG-073B-DC Approx. 2.6 A / 3.3 V

DG-073B-AC 4.0 V (Fixed)

Nominal Radiographic Anode Input Power (IEC60613:2010) 560 W

Exposure Duty Cycle 1:60 or more

(Exposure time : interval time)

Note ⁽¹⁾ DG-073B-DC: At 70 kV 8 mA with 125 kΩ bias resistor " Rg " (Fixed).

Note ⁽²⁾ DG-073B-AC: At 70 kV 8 mA with 30 kΩ to 50 kΩ bias resistor " Rg " (Fixed).

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Mechanical:

Dimensions:

Overall Length	See dimensional outline
Maximum Diameter	See dimensional outline

Target:

Anode Angle	20 degrees
Material	Tungsten
Inherent Filtration	At least 1.0 mm Al
X-ray Coverage	φ 130 mm at SID 200 mm
Weight (Approx.)	130 g
Cooling Method	Oil immersed (60°C Max.) and convection oil cooling.
Tube Holding	Holding the glass envelope of the anode end and cathode end, or the screw (M6) of the anode shank.

**Absolute Maximum and Minimum Ratings
(At any time, these values must not be exceeded.)**

Maximum X-ray Tube Voltage (IEC60613:2010)	70 kV
Maximum Inverse Tube Voltage	80 kV
Maximum Filament Current:	
DG-073B-DC	3.0 A
DG-073B-AC	4.4 V
Filament Voltage:	
DG-073B-DC	3.8 ~ 5.1 V
DG-073B-AC	2.5 ~ 3.0 A
Filament Frequency Limits	DC or AC (Sine Wave) 0 ~ 20 kHz
Thermal Characteristics:	
Anode Heat Content	7 kJ
Maximum Heat Dissipation	210 W
Maximum Radiographic Exposure Time	3.2 s

Environmental Limits

Operating Limits (in dielectric oil):

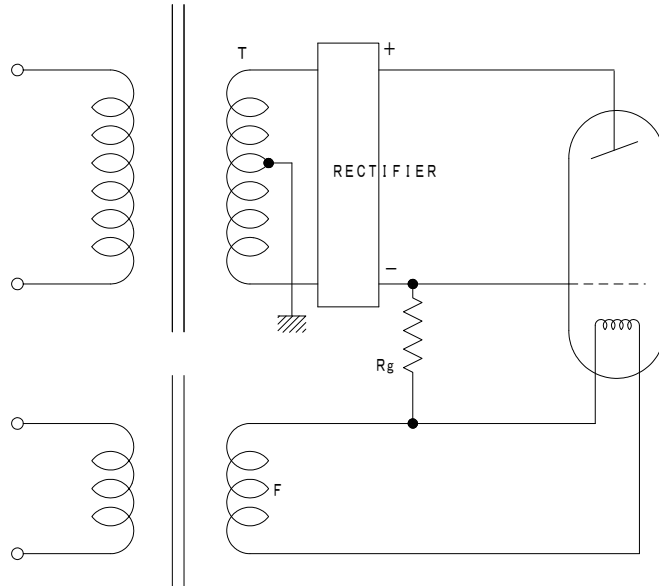
Oil Temperature	10 ~ 60 °C
Oil Pressure	70 ~ 140 kPa

Shipping and Storage Limits:

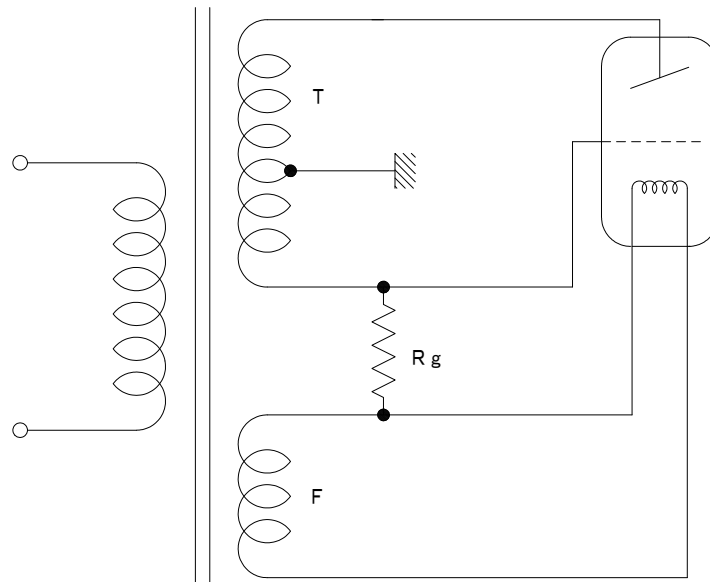
Temperature	-40 ~ 70 °C
Humidity	10 ~ 90 % (No condensation)
Atmospheric Pressure	50 ~ 106 kPa

High Voltage Circuit

Constant Potential High-Voltage Generator



One-Peak High-Voltage Generator (Self-rectified)

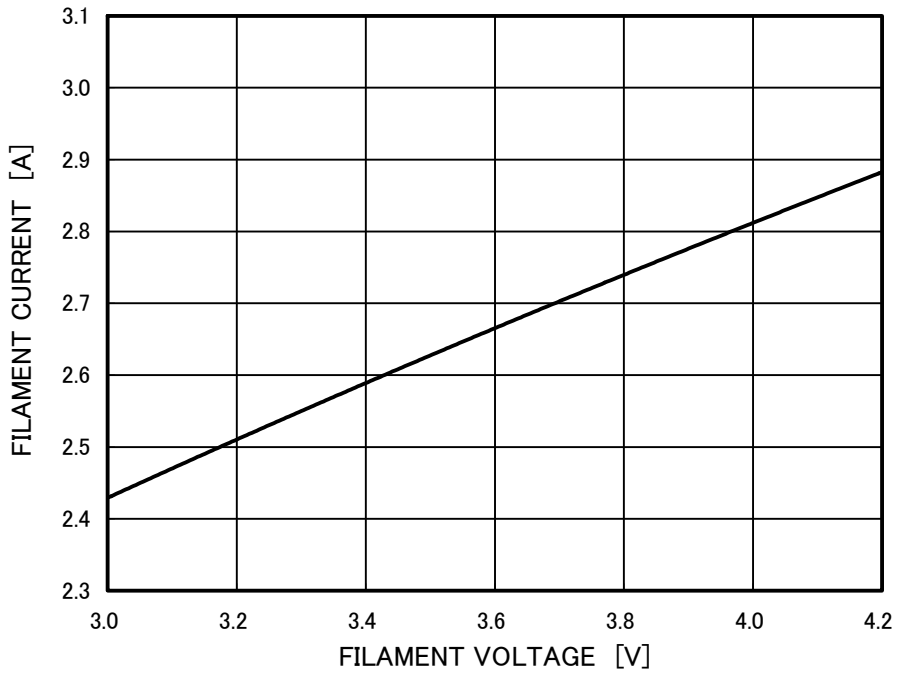


T: Transformer

F: Filament Transformer

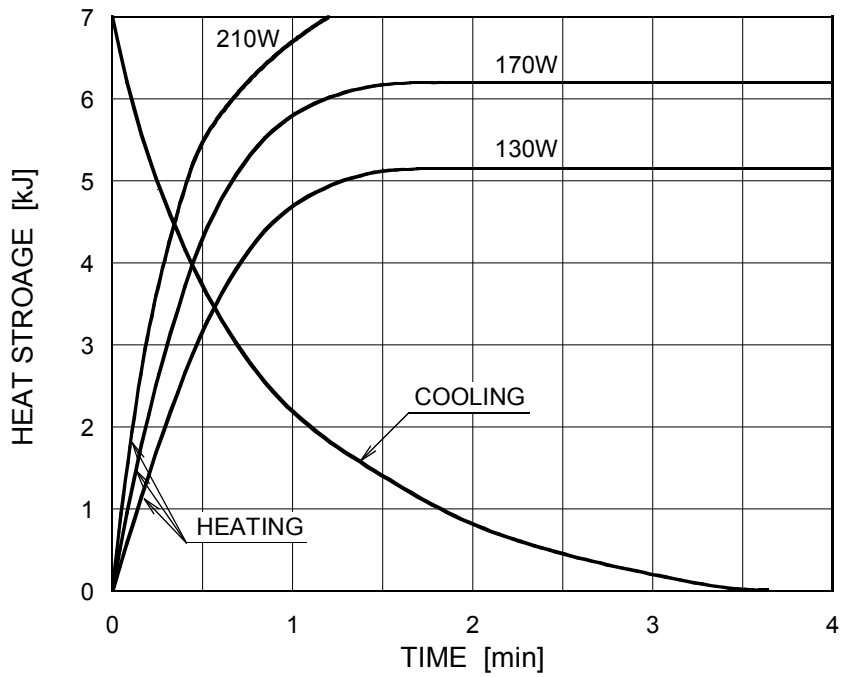
Rg: Bias Resistor

Filament Characteristics



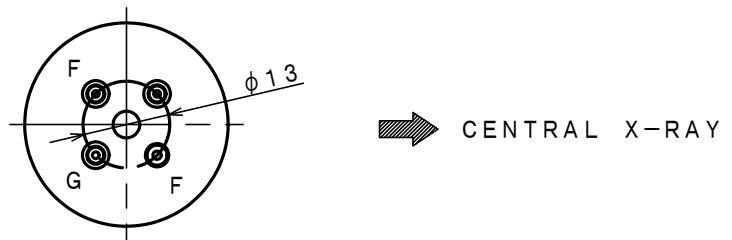
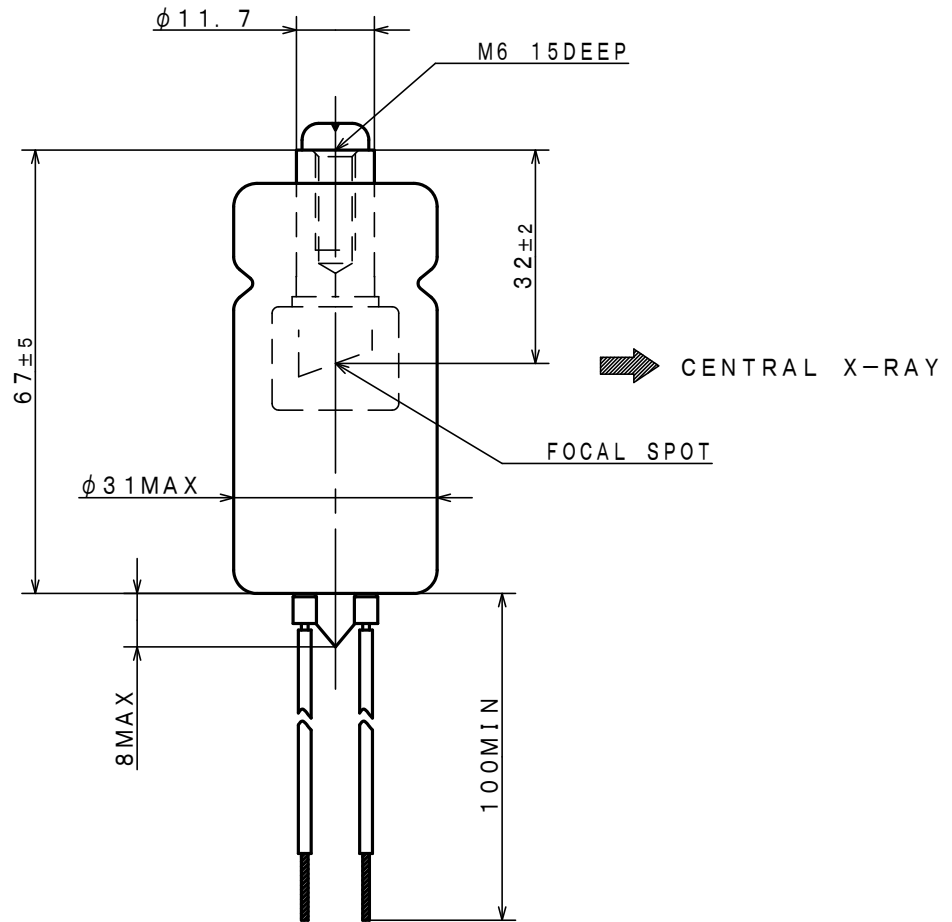
Note 1) This graph indicates typical characteristics.
Note 2) Refer to IEC60613:2010

Anode Heating / Cooling Curve



Dimensional Outline

Unit: mm



F : FILAMENT
G : GRID

OVERSEAS SUBSIDIARIES AND AFFILIATES



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