

TOSHIBA X-RAY TUBE
D-0712 / D-0712S / D-0712SB

Stationary Anode X-ray Tube

- ◆ Especially designed for dental X-ray unit.
- ◆ Provided with an insulation cylinder (D-0712S) and lead cylinder (D-0712SB).
- ◆ These tubes have focus 0.7, and are available for maximum tube voltage 70 kV.
- ◆ Installed in the same enclosure with the high voltage transformer.



General Data

Electrical:

Circuit:

High Voltage Generator	One-Peak High-Voltage Generator (Self-Rectified)
Grounding	Center-Grounded
Nominal X-ray Tube Voltage	70 kV
Nominal Focal Spot Value	0.7
Nominal Anode Input Power (at 1.0s)	600 W
	(See rating charts)
Exposure Duty Cycle	1:60 or more
	(Exposure time : interval time)

Mechanical:

Dimensions:

Overall Length	See dimensional outline.
Maximum Diameter	See dimensional outline.
Target:	
Anode Angle	16 degrees
Material	Tungsten
Inherent Filtration	At least 1.0 mm Al
X-ray Coverage	φ 107 mm at SID 200 mm

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Weight (approx.):

D-0712	100 g
D-0712S	140 g
D-0712SB	260 g

Cooling Method Oil immersed (60°C Max.) and convection oil cooling.

Tube Holding:

D-0712	Holding the glass envelope of the anode end and cathode end, or the screw of the anode shank.
D-0712S	Holding the insulation cylinder.
D-0712SB	Holding the lead cylinder.

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

Maximum X-ray Tube Voltage	70 kV
Between Anode (or Cathode) and Ground.....	35 kV
Maximum Inverse Tube Voltage	80 kV
Minimum X-ray Tube Voltage	50 kV
Maximum X-ray Tube Current	19 mA
	(See rating charts)
Maximum Filament Current	3.1 A
Filament Voltage (at 3.0 A)	2.68 ~ 3.62 V
Filament Frequency Limits	DC or AC (Sine Wave) 0 ~20 kHz
Thermal Characteristics:	
Anode Heat Content	4.3 kJ
Maximum Anode Heat Dissipation Rate	100 W
Maximum Radiographic Exposure Time	10 s

Environmental Limits

Operating Limits (in dielectric oil):

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

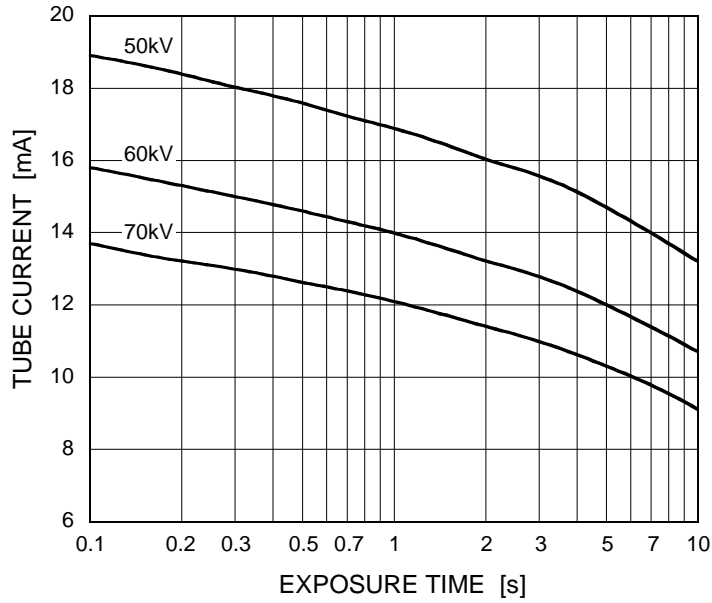
Shipping and Storage Limits:

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

Maximum Rating Charts (Absolute maximum rating charts)

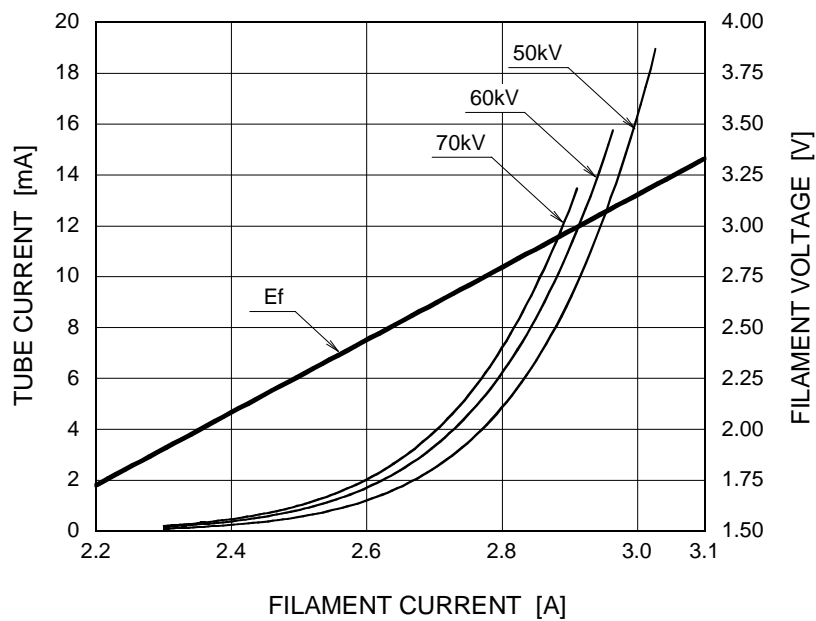
One-Peak High-Voltage Generator

Nominal Focal Spot Value: 0.7



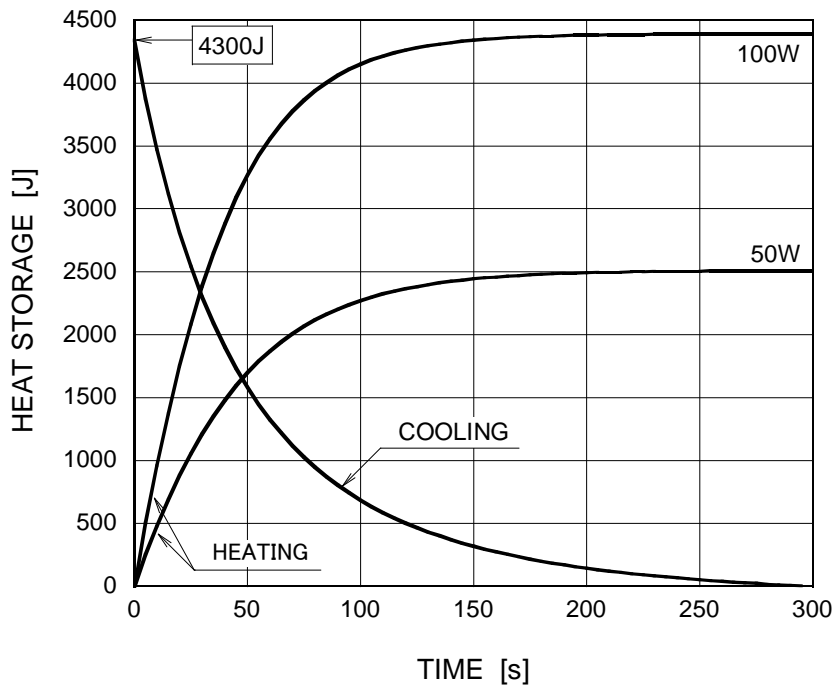
Emission & Filament Characteristics

One-Peak High-Voltage Generator



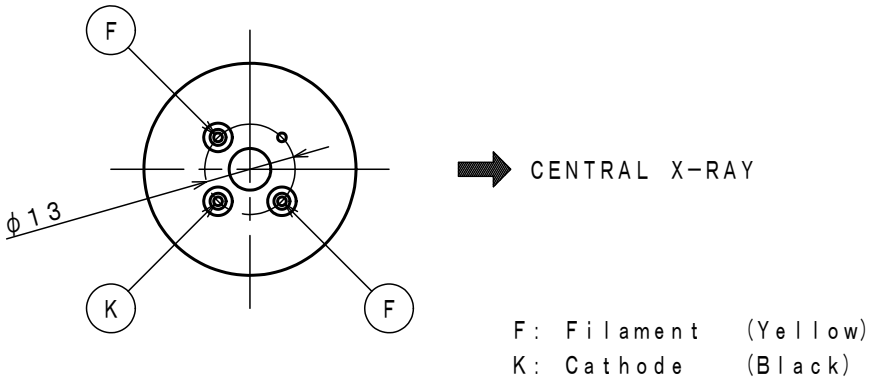
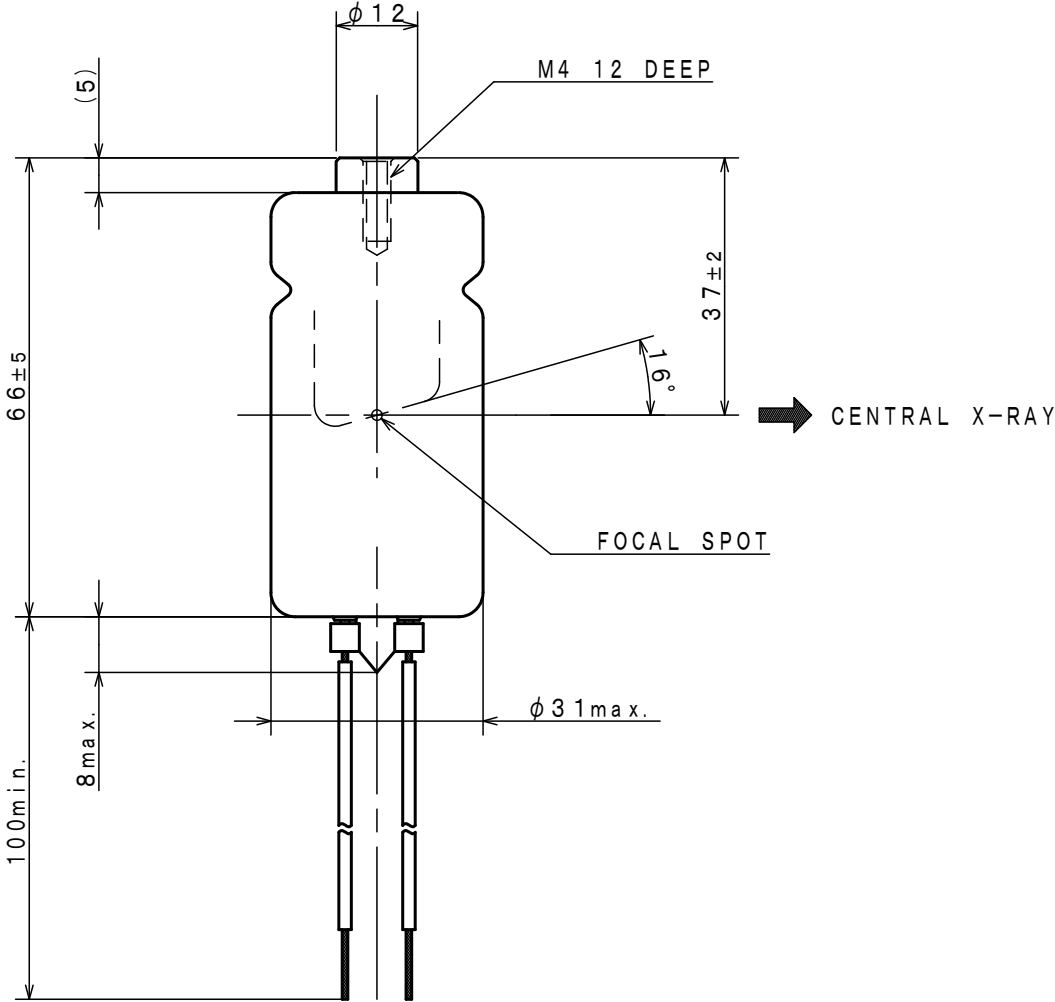
Note: This graph indicates typical characteristics.

Anode Heating / Cooling Curve



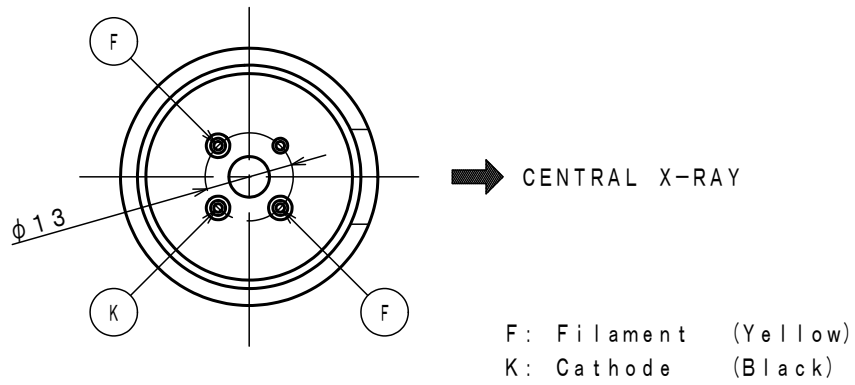
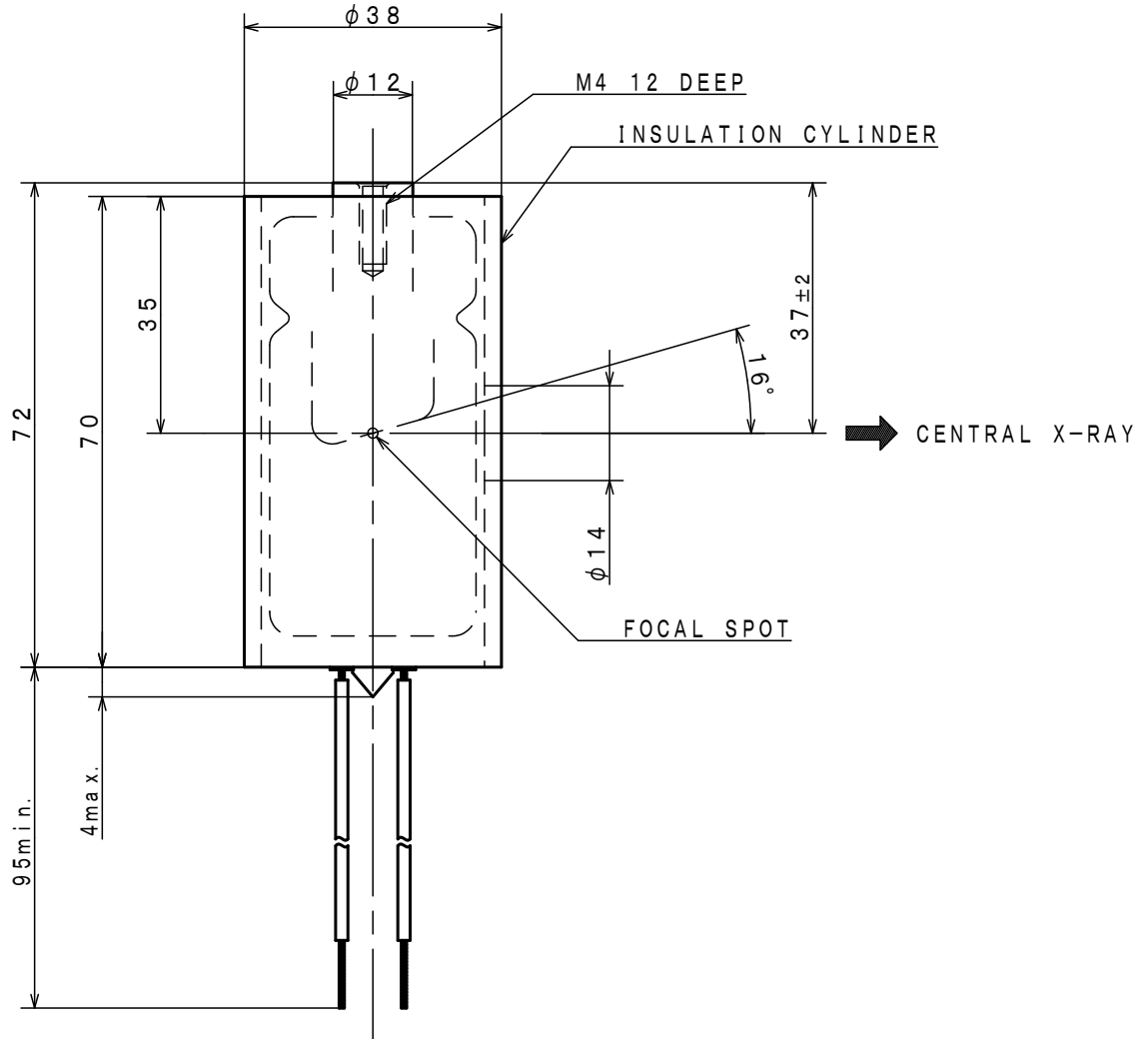
Dimensional Outline of D-0712

Unit: mm



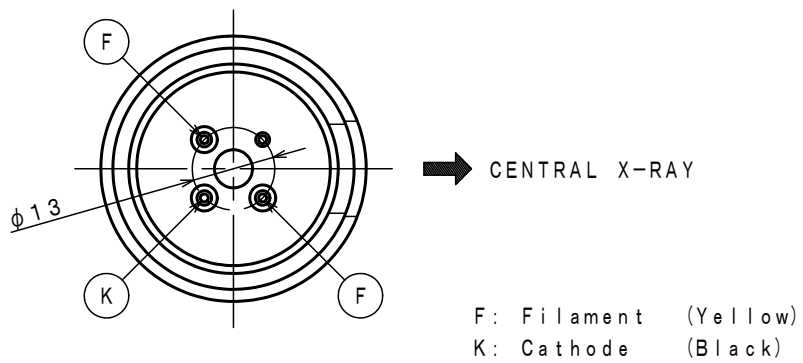
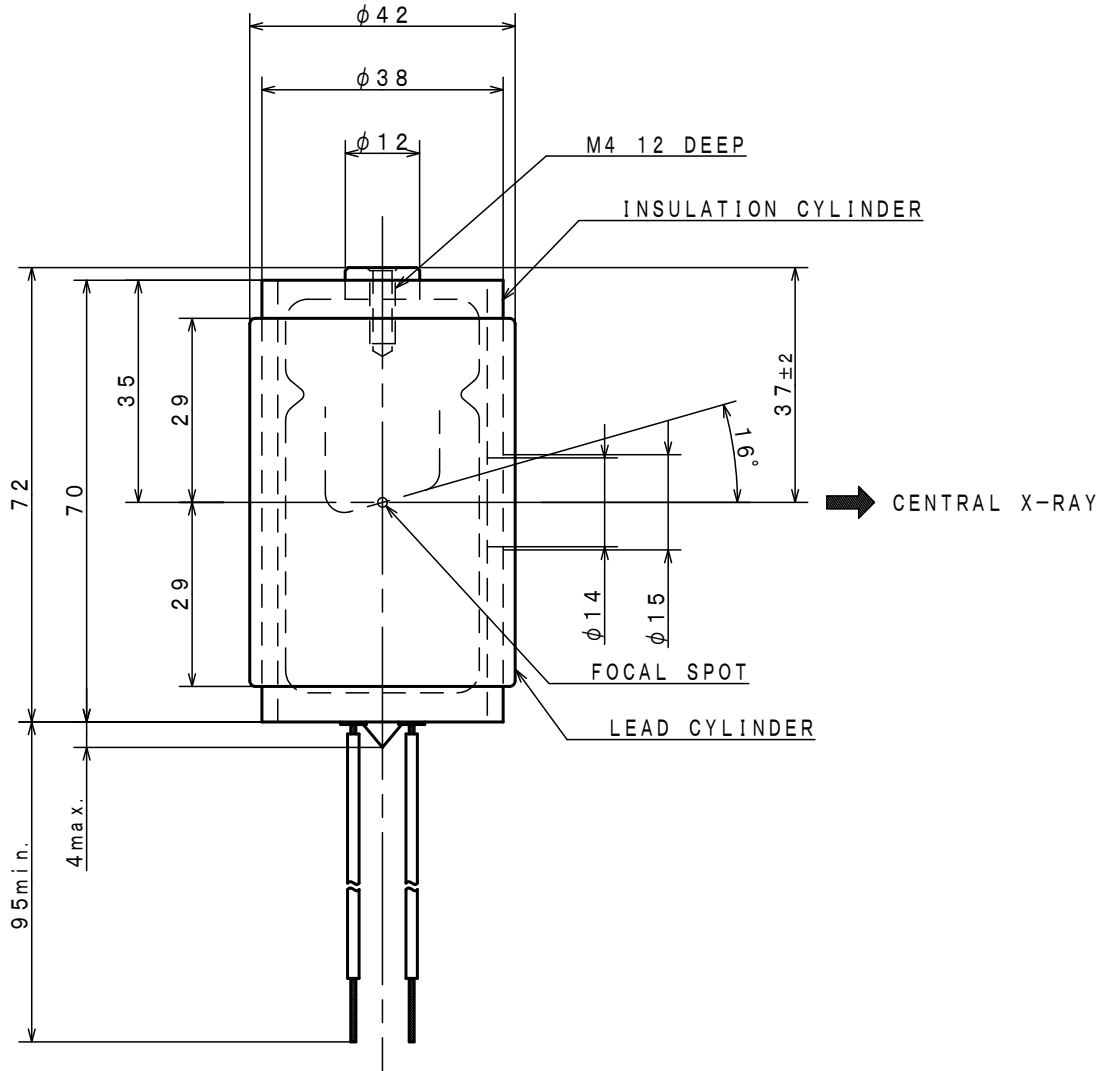
Dimensional Outline of D-0712S

Unit: mm



Dimensional Outline of D-0712SB

Unit: mm



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·Toshiba Electron Tubes & Devices Co., Ltd. meets internationally recognized Standards for Quality Management System ISO9001, ISO13485.