

**INDUSTRIAL X-RAY TUBE
E7598**

X-ray Tube for Industrial Use

- ◆ The X-ray tube E7598 is designed to provide the load of 5mA at 250kV, pulse-voltage circuit under insulation gas (SF6).
- ◆ It is suitable for portable X-ray units up to 250kV for non-destructive inspection of metal casting or metal welding.
- ◆ This tube has metal-ceramic sealed envelope which results in mechanically strong and compact sized structure.

General Data

Electrical:

Circuit:

High Voltage Generator Pulse Voltage
(Pulse Width 1ms, Duty Factor 0.2)

Self-rectified

Grounding Anode-grounded

Nominal X-ray Tube Voltage:

Pulse Voltage 250 kV

Self-rectified 200 kV

Nominal Focal Spot Value 2.0

Mechanical:

Dimensions See dimensional outline

Overall Length 188 mm

Maximum Diameter ϕ 132 mm

Target:

Anode Angle 22 degrees

Construction Tungsten

Inherent Filtration 1.0 mm Beryllium

X-ray Coverage ϕ 350 mm at SID 600 mm

Weight (Approx.) 4.1 kg

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Insulating Medium	Insulation Gas (SF ₆)
Pressure	39.4 × 10 ⁴ ~ 58.8 × 10 ⁴ Pa (4 ~ 6 kg/cm ² Gauge)
Gas Temperature	Maximum 70°C
Cooling Method	Forced air (External radiator is required) Maximum 150°C at anode top
Tube Holding	Hold anode flange (φ 132) uniformly
Mechanical Strength (Shock)	Maximum 200G (at upper holding condition)
Tube Direction	Free
Appearance, Finish	No Painting

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

Maximum Tube Voltage (1ms - Pulse)	1) 250 kV
(Self - rectified)	2) 200 kV
Maximum Inverse Voltage	210 kV
Minimum X-ray Tube Voltage	100 kV
Maximum X-ray Tube Current	5 mA (Average)
Maximum Input Power (1ms - Pulse)	250 kV 5mA
(Self - rectified)	200 kV 5mA
	10 min ON - 10 min OFF
Filament Frequency Limits	DC or AC (Sine wave) 0 ~ 20 kHz
Maximum Filament Current	4.0 A
	See Emission & Filament Characteristics Chart
Maximum Filament Voltage (At 4.0 A)	5 ~ 7 V
Maximum Anode Temperature	3) Maximum 150°C at anode top

Note 1) 250 kV is absolute maximum rating, tube voltage should not be exceeded 250 kV when line voltage to generator fluctuates.

2) 200 kV is absolute maximum rating, tube voltage should not be exceeded 200 kV when line voltage to generator fluctuates.

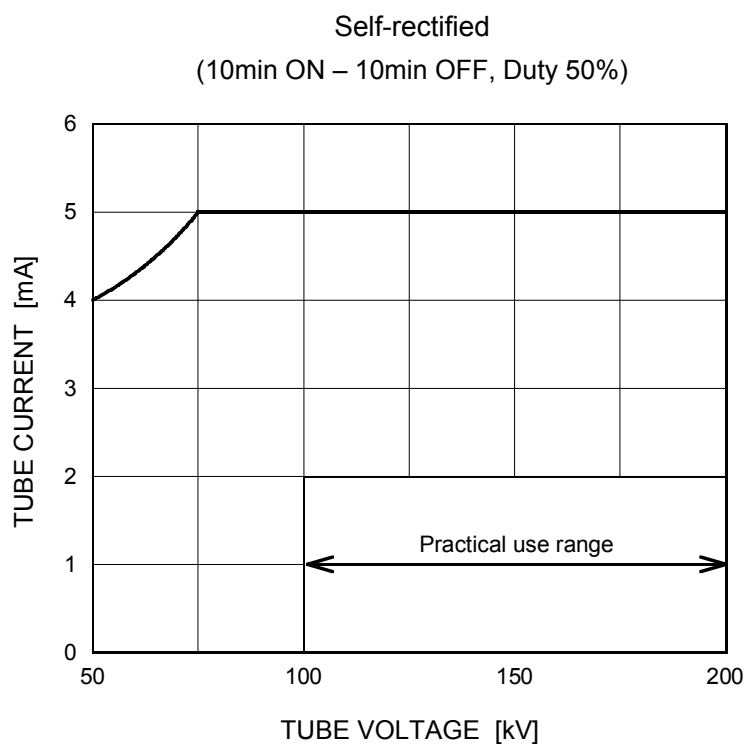
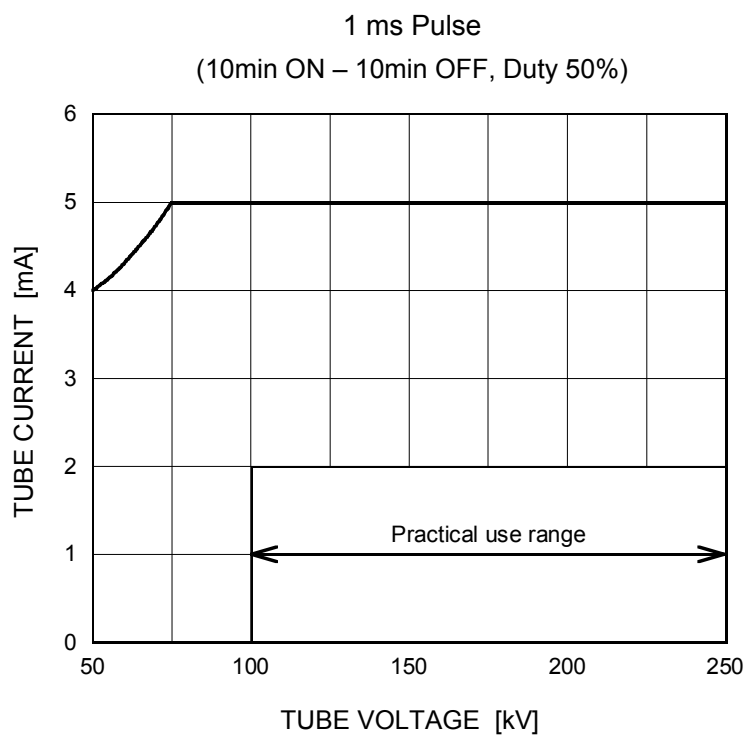
3) The thermo paint close to X-ray port is used as maximum temperature record during operation. (See dimensional outline)

Environmental Limits

Shipping and Storage Limits:

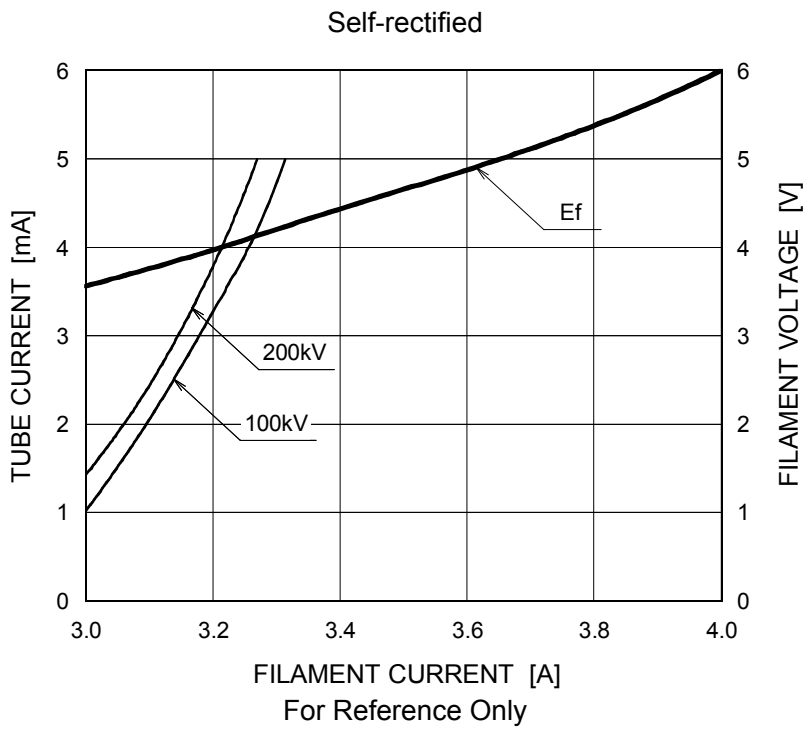
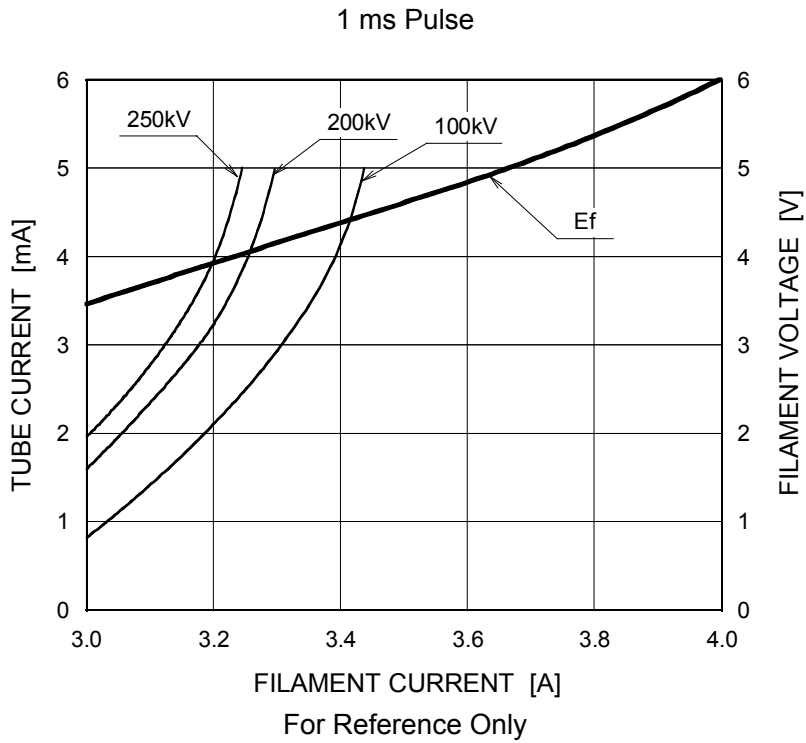
Temperature	-40 ~ 70 °C
Humidity	10 ~ 90 %
(No condensation)	
Atmospheric Pressure	50 ~ 106 kPa

Maximum Rating Charts (Absolute Maximum Rating Charts)



Note: In case the operating tube voltage is below 100kV, the tube current may be difficult to flow by the influence of the tube wall charge.

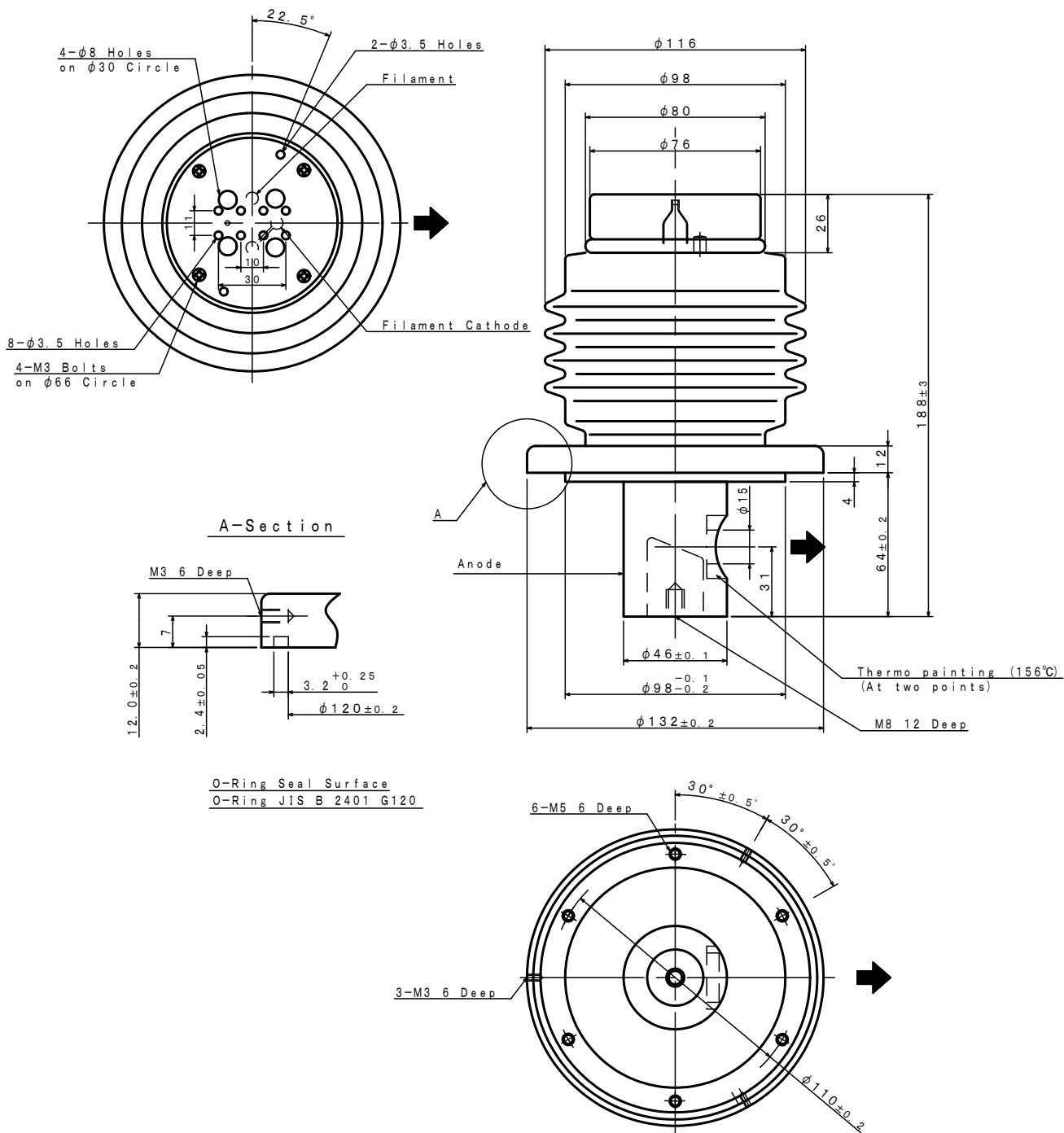
Emission & Filament Characteristics



Note: At any time, filament current must not exceed 4.0A.

Dimensional Outline

Unit mm



 : Direction of Main X-ray



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·The head office of Canon Electron Tubes & Devices Co., Ltd. has been certified to meet all the requirements of Environmental Management System ISO14001.
·Canon Electron Tubes & Devices Co., Ltd. has been certified to meet all the requirements of Quality Management Systems ISO9001 and ISO13485.
Product scope is referred to the following URL. <https://etd.canon/eng/company/quality.htm>.