

TOSHIBA X-RAY TUBE

D-041

D-041S

D-041SB

Stationary Anode X-Ray Tube

- ◆ Especially designed for dental radiography unit.
- ◆ Provided with an insulation cylinder (D-041S) and lead cylinder. (D-041SB)
- ◆ These tubes have focus 0.4 mm, and are available for maximum tube voltage 70 kV with DC.
- ◆ Installed in the same enclosure with the high tension transformer.

General Data

Electrical:

Circuit (Center-Grounded)	Constant Potential (DC)
Operating Tube Voltage	50 ~ 70 kV
Focal Spot	0.4 mm
Input Energy (at 1.0s)	430W
	(See Rating Chart)
Exposure Duty Cycle	1:60

★The information contained herein is presented only as a guide for the applications of our products.

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★The information contained herein may be changed without prior notice. It is therefore advisable to contact TETD before proceeding with the design of equipment incorporating this product.

★For further particulars apply to TETD.

Mechanical:

Dimensions: See dimensional outline

Overall Length:

D-041 66 mm

D-041S 69.6 mm

D-041SB 69.6 mm

Maximum Diameter:

D-041 31 mm

D-041S 38 mm

D-041SB 42 mm

Target Angle 12.5 degrees

Inherent Filtration At least 1.0 mm Al

X-ray Coverage ϕ 70 mm at SID 200 mm

Weight:

D-041 Approx. 100 g

D-041S Approx. 140 g

D-041SB Approx. 260 g

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

Tube Holding

D-041 Holding the glass envelope of the anode end and cathode end,
or the screw of the anode shank.

D-041S Holding the insulation cylinder.

D-041SB Holding the lead cylinder.

Absolute Maximum and Minimum Ratings

(At any time, these values must not be exceeded.)

Maximum Tube Voltage.....	77 kV
Anode to Ground	39 kV
Cathode to Ground	39 kV
Minimum Tube Voltage.....	50 kV
Maximum Tube Current.....	9 mA
Filament Characteristics	
Maximum Filament Current	3.0 A
Filament Frequency Limits	0 ~ 20 kHz
Thermal Characteristics:	
Anode Heat Storage Capacity	4300 J
Maximum Anode Heat Dissipation Rate	100 W
Maximum Exposure Time	3.2 s Max.

Environmental Limits

Operating Limits (in dielectric oil)

Oil Temperature	10 ~ 60 °C
Oil pressure	70 ~ 106 kPa

Shipping and Storage Limits:

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

Cautions

Read this page carefully before using the tube.

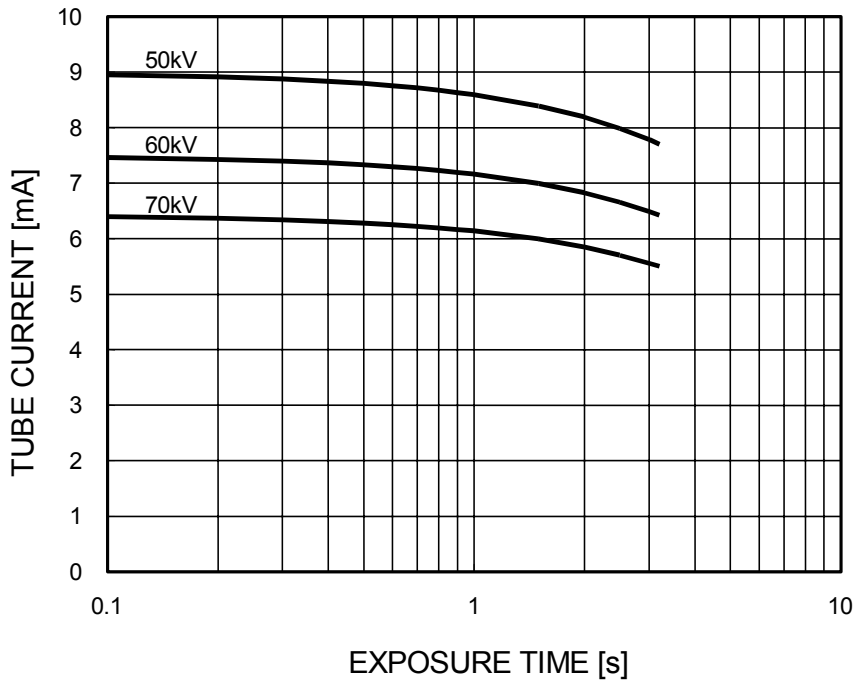
Since X-ray tube will emit X-rays when it is energized with high voltage, special knowledge is required to handle it. The items below show general cautions for the tube handling.

1. The tube shall be handled or operated only by qualified personnel.
Only a specialist with knowledge of X-ray tube should assemble, maintain and remove the tube.
2. The tube envelope is made of glass. In transporting and handling, sufficient care should be taken not to give strong impact or vibration to the tube.
3. Radiation protection of the tube unit assembled with this tube must be sufficiently taken. And the leakage technique factor of the tube unit must not exceed maximum anode cooling rate of this tube.
4. Regulations and standards require the minimum source-skin distance (SSD) and the minimum filtration of the useful beam. Use the tube after fulfilling the requirements.
5. The tube might be broken due to only one overload operation.
Provide proper overload protection circuit. Operate the tube by selecting a proper input condition according to the conditions for operation and tube characteristics charts.
6. The X-ray shield of this tube is made of lead (Pb). Powdered or vaporized lead is harmful to the human body. The lead shield should not be machined, polished, burned or wiped with any chemicals. The dispose of lead shield in accordance with the prevailing governmental regulations.
7. If any abnormality is found in using this tube, immediately switch off the power supply and contact TETD.
8. The charts of this technical data are indicating standard values.
For usage not described here or for any unclear items, please contact TETD.

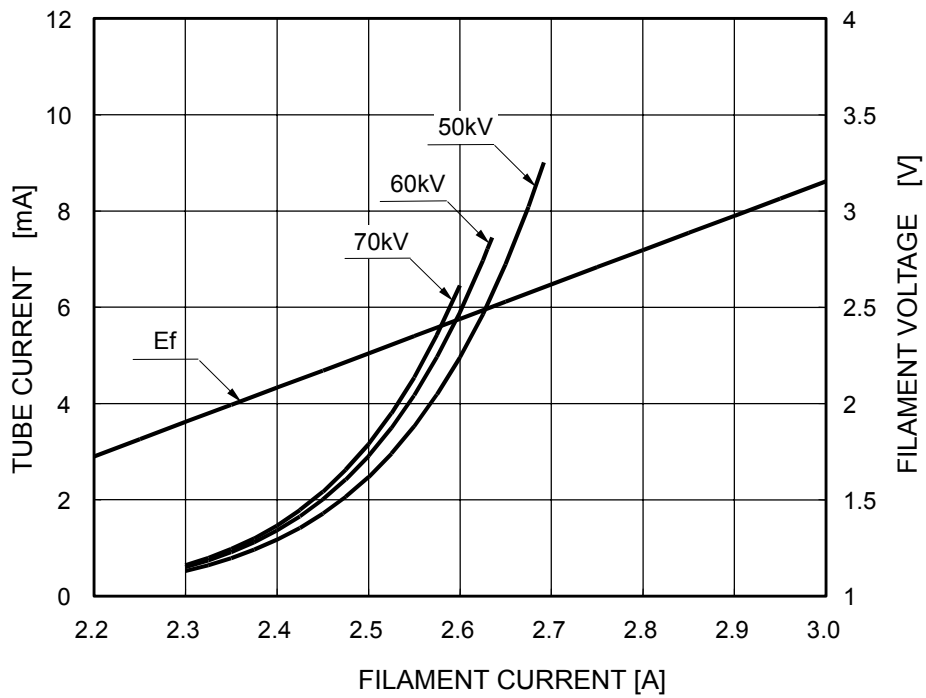
Maximum Rating Charts

(Absolute maximum rating charts)

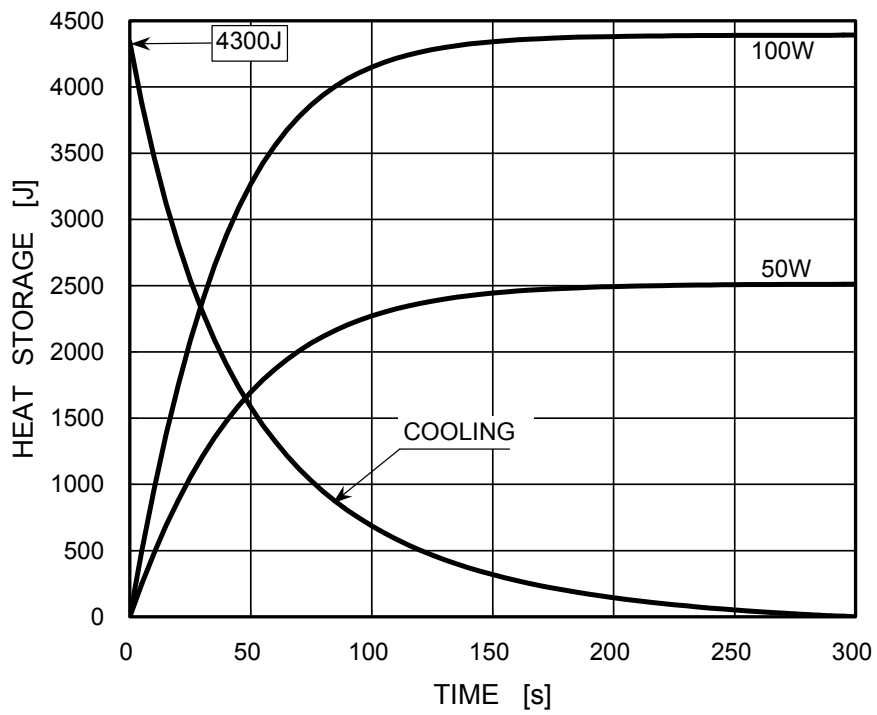
Focus Spot : 0.4 mm



Emission & Filament Characteristics

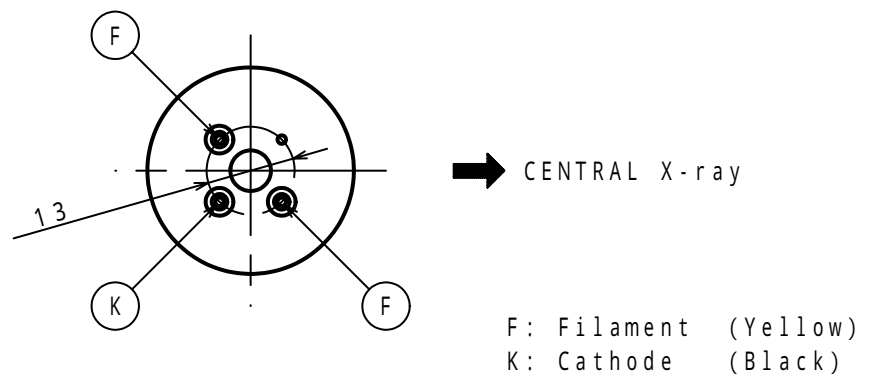
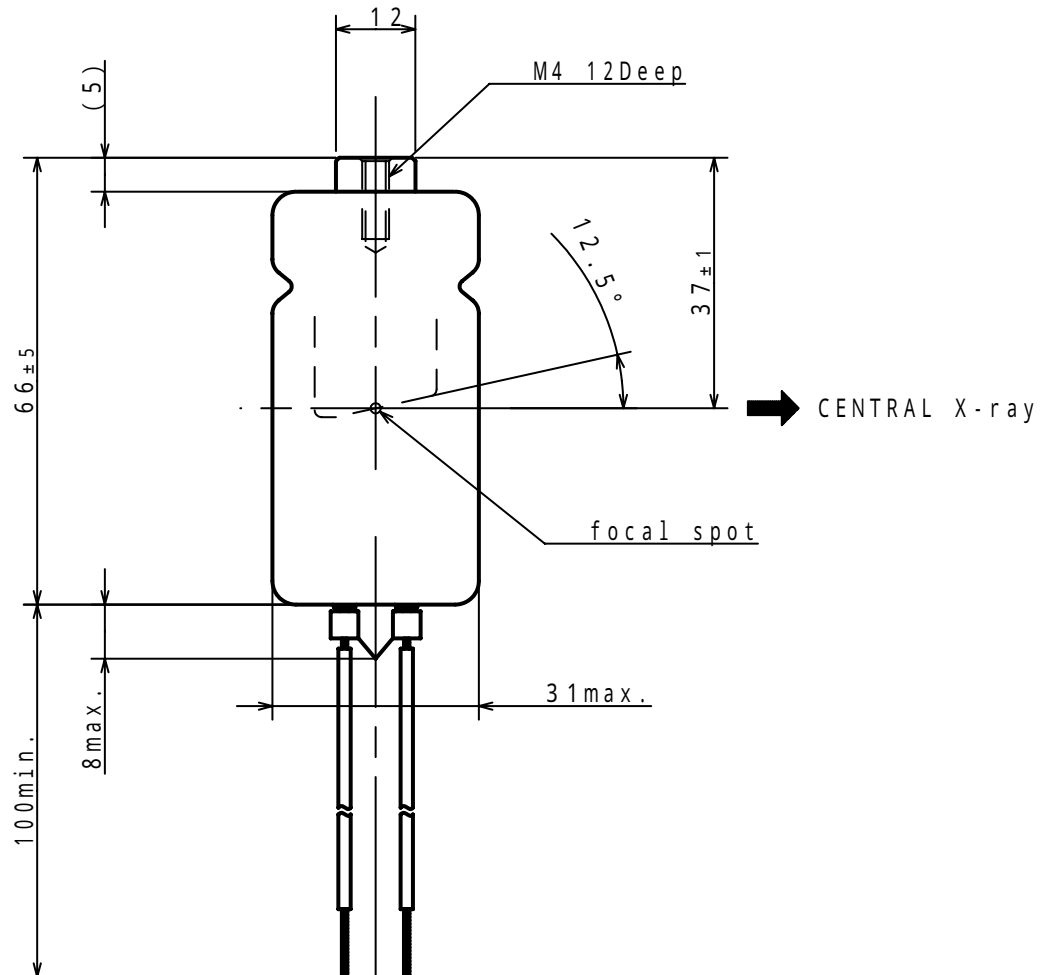


Anode Thermal Characteristics



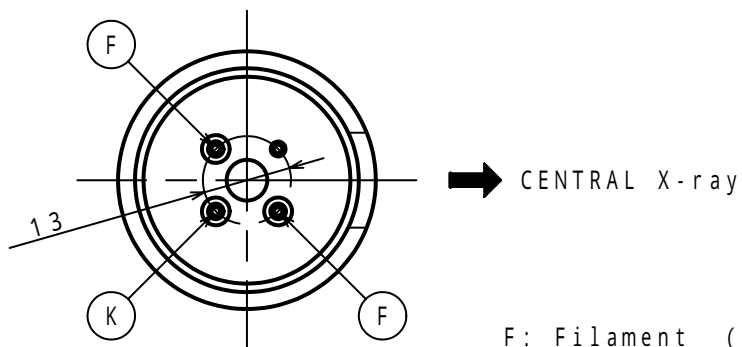
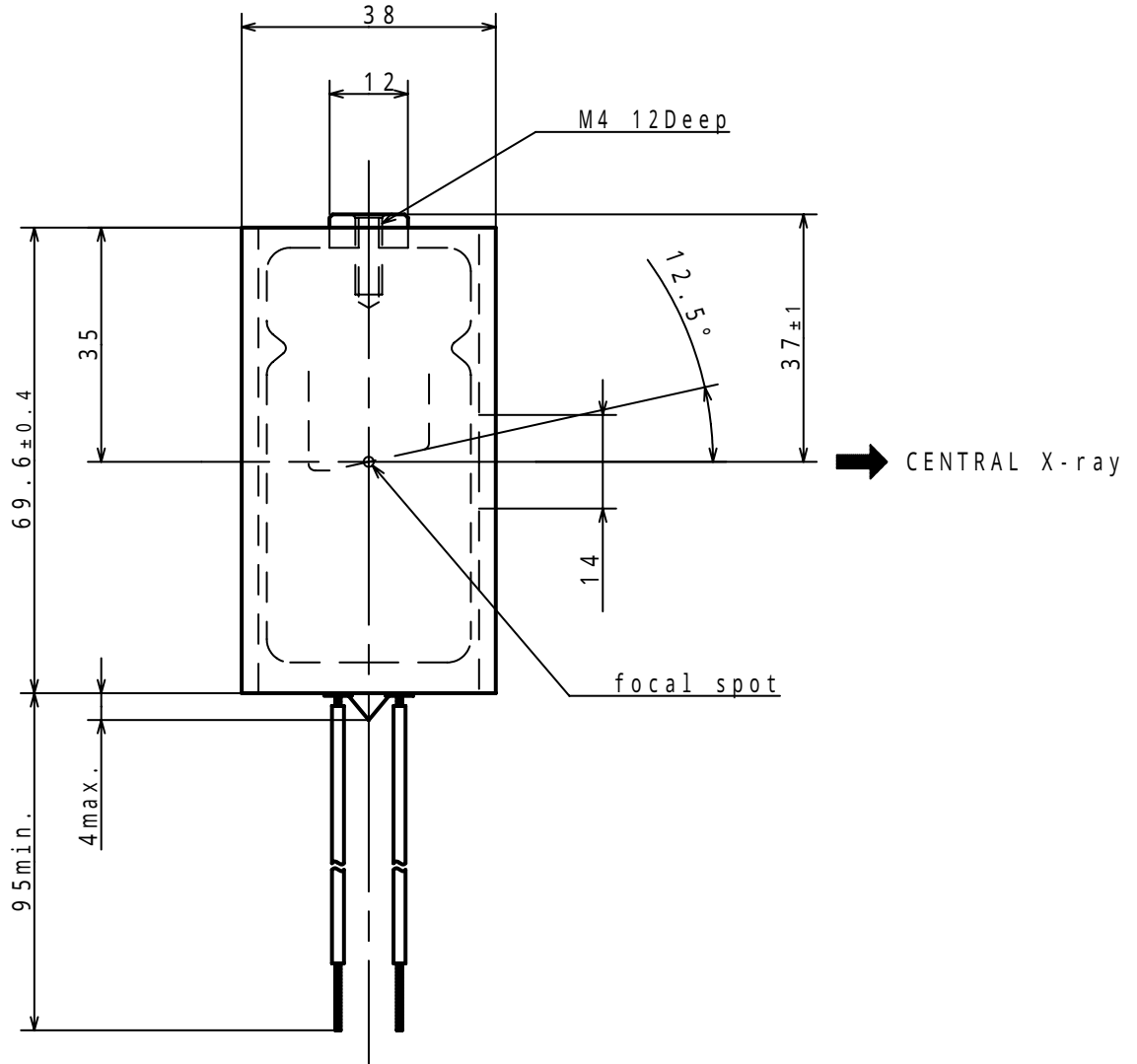
Dimensional Outline of D-041

Unit mm



Dimensional Outline of D-041S

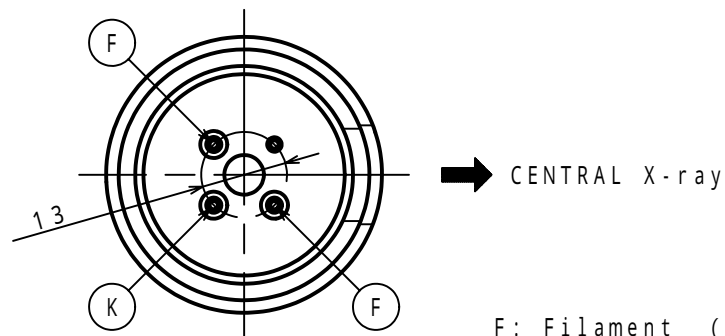
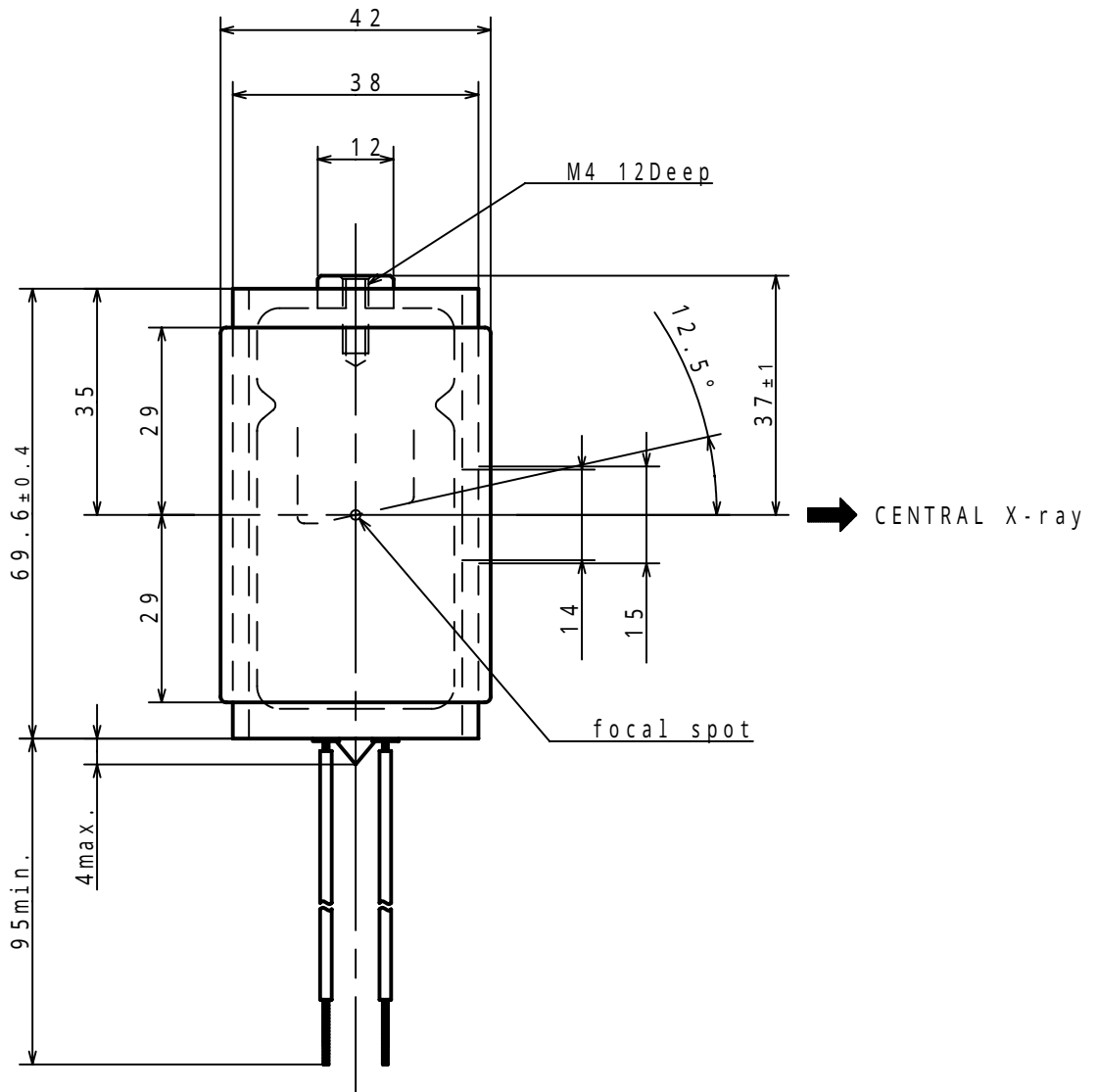
Unit mm



F: Filament (Yellow)
K: Cathode (Black)

Dimensional Outline of D-041SB

Unit mm



F: Filament (Yellow)
K: Cathode (Black)

OVERSEAS SUBSIDIARIES AND AFFILIATES

EU REPRESENTATIVE

•TOSHIBA ELECTRONICS EUROPE

RIVERSIDE WAY, CAMBERLEY, SURREY. GU15 3YA U.K.
PHONE (0) 1276 694600 FAX (0) 1276 694800

For Sales & Technical Services, please contact the following representative:

•TOSHIBA ELECTRONICS EUROPE

RIVERSIDE WAY, CAMBERLEY, SURREY. GU15 3YA U.K.
PHONE (0) 1276 694600 FAX (0) 1276 694800

•TOSHIBA AMERICA ELECTRONIC COMPONENTS, INC.

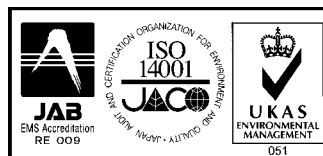
2150 EAST LAKE COOK ROAD, SUITE 310
BUFFALO GROVE, ILLINOIS 60089 USA
PHONE (847) 484-2400 FAX (847) 541-7287

•TOSHIBA ELECTRON DEVICES & MATERIALS TRADING (SHANGHAI) CO., LTD. (TEMS)

No.689, GUANG DONG RD, SHANGHAI, 200001, CHAINA
RM607, HAITONG SECURITIES TOWER
PHONE (21) 6341-0055 FAX (21) 6341-0990

TOSHIBA ELECTRON TUBES & DEVICES CO., LTD.

Sales & Marketing Department
1385 SHIMOISHIGAMI, OTAWARA-SHI, TOCHIGI-KEN, 324-8550, JAPAN
PHONE : +81-287-26-6666 FAX : +81-287-26-6060
<http://www.toshiba-tetd.co.jp/>



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