

The data should be read in conjunction with the Power Triode Preamble.

ABRIDGED DATA

Power triode of ceramic/metal construction, intended primarily for laser switching and control, and other high voltage regulation applications.

Anode dissipation (100% duty cycle)	5.0	kW
Anode voltage	35	kV max
Peak inverse voltage	35	kV max
Cooling		forced-air

GENERAL

Electrical

Filament		thoriated tungsten
Filament voltage (see note)	6.3	V
Filament current at 6.3 V	33	A
Filament cold resistance	24	mΩ
Peak usable cathode current	7.5	A
Amplification factor	100	

Mechanical

Overall dimensions		see outline drawing
Net weight		3.1 kg approx
Mounting position		vertical, either way up

Accessories

Insulating pedestal		MA149C
Capacitor clip		MA2192A
Thermal link		MA2273A

NOTE Temporary fluctuations up to +5% or -10% in filament voltage are permissible.

COOLING

Temperature Limits

Maximum temperature of envelope or seals 220 °C max

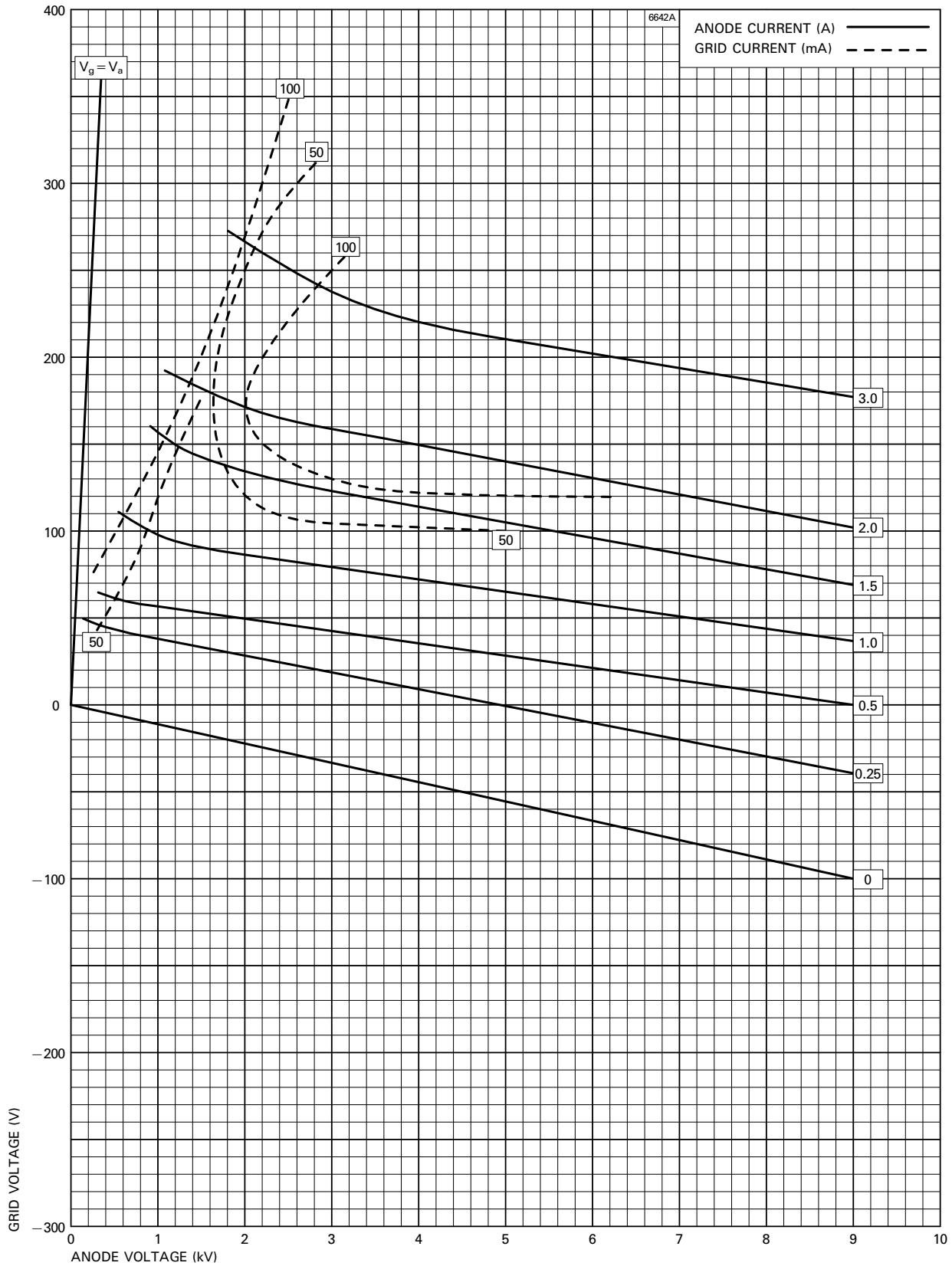
For optimum life, the envelope or seal temperature under continuously loaded conditions should not exceed 200 °C.

Anode

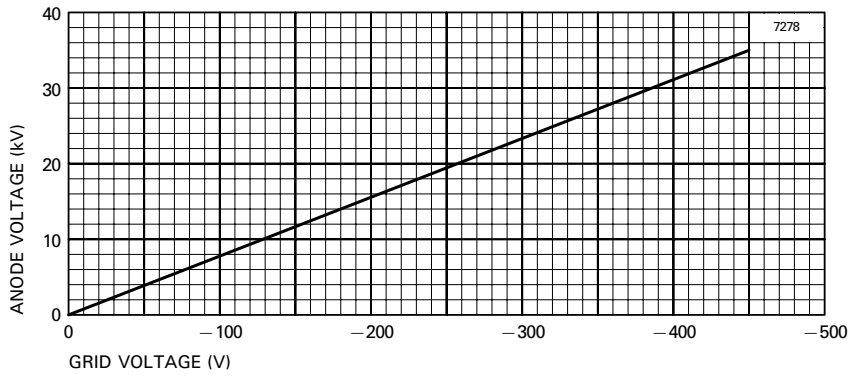
The BR1651 air cooling requirements are shown below. The required air flow should be delivered through the radiator immediately before and during the application of any voltages. Filament power, anode power and air flow may be removed simultaneously.

Anode dissipation (kW)	Height above sea level (m)	Inlet temperature (max) (°C)	Air flow (min) (m ³ /min)	Pressure drop (mm water)
1.0	0	35	3.0	8.0
1.0	0	45	3.1	8.0
1.0	1500	35	3.7	9.0
1.0	3000	35	4.1	10
3.0	0	35	5.2	23
3.0	0	45	6.1	29
3.0	1500	35	6.2	26
3.0	3000	35	6.6	26
4.0	0	35	6.9	41
4.0	0	45	8.2	50
4.0	1500	35	8.4	45
4.0	3000	25	8.9	44
5.0	0	35	9.2	68
5.0	0	45	10.7	90
5.0	1500	35	11.2	81
5.0	3000	25	11.6	79

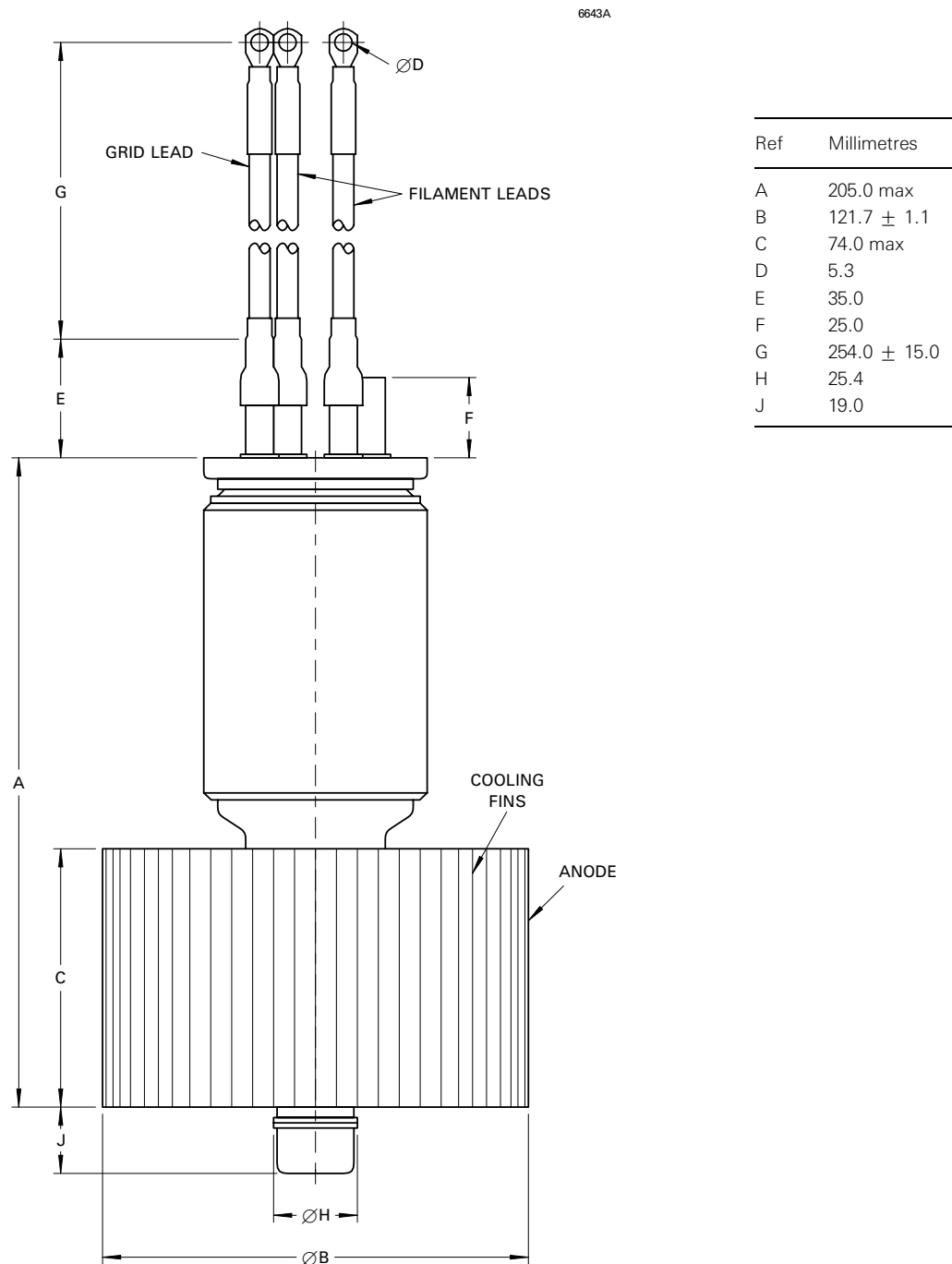
TYPICAL CONSTANT CURRENT CHARACTERISTICS



TYPICAL ANODE CURRENT CUT-OFF ($100 \mu\text{A}$) CHARACTERISTIC



OUTLINE (All dimensions without limits are nominal)



HEALTH AND SAFETY HAZARDS

e2v technologies electronic devices are safe to handle and operate, provided that the precautions stated are observed. e2v technologies does not accept responsibility for damage or injury resulting from the use of electronic devices it produces. Equipment manufacturers and users must ensure that adequate precautions are taken. Appropriate warning labels and notices must be provided on equipments incorporating e2v technologies devices and in operating manuals.



High Voltage

Equipment must be designed so that personnel cannot come into contact with high voltage circuits. All high voltage circuits and terminals must be enclosed and fail-safe interlock switches must be fitted to disconnect the primary power supply and discharge all high voltage capacitors and other stored energy before allowing access. Interlock switches must not be bypassed to allow operation with access doors open.



RF Radiation

Personnel must not be exposed to excessive RF radiation. A properly designed equipment cabinet with good RF electrical connection between panels will normally provide sufficient protection.



X-Ray Radiation

This device, when operating at voltages above 5 kV, produces progressively more dangerous X-rays as the voltage is increased; the radiation varies greatly during life. The device envelope provides only limited protection and further shielding may be required. A metal equipment cabinet with overlapping joints will usually provide sufficient shielding, but if there is any doubt an expert in this field should perform an X-ray survey of the equipment.



Implosion

This tube stores potential energy by virtue of its vacuum. The energy level is low, but there is some hazard from flying fragments if the tube is dropped or subjected to violent impact. The tube must be stored and transported in its approved pack. During installation or replacement the tube must not be scratched or damaged in any way likely to reduce the strength of the envelope.

References

1. BS 3192. Specification for safety requirements for radio (including television) transmitting apparatus.
2. TEPAC Publication no. 181. Recommended practice for measurement of X-radiation from high power tubes.

Whilst e2v technologies has taken care to ensure the accuracy of the information contained herein it accepts no responsibility for the consequences of any use thereof and also reserves the right to change the specification of goods without notice. e2v technologies accepts no liability beyond that set out in its standard conditions of sale in respect of infringement of third party patents arising from the use of tubes or other devices in accordance with information contained herein.