

The data to be read in conjunction with the Hydrogen Thyatron Preamble.

ABRIDGED DATA

Hydrogen-filled triode version of the CX1140 thyatron for use as an inverse or charging diode in pulse modulators. A hydrogen reservoir is incorporated.

Peak inverse anode voltage	25	kV max
Peak anode current	500	A max
Average anode current	1.25	A max

GENERAL

Electrical

Cathode (connected internally to mid-point of heater)	oxide coated
Heater voltage	6.3 ± 5% V
Heater current	21.5 A
Tube heating time (minimum)	5.0 min
Inter-electrode capacitances (approximate):	
anode to grid (cathode not connected)	5.0 pF
anode to cathode (grid not connected)	25 pF

Mechanical

Overall length	317.5 mm (12.500 inches) max
Overall diameter	84.12 mm (3.312 inches) max
Net weight	0.7 kg (1.5 pounds) approx
Mounting position (see note 1)	any
Base	pin spacing as B5F; metal shell with micalex insert
Top cap (see note 2)	BS448-CT3

Cooling natural

MAXIMUM AND MINIMUM RATINGS (Absolute values)

	Min	Max	
Anode			
Peak inverse anode voltage	-	25	kV
Peak anode current	-	500	A
Average anode current	-	1.25	A
Rate of rise of anode current (see note 3)	-	2500	A/μs

Grid

Unloaded grid drive pulse voltage (see note 4)	300	1000	V
Grid pulse duration	1.0	-	μs
Rate of rise of grid pulse (see note 3)	1.0	-	kV/μs
Loaded grid bias voltage (see note 5)	0	-120	V
Peak grid drive current	-	1.0	A
Average grid drive current (see note 6)	1.0	10	mA



MAXIMUM AND MINIMUM RATINGS (Continued)

	Min	Max	
Cathode			
Heater voltage	6.3 ± 5%		V
Tube heating time	5.0	-	min

Environmental

Ambient temperature	-55	+90	°C
Altitude	-	3	km
	-	10 000	ft

Maximum Simultaneous Inverse Diode Ratings

Peak anode current	-	500	A
Anode pulse duration	-	100	µs

CHARACTERISTICS

	Min	Max	
Critical DC anode voltage			
for conduction	-	100	V
Anode delay time (see notes 7 and 8)	-	0.2	µs
Recovery time (see note 9)	-	50	µs
Heater current (at 6.3 V)	18	25	A

NOTES

- Clamping is permissible by the base only.
- A large area anode connector MA360 is recommended.
- This rate of rise refers to that part of the leading edge of the pulse between 25% and 75% of the pulse amplitude.
- Measured with respect to cathode potential.
- For inverse diode applications, the tube is normally operated without grid bias. The use of negative grid bias causes a decrease in recovery time.
- These conditions apply to a continuous grid discharge.
- The typical figures are obtained on test using conditions of minimum grid drive. Improved performance can be expected by increasing the grid drive.
- The time interval between a point on the leading edge of the unloaded grid pulse at 25% of the pulse amplitude and the point where anode conduction takes place.
- The time specified is the recovery time after a 100 A pulse with zero potential on the grid. The recovery time increases with increased anode current.

HEALTH AND SAFETY HAZARDS

e2v technologies hydrogen thyratrons are safe to handle and operate, provided that the relevant precautions stated herein 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 charges before allowing access. Interlock switches must not be bypassed to allow operation with access doors open.

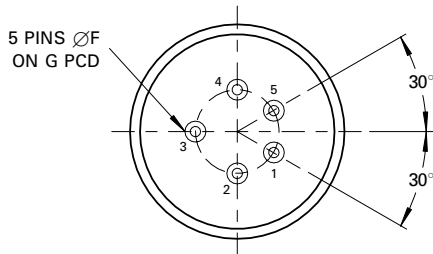
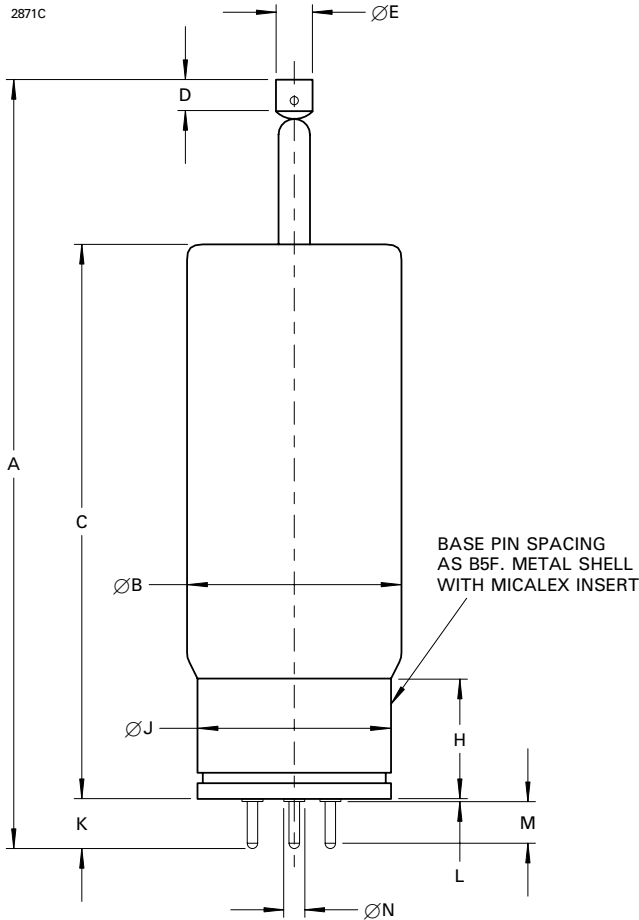


X-Ray Radiation

All high voltage devices produce X-rays during operation and may require shielding. The X-ray radiation from hydrogen thyratrons is usually reduced to a safe level by enclosing the equipment or shielding the thyratron with at least 1.6 mm (1/16 inch) thick steel panels.

Users and equipment manufacturers must check the radiation level under their maximum operating conditions.

OUTLINE
(All dimensions without limits are nominal)



Ref	Millimetres	Inches
A	304.8 ± 12.7	12.000 ± 0.500
B	84.12 max	3.312 max
C	215.9 ± 12.7	8.500 ± 0.500
D	12.7 min	0.500 min
E	14.38 ± 0.18	0.566 ± 0.007
F	4.750 ± 0.076	0.187 ± 0.003
G	31.75	1.250
H	49.2	1.937
J	77.77 ± 1.57	3.062 ± 0.062
K	19.56 max	0.770 max
L	1.85 max	0.073 max
M	14.6 min	0.575 min
N	6.6 max	0.260 max

Inch dimensions have been derived from millimetres.

Pin	Element
1	Heater
2	Cathode, connected internally to heater mid-point
3	Grid
4	No connection
5	Heater
Top cap	Anode

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