

Rectifier Diode

Types W5696V#020 to W5696V#140

The data sheet on the subsequent pages of this document is a scanned copy of existing data for this product.
(Rating Report 90NR22 Issue 1)

This data reflects the old part number for this product which is: SW02-14CXC27C.
This part number must **NOT** be used for ordering purposes – please use the ordering particulars detailed below.

The limitations of this data are as follows:
Only VC outline drawing (W6) in datasheet
No reverse recovery information available

The following links will direct you to the appropriate outline drawings
[Outline W6](#) – 33mm clamp height capsule
[Outline W43](#) – 27mm clamp height capsule

Where any information on the product matrix page differs from that in the following data, the product matrix must be considered correct

An electronic data sheet for this product is presently in preparation.

For further information on this product, please contact your local ASM or distributor.

Alternatively, please contact Westcode as detailed below.

| Ordering Particulars | | | |
|---|--|--|------------|
| W5696 | V# | ◆◆ | 0 |
| Fixed Type Code | VC – 33mm clamp height capsule VD – 27mm clamp height capsule | Voltage code V _{RRM} /100 02-14 | Fixed Code |
| Typical Order Code: W5696VC140, 33mm clamp height capsule, 1400V V _{RRM} | | | |

| | | |
|--|---|---|
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| <p>The information contained herein is confidential and is protected by Copyright. The information may not be used or disclosed except with the written permission of and in the manner permitted by the proprietors Westcode Semiconductors Ltd. © Westcode Semiconductors Ltd.</p> <p>In the interest of product improvement, Westcode reserves the right to change specifications at any time without prior notice.</p> <p>Devices with a suffix code (2-letter, 3-letter or letter/digit/letter combination) added to their generic code are not necessarily subject to the conditions and limits contained in this report.</p> | | |

QUALITY EVALUATION LABORATORY

Rating Report: 90NR22

Date: 17th October, 1990

Pages: 10

Diode Type SW02-14XC27C

Written by: M. Baker

Checked: *BA*

Approved: *[Signature]*

This diode consists of a diffused 63 mm diameter silicon slice mounted in a cold weld capsule housing.

Ratings

| | | |
|---|---|-----------------------------|
| Voltage Grades | : | 02-14 |
| V_{RSM} | : | 300-1500V |
| V_{RRM} | : | 200-1400V |
| $I_{F(AV)}$: Single Phase; 50 Hz, 180° half sinewave; | | |
| Double side cooled $T_{HS} = 55^{\circ}C, 100^{\circ}C$ | : | 5700A, 4400A |
| Single side cooled $T_{HS} = 100^{\circ}C$ | : | 2700A |
| I_F (rms) max.) | : | 10160A |
|) Double side cooled $T_{HS} = 25^{\circ}C$ | | |
| I_F max.) | : | 8810A |
| I_{FSM} : t = 10ms half sinewave; T_J (initial) = 190°C; | | |
| $V_{RM} = 0.6 V_{RRM}(\text{Max})$ | : | 53000A |
| I_{FSM} ; t = 10ms half sinewave; T_J (initial) = 190 °C; $V_{RM} \leq 10V$ | : | 59000A |
| I^2t : t = 10ms; T_J (initial) = 190 °C; $V_{RM} = 0.6 V_{RRM}(\text{Max})$ | : | $14.0 \times 10^6 A^2 SECS$ |
| I^2t : t = 10ms; T_J (initial) = 190 °C; $V_{RM} \leq 10V$ | : | $17.4 \times 10^6 A^2 SECS$ |
| I^2t : t = 3ms; T_J (initial) = 190 °C; $V_{RM} \leq 10V$ | : | $13.5 \times 10^6 A^2 SECS$ |
| T_{HS} Operating range | : | -55 to +190°C |
| T_{stg} ; Non-operating | : | -55 to +200°C |

Characteristics

(Maximum values unless stated otherwise)

| | | | |
|-------------------|--|---|----------------|
| V_O | : $T_J = 190^\circ\text{C}$ | : | 0.65V |
| r_s | : $T_J = 190^\circ\text{C}$ | : | 0.059 mohms |
| COLD | | | |
| A | : $T_J = 25^\circ\text{C}$ | : | |
| B | : $T_J = 25^\circ\text{C}$ | : | |
| C | : $T_J = 25^\circ\text{C}$ | : | |
| D | : $T_J = 25^\circ\text{C}$ | : | |
| HOT | | | |
| A | : (Constant) | : | 0.6174317 |
| B | : $(B \times \ln i)$ | : | 6.299688E-3 |
| C | : $(C \times i)$ | : | 6.045386E-5 |
| D | : $(D \times \sqrt{i})$ | : | -3.998218E-4 |
| V_{FM} | : $I_{FM} = 6800A$ $T_{VJ} = 190^\circ\text{C}$ | : | 1.05V |
| R_{th} | (J-HS) double side cooled | : | 0.016 K/W |
| | single side cooled | : | 0.032 K/W |
| I_{RRM} | : $T_J = 190^\circ\text{C}$ $V_{RM} = V_{RRM(\text{Max})}$ | : | 60 mA |
| Q_{RA} | : $I_{TM} =$ $T_{VJ} =$ | : | |
| | : $V_{RM} =$ $T_{VJ} =$ | : | |
| Mounting Force | | : | 2700-3400 Kg.F |
| Outline Drawing | | : | 100A270 |
| JEDEC Outline No. | | : | DO-200AD |

CONTENTS

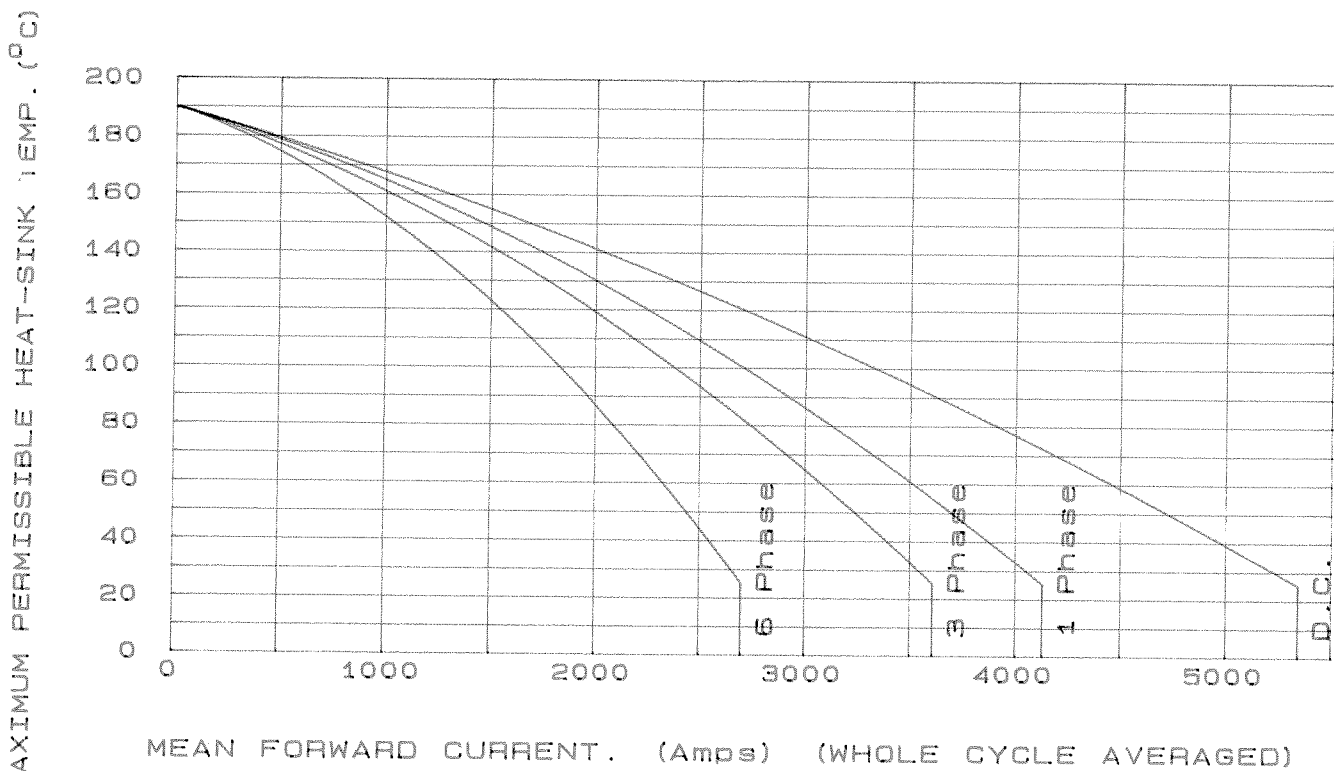
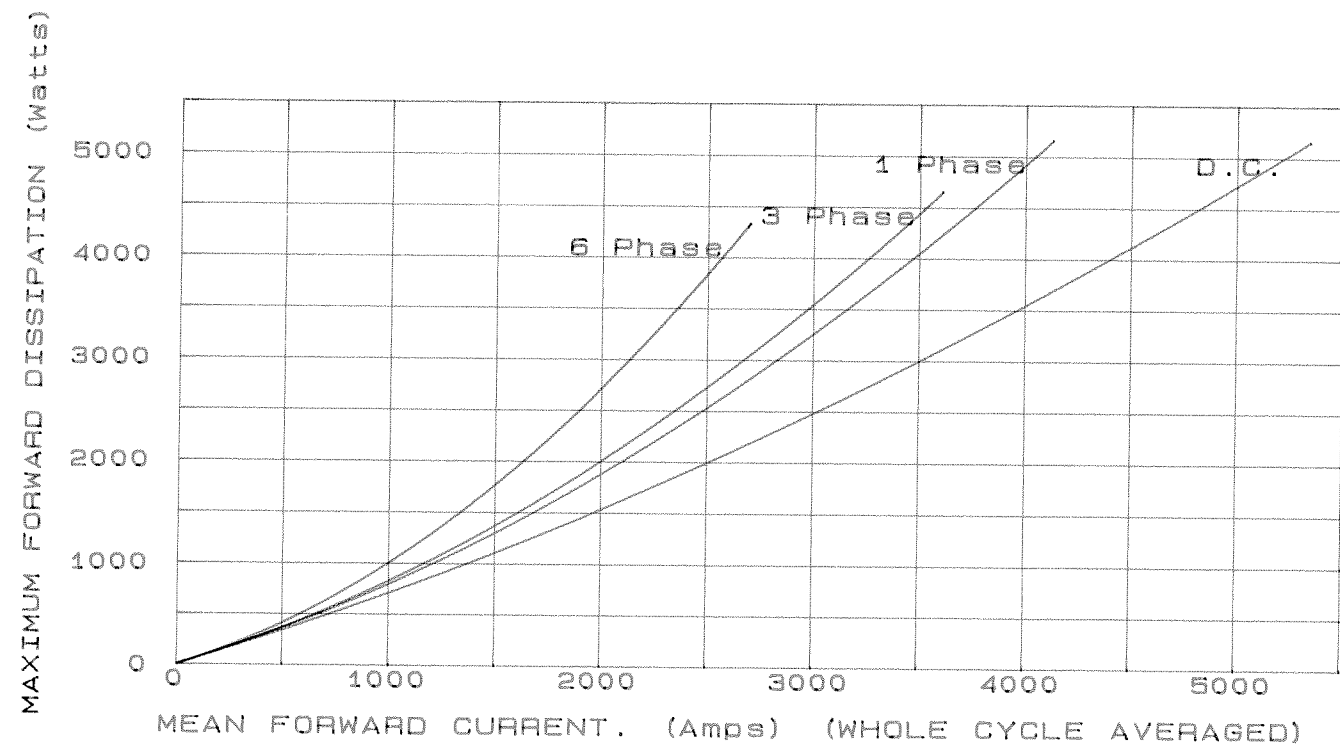
| | <u>Page</u> |
|--|-------------|
| Ratings | 1 |
| Characteristics | 2 |
| Contents | 3 |
| Voltage Ratings | 4 |
| Dissipation and Heatsink Temperature vs Mean Current | 5 & 6 |
| Limit Forward Voltage Characteristic | 7 |
| Transient Thermal Impedance Characteristic | 8 |
| Surge Current and I^2t vs Duration of Surge | 9 |
| Outline Drawing | 10 |

Voltage Ratings

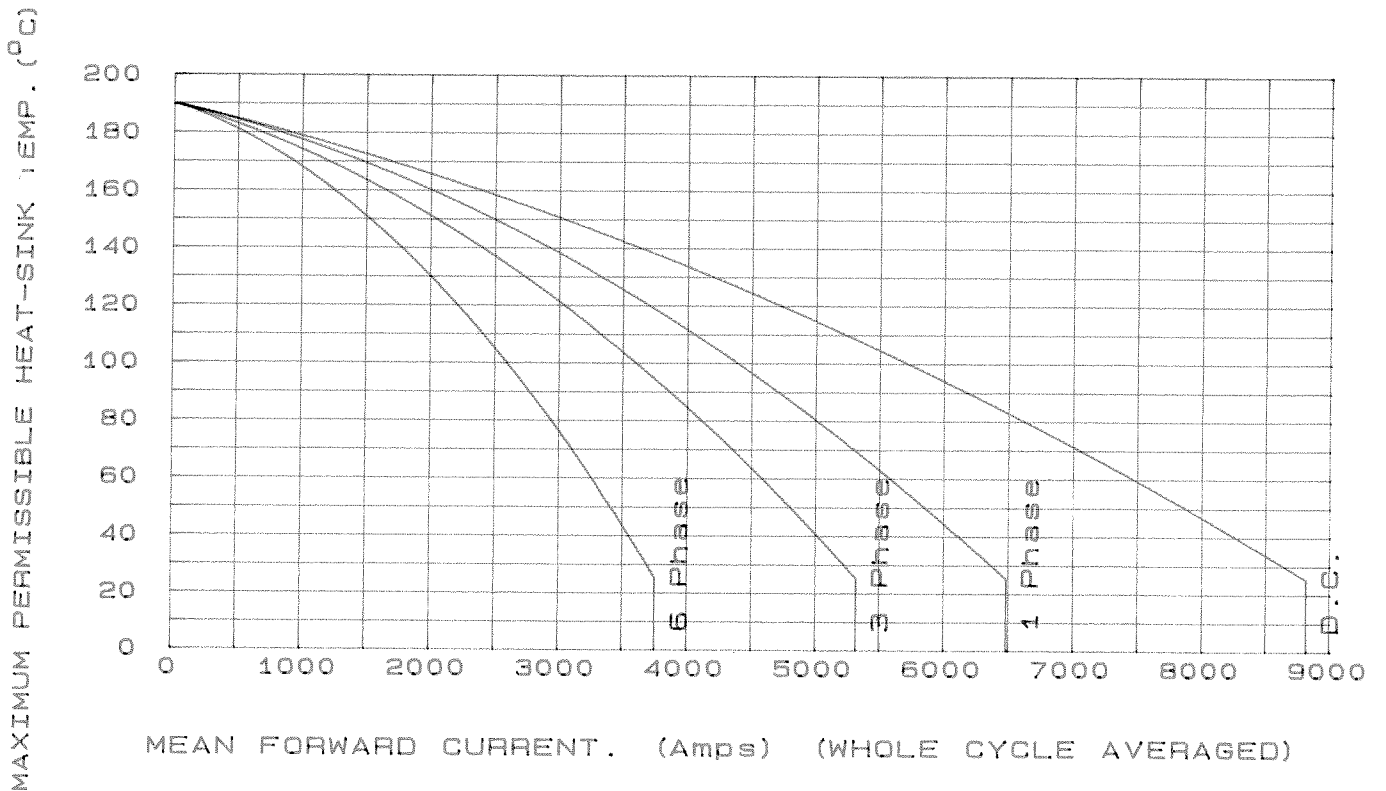
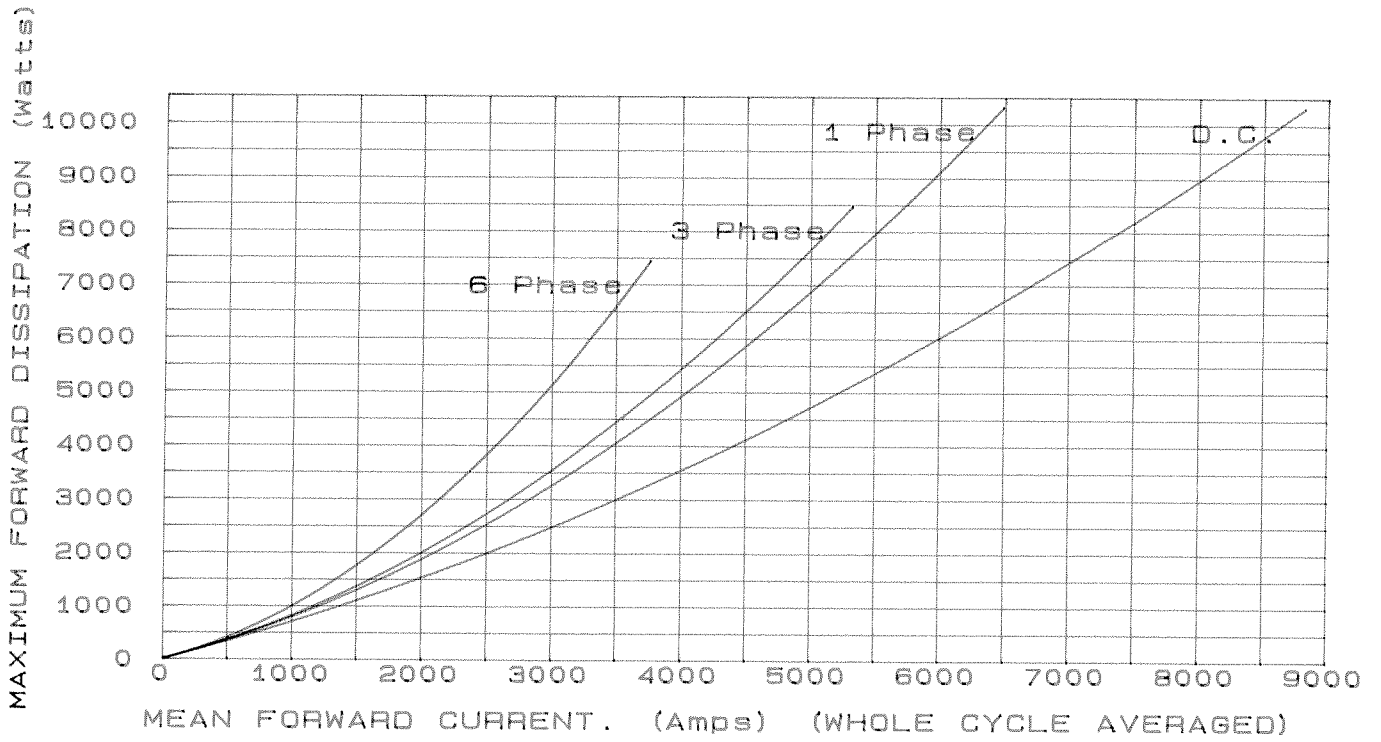
| Voltage Class | V_{RRM} V | V_{RSM} V |
|---------------|----------------|----------------|
| 2 | 200 | 300 |
| 4 | 400 | 500 |
| 6 | 600 | 700 |
| 8 | 800 | 900 |
| 10 | 1000 | 1100 |
| 12 | 1200 | 1300 |
| 14 | 1400 | 1500 |

This Report is applicable to higher or lower voltage grades when supply has been agreed by Sales/Production.

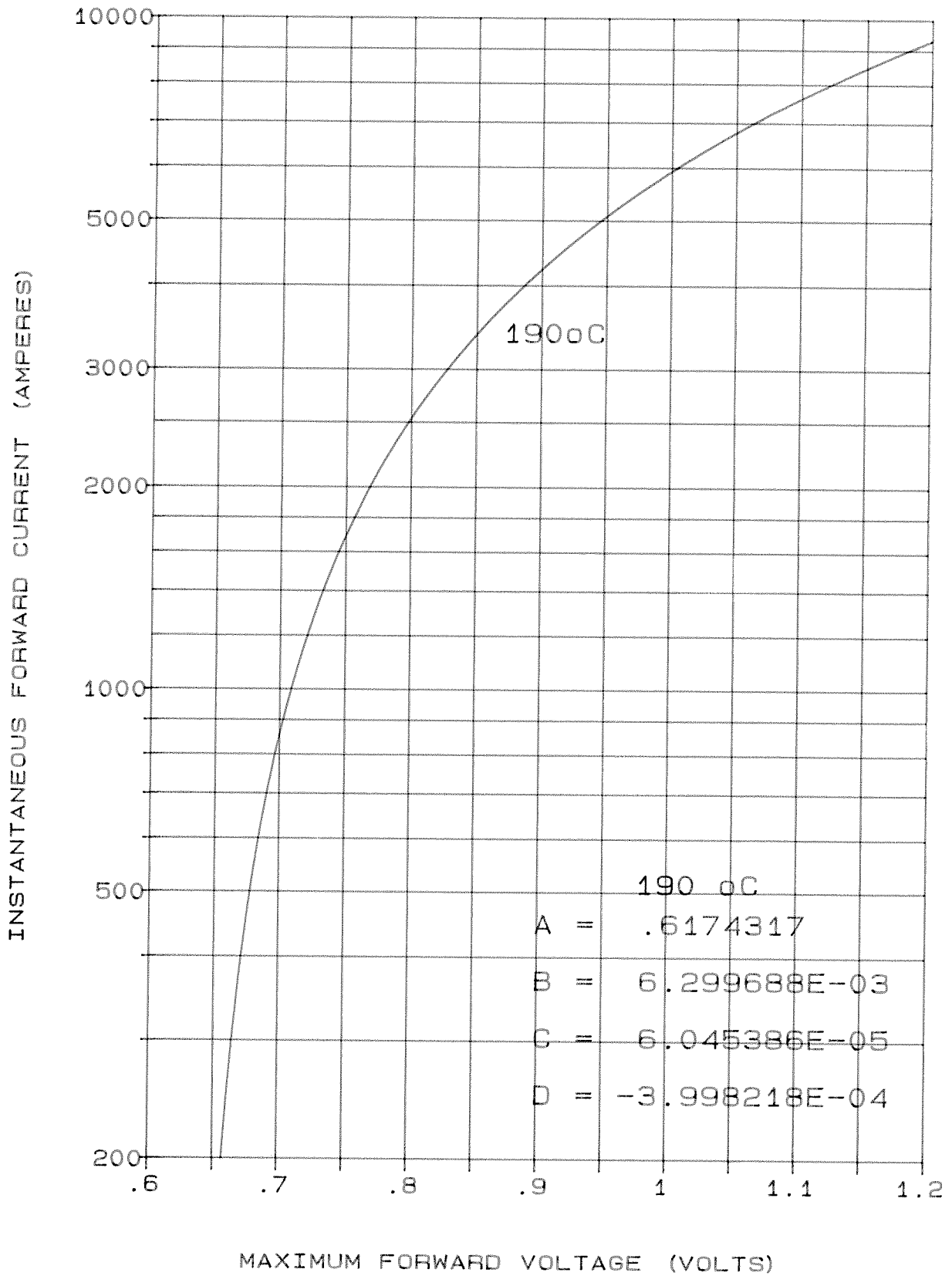
SINGLE SIDE COOLED



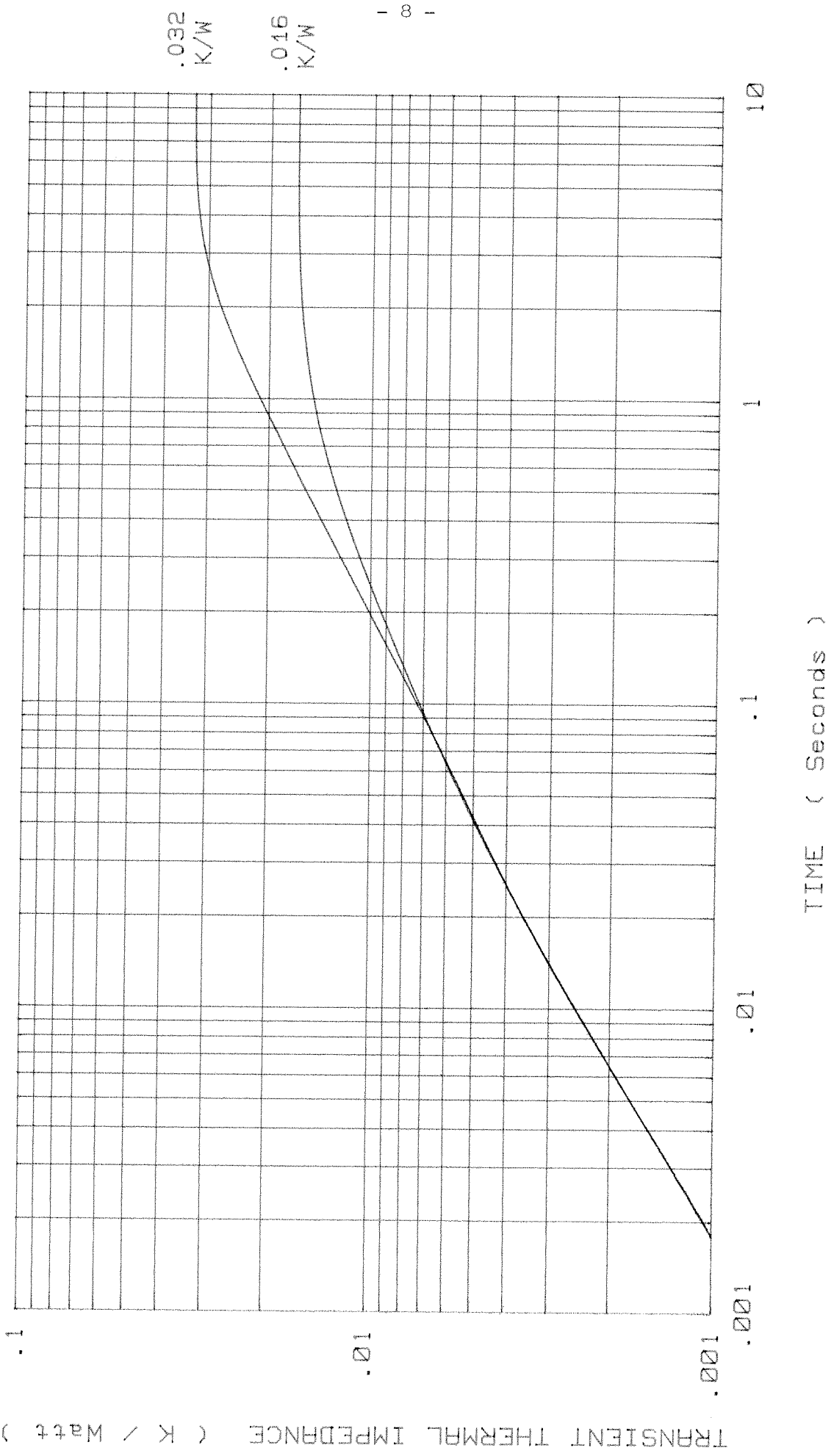
DOUBLE SIDE COOLED



FORWARD CHARACTERISTIC OF LIMIT DEVICE

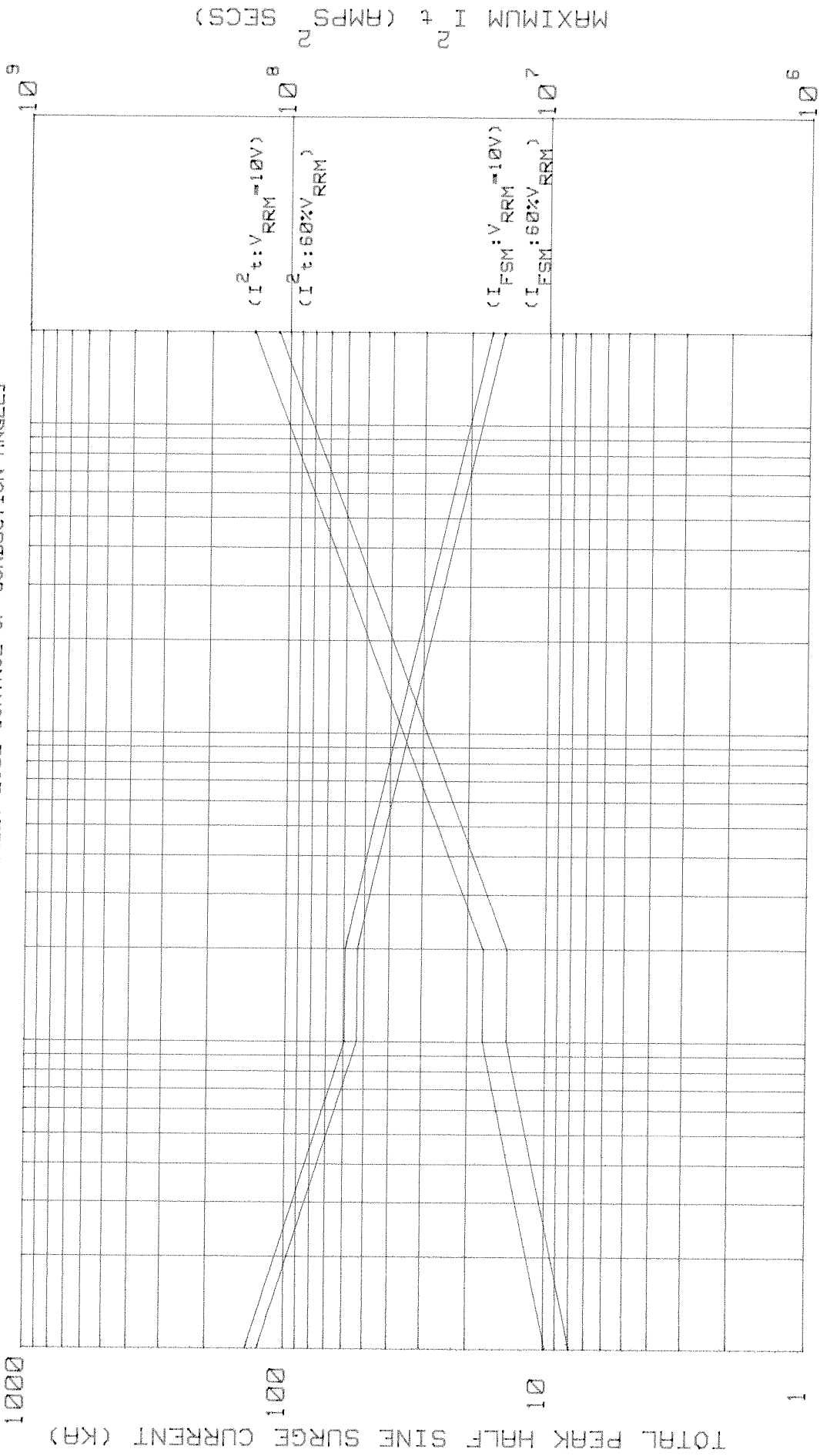


JUNCTION TO SINK TRANSIENT THERMAL IMPEDANCE



MAXIMUM NON REPETITIVE SURGE CURRENT AT INITIAL JUNCTION TEMPERATURE 190° C

[GATE MAY TEMPORARILY LOSE CONTROL OF CONDUCTION ANGLE]



DURATION OF SURGE (ms) DURATION OF SURGE (cycles at 50 Hz)

INTERNATIONAL OUTLINE No. DO-200AD

G.A. DWG No. 159B100H401-H410

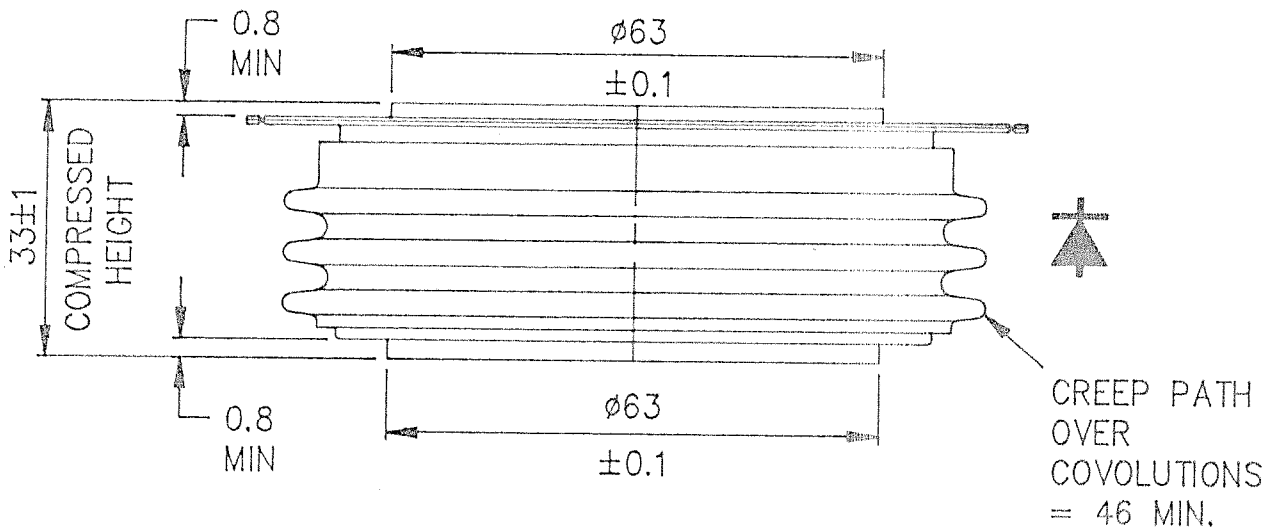
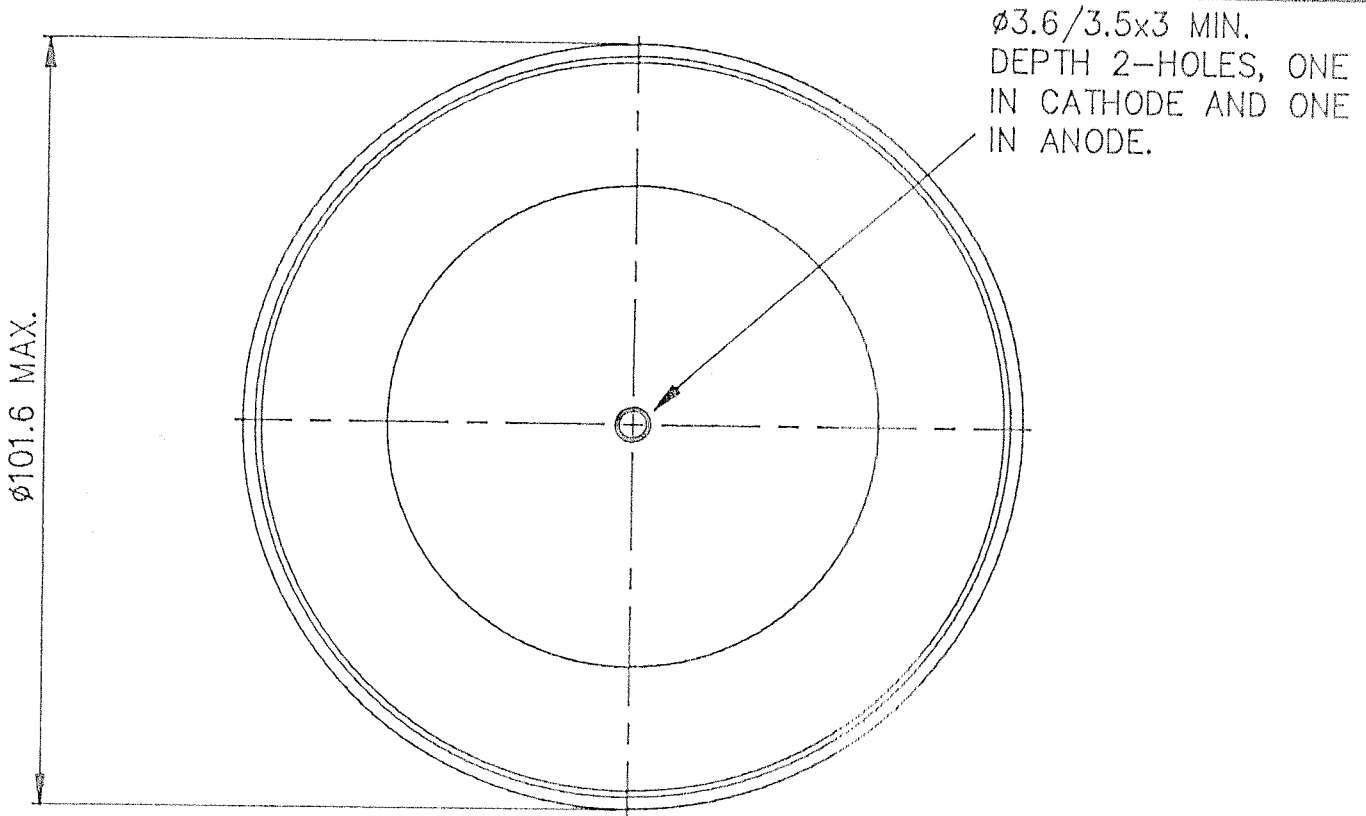
WEIGHT. 1kg

- 10 -

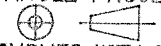

FINISH. ET TO BS1872

CXC13C
CXC16C
CXC22C
CXC27C

DEVICE MOUNTING: CLAMPING FORCE TO BE APPLIED ON CENTRE LINE OF LOCATION HOLES AND BE EVENLY DISTRIBUTED OVER AREA OF CONTACT. FLAT TOL. ON SURFACES TO WHICH DEVICE IS CLAMPED TO BE 0.04 WIDE. CLAMPING FORCE = 2700-3400kgf.



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| | | | |
|---|-----|--------------------------------------|--|
| SCALE 1/1 | ISS | REVISIONS | THIRD ANGLE PROJECTION.  DWG. COMPLIES WITH BS 308. DIMNS. IN MILLIMETRES. |
| DRAWN HDN | 2 | 11-09-90 REDRAWN ON CAD HDN | |
|  WESTCODE SEMICONDUCTORS LTD., P.O. BOX 57, CHIPPENHAM, WILTSHIRE, SN15 1JL, ENGLAND. TEL 0249 654141. TELEX 44751 WESCDE G. TELEFAX 0249 659448. | | | |