

Rectifier Diode

Types W5439V#020 to W5439V#140

The data sheet on the subsequent pages of this document is a scanned copy of existing data for this product.

(Rating Report 90NR23 Issue 1)

This data reflects the old part number for this product which is: SW02-14CXC22C.
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](#) – 26mm 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

W5439	V#	◆◆	0
Fixed Type Code	VC – 37mm clamp height capsule VD – 26mm clamp height capsule	Voltage code $V_{RRM}/100$ 02-14	Fixed Code
Typical Order Code: W5439VC140, 33mm clamp height capsule, 1400V V_{RRM}			

IXYS Semiconductor GmbH

Edisonstraße 15
D-68623 Lampertheim
Tel: +49 6206 503-0
Fax: +49 6206 503-627
E-mail: marcom@ixys.de

IXYS Corporation

3540 Bassett Street
Santa Clara CA 95054 USA
Tel: +1 (408) 982 0700
Fax: +1 (408) 496 0670
E-mail: sales@ixys.net

WESTCODE

An  IXYS Company

www.westcode.com

www.ixys.com

Westcode Semiconductors Ltd

Langley Park Way, Langley Park,
Chippenham, Wiltshire, SN15 1GE.
Tel: +44 (0)1249 444524
Fax: +44 (0)1249 659448
E-mail: WSL.sales@westcode.com

Westcode Semiconductors Inc

3270 Cherry Avenue
Long Beach CA 90807 USA
Tel: +1 (562) 595 6971
Fax: +1 (562) 595 8182
E-mail: WSI.sales@westcode.com

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.

In the interest of product improvement, Westcode reserves the right to change specifications at any time without prior notice.

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.

QUALITY EVALUATION LABORATORY

Rating Report: 90NR23

Date: 17th October, 1990

Pages: 10

Diode Type SW02-14CXC22C

Written by: M. Baker

Checked: *M Baker*

Approved: *[Signature]*

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

This report supersedes Rating Report No. 89NR3.

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 $T_{HS} = 55^{\circ}C, 100^{\circ}C$	: 5440A, 4190A
Single side cooled $T_{HS} = 100^{\circ}C$	: 2600A
I_F (rms) max.)	: 9700A
Double side cooled $T_{HS} = 25^{\circ}C$	
I_F max.)	: 8470A
I_{FSM} : $t = 10ms$ half sinewave; T_J (initial) = $190^{\circ}C$;	
$V_{RM} = 0.6 V_{RRM}^{(Max)}$	: 52000A
I_{FSM} ; $t = 10ms$ half sinewave; T_J (initial) = $190^{\circ}C$; $V_{RM} \leq 10V$	: 57000A
I^2t : $t = 10ms$; T_J (initial) = $190^{\circ}C$; $V_{RM} = 0.6 V_{RRM}^{(Max)}$	: $13.5 \times 10^6 A^2 SECS$
I^2t : $t = 10ms$; T_J (initial) = $190^{\circ}C$; $V_{RM} \leq 10V$	: $16.2 \times 10^6 A^2 SECS$
I^2t : $t = 3ms$; T_J (initial) = $190^{\circ}C$; $V_{RM} \leq 10V$	: $12.6 \times 10^6 A^2 SECS$
T_{HS} Operating range	: -55 to $+190^{\circ}C$
T_{stg} ; Non-operating	: -55 to $+200^{\circ}C$

Characteristics

(Maximum values unless stated otherwise)

V_O : $T_J = 190^{\circ}\text{C}$: 0.65V
 r_s : $T_J = 190^{\circ}\text{C}$: 0.067 mohms

COLD

A : $T_J = 25^{\circ}\text{C}$:
 B : $T_J \leq 25^{\circ}\text{C}$:
 C : $T_J = 25^{\circ}\text{C}$:
 D : $T_J = 25^{\circ}\text{C}$:

HOT

A : (Constant) : 0.6525006
 B : $(B \times \ln i)$: -1.430053E-3
 C : $(C \times i)$: 6.549698E-5
 D : $(D \times \sqrt{i})$: 2.360472E-4

V_{FM} : $I_{FM} = 6800A$ $T_{VJ} = 190^{\circ}\text{C}$: 1.11V

R_{th} (J-HS) double side cooled : 0.016 K/W
 single side cooled : 0.032 K/W

I_{RRM} : $T_J = 190^{\circ}\text{C}$ $V_{RM} = V_{RRM(Max)}$: 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

Changes to Rating Report No. 89NR3

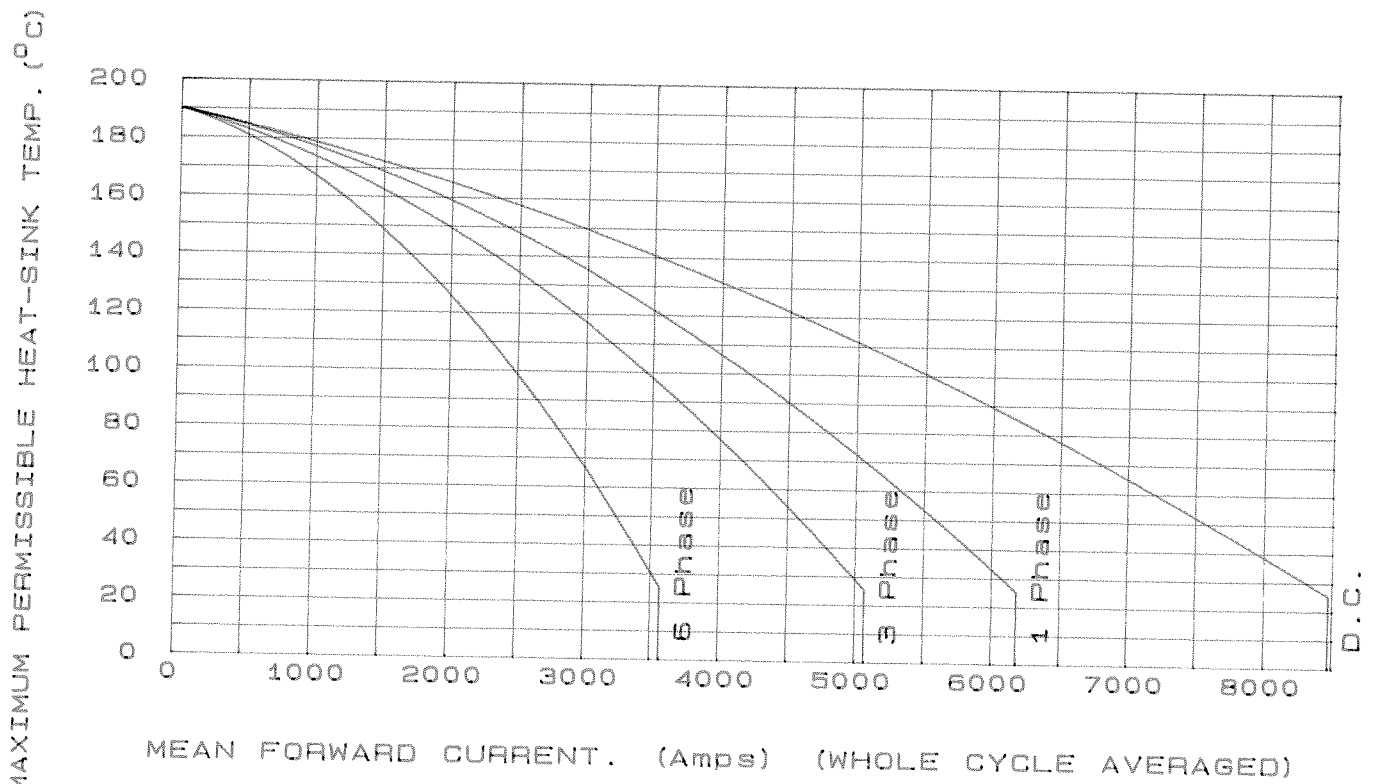
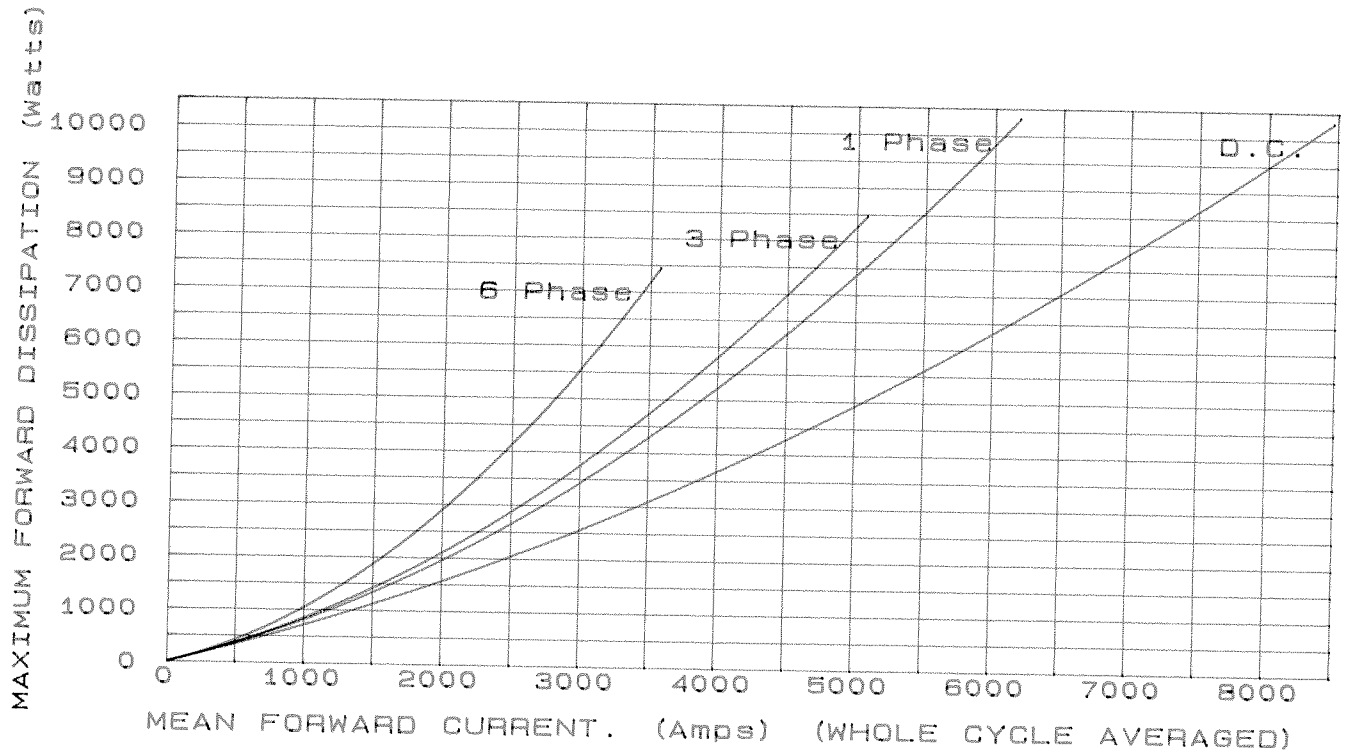
- P1 : Voltage grade V_{RSM} and V_{RRM}
P2 : ABCD co-efficients
P4 : Voltage Class, V_{RSM} and V_{RRM}
P5-9 : Re-drawn

Voltage Ratings

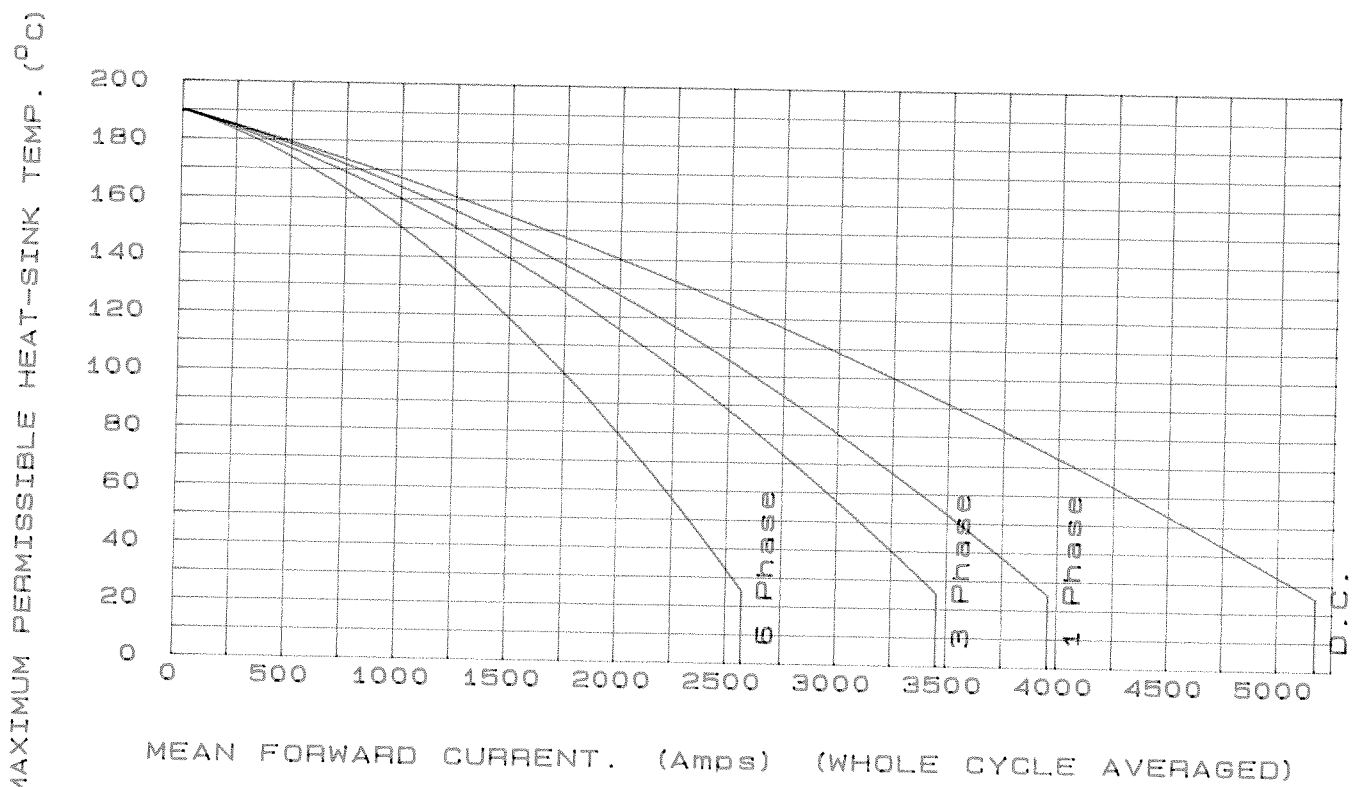
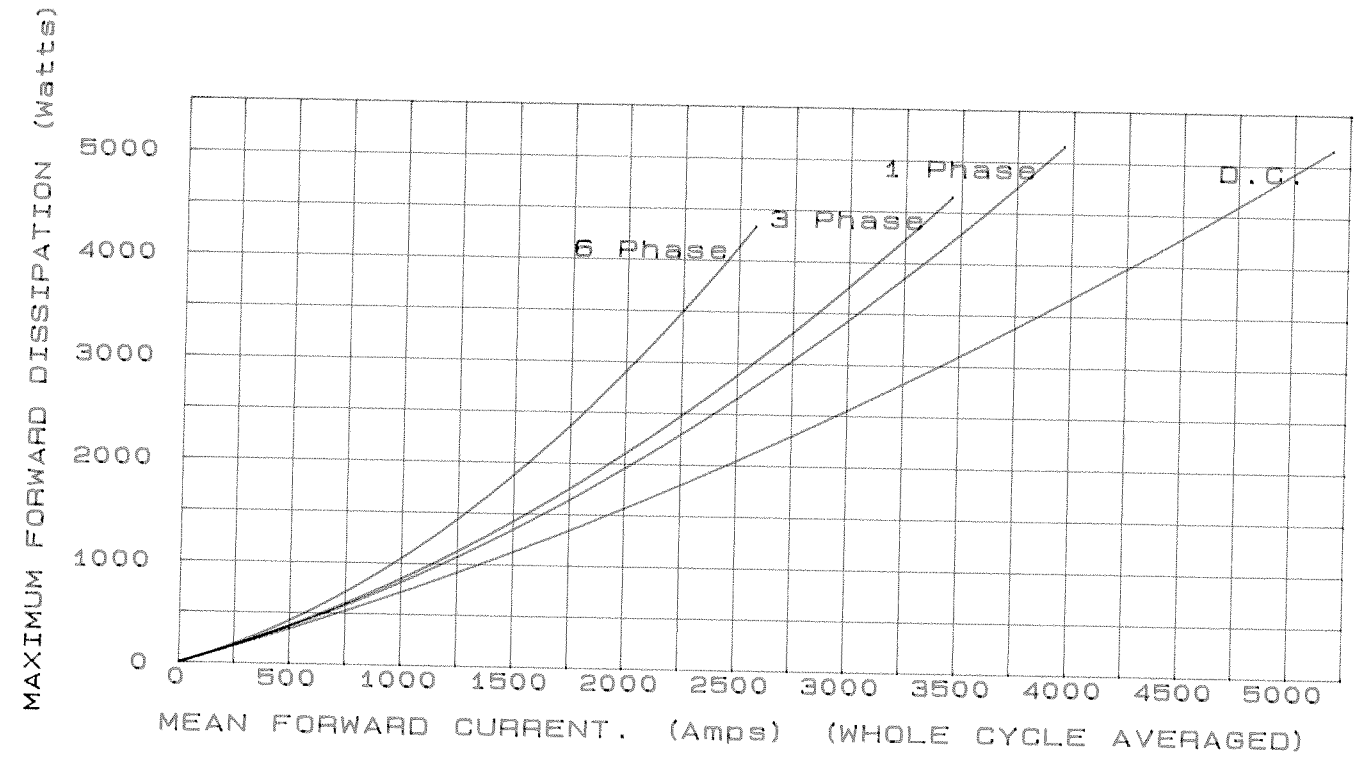
Voltage Class	V_{RRM} V	V_{RSM} V
2	200	300
4	400	500
6	600	700
8	800	900
10	1000	1100
12	1200	1300
14	1400	1500

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

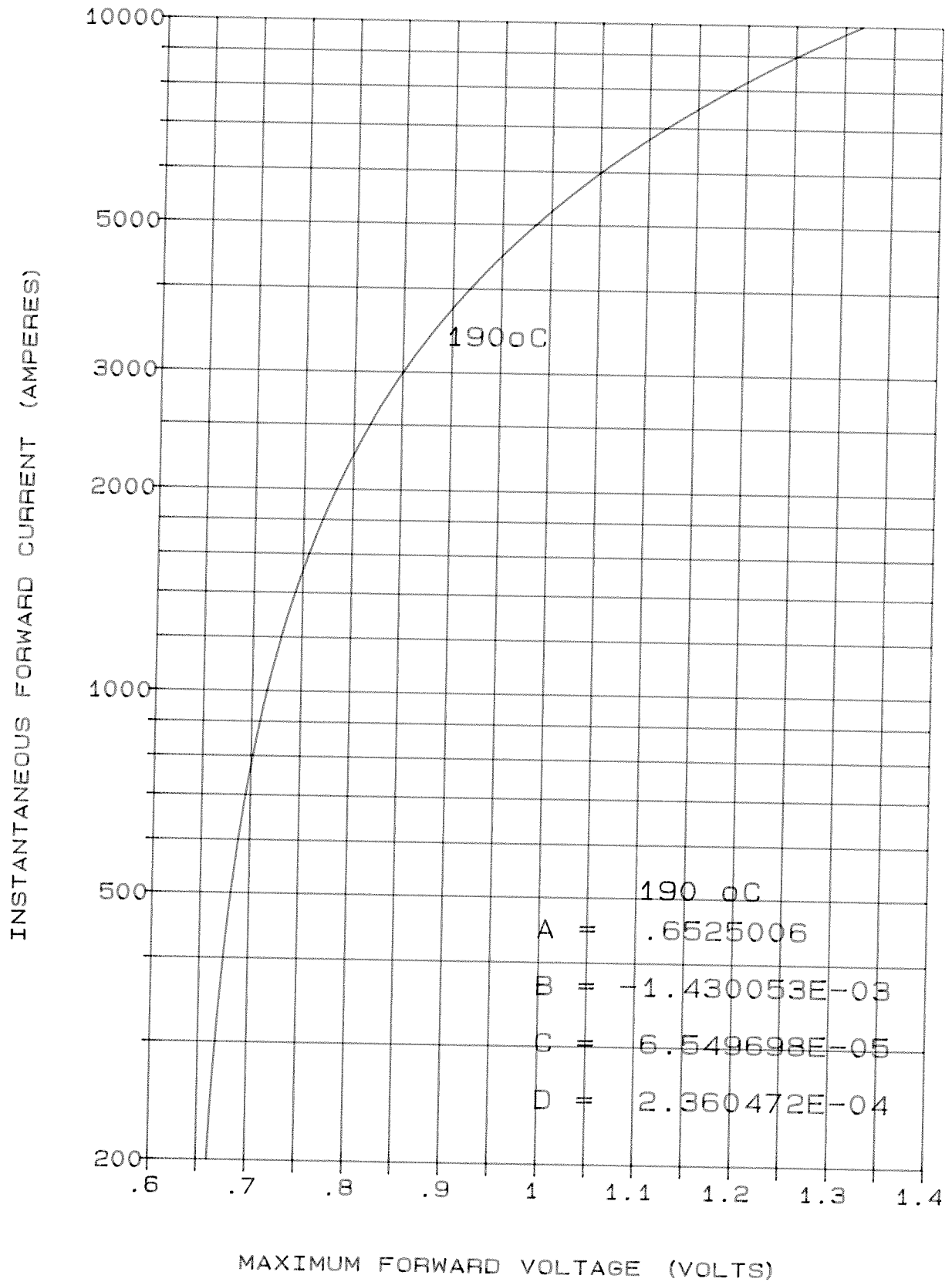
DOUBLE SIDE COOLED



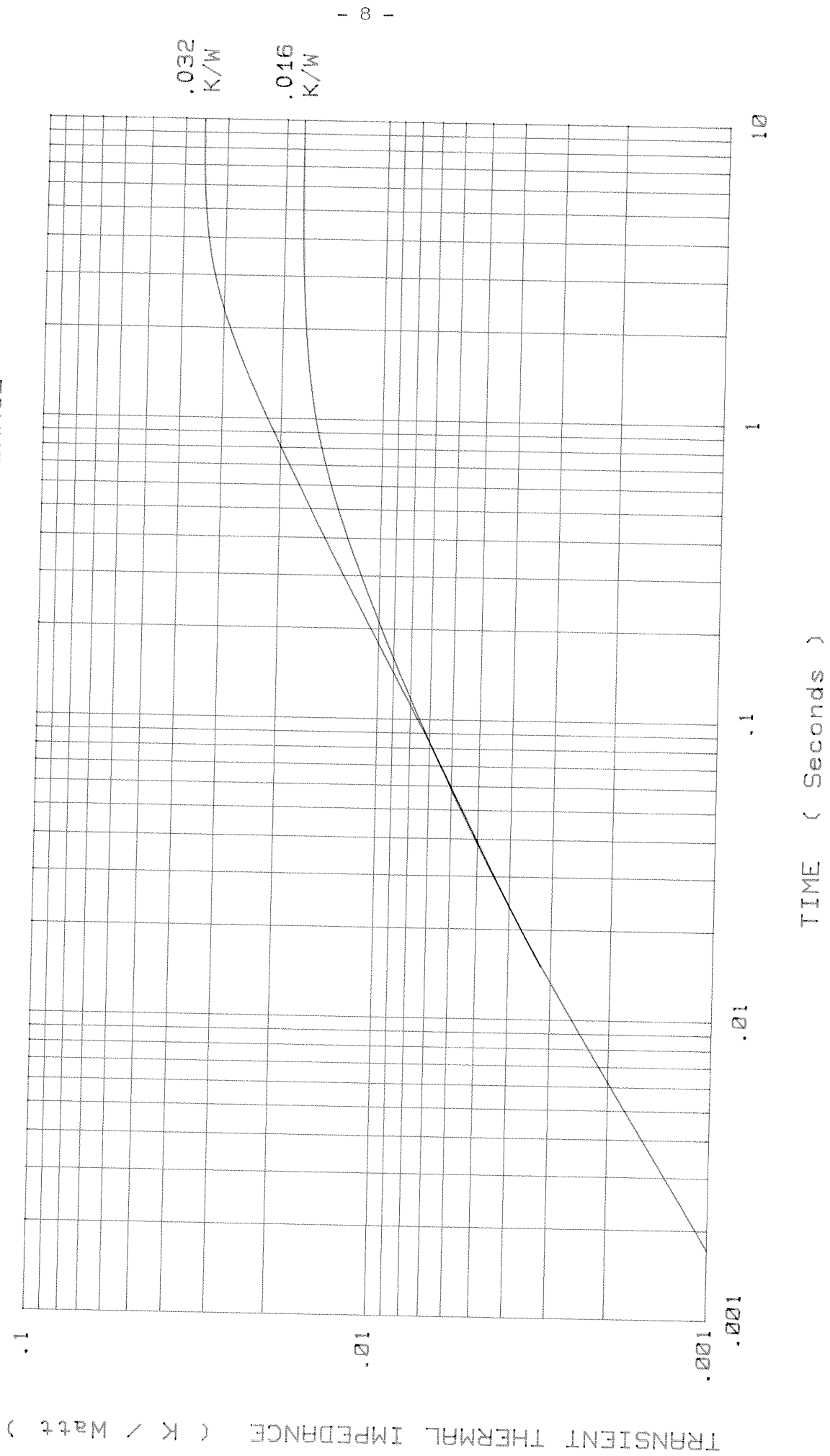
SINGLE SIDE COOLED



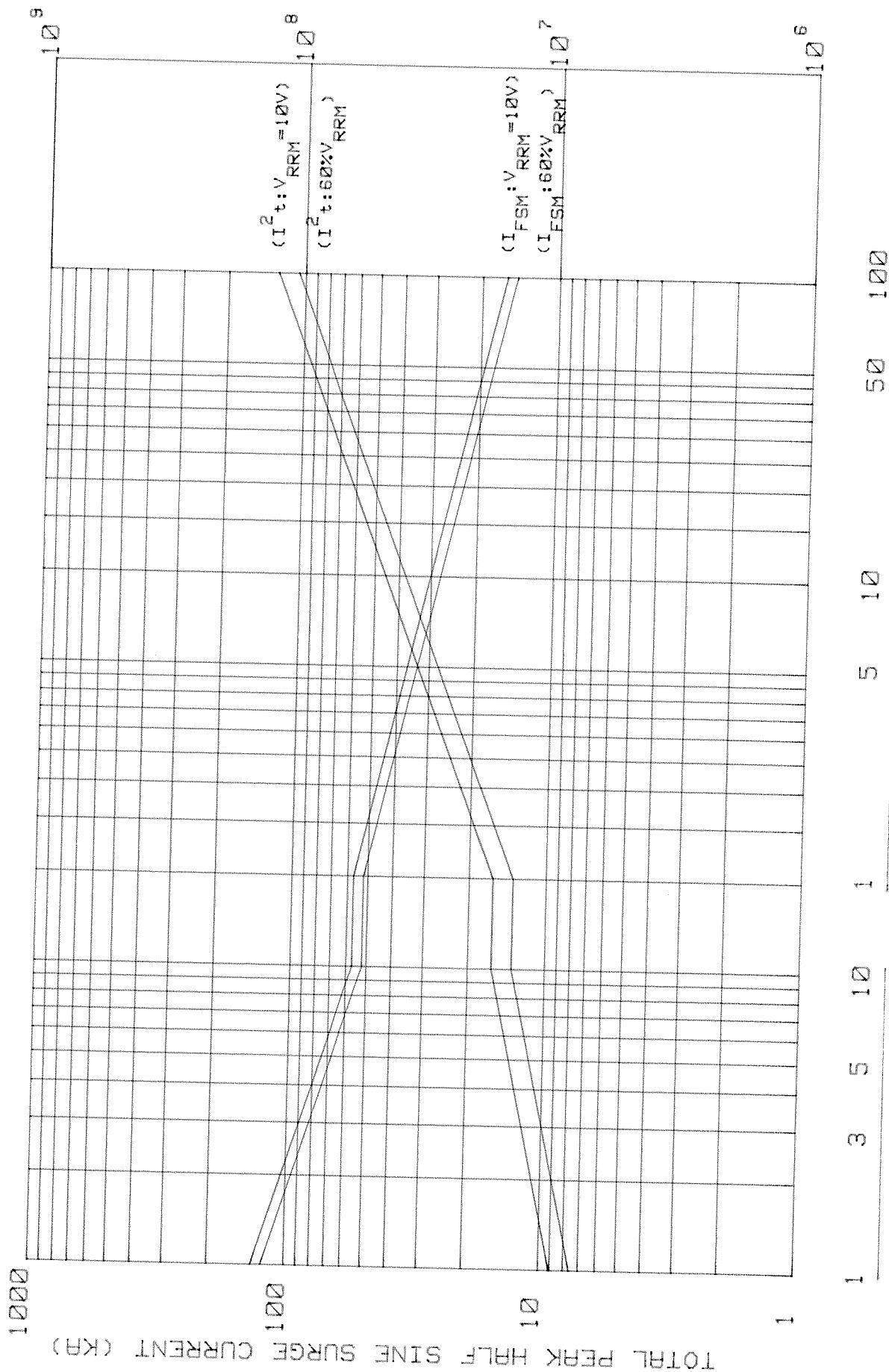
FORWARD CHARACTERISTIC OF LIMIT DEVICE



JUNCTION TO SINK TRANSIENT THERMAL IMPEDANCE



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



DURATION OF SURGE (ms)

DURATION OF SURGE (cycles at 50 Hz)

MAXIMUM I^2t (RMP S² SECS)

INTERNATIONAL OUTLINE No. DO-200AD

G.A. DWG No. 159B100H401-H410

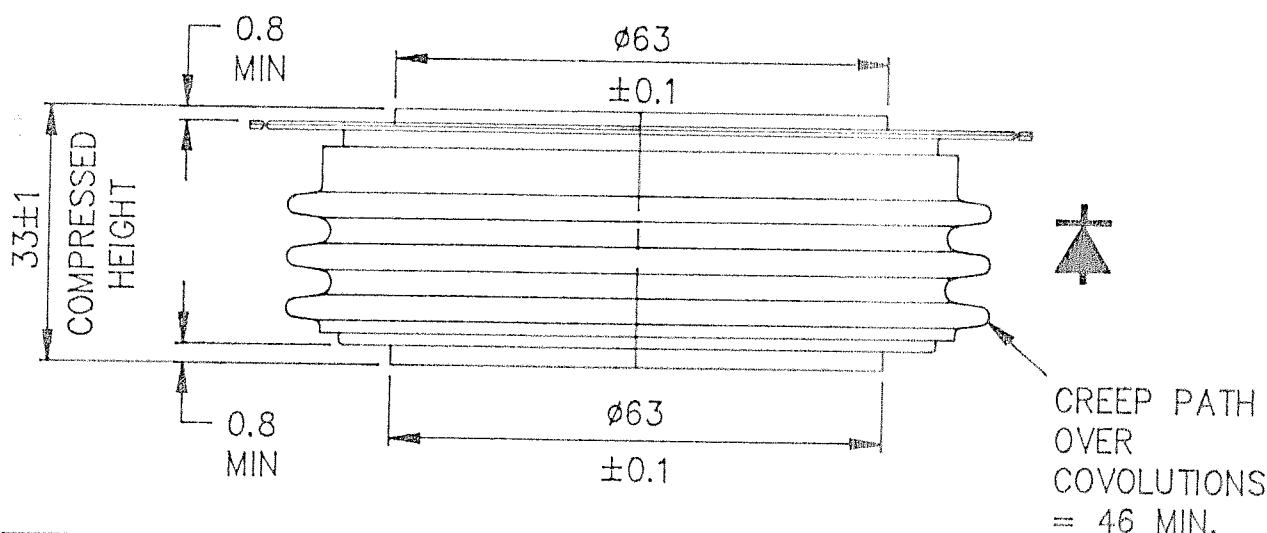
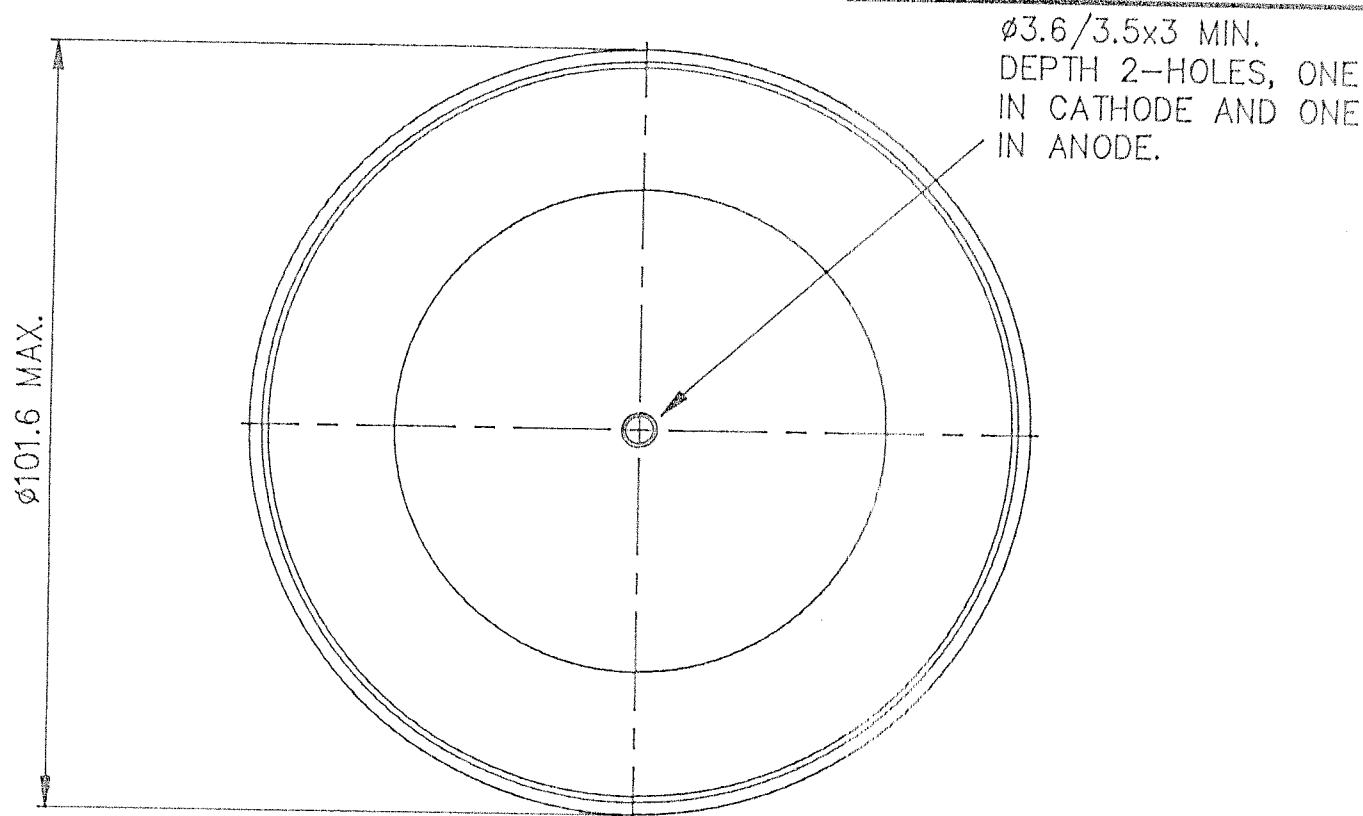
WEIGHT. 1kg

- 10 -

FINISH. ET TO BS1872

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.

CXC13C
CXC16C
CXC22C
CXC27C



THIRD ANGLE PROJECTION.

DWG. COMPLIES WITH BS 308.

DIMNS. IN MILLIMETRES.

DWG No.

100A270



WESTCODE SEMICONDUCTORS LTD.,
P.O. BOX 57, CHIPPENHAM, WILTSHIRE, SN15 1JL, ENGLAND.
TEL 0249 654141. TELEX 44751 WESCDE G. TELEFAX 0249 650448.

THE INFORMATION CONTAINED IN THIS DWG IS PROTECTED BY COPYRIGHT. THE INFORMATION MAY NOT BE DISCLOSED EXCEPT WITH THE WRITTEN PERMISSION OF WESTCODE SEMICONDUCTORS LIMITED.

SCALE 1/1 ISS REVISIONS

DRAWN HDN 2 11-09-90 REDRAWN ON CAD HDN