

Rectifier Diode Stud

Types W0503S/RX160 to W0503S/RX240

The data sheet on the subsequent pages of this document is a scanned copy of existing data for this product.
(Rating Report 87NR24 Issue 1)

This data reflects the old part number for this product which is: SW16-24PHN/R380. 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 S/RC outline drawing (W24) in datasheet
No reverse recovery information available

The following links will direct you to the appropriate outline drawings
[Outline W24](#) – 3/4" Ceramic stud
[Outline W26](#) – 3/4" Ceramic stud removed



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			
W0503	S/RX	◆◆	0
Fixed Type Code	S/RC – 3/4" Ceramic stud S/RD – 3/4" Ceramic stud removed	Voltage code V _{RRM} /100 16-24	Fixed Code
Typical Order Code: W0503SD200, Normal polarity 3/4" Ceramic stud removed, 2000V V _{RRM}			

<p>IXYS Semiconductor GmbH Edisonstraße 15 D-68623 Lampertheim Tel: +49 6206 503-0 Fax: +49 6206 503-627 E-mail: marcom@ixys.de</p>	 <p>An  IXYS Company</p>	<p>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</p>	
<p>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</p>	<p>www.westcode.com</p> <p>www.ixys.com</p>	<p>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</p>	
<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.</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>			<p>© Westcode Semiconductors Ltd.</p>

QUALITY EVALUATION LABORATORY

Rating Report: 87NR24

Date: 30th November, 1987

Origin:

Pages: 9

Diode Type SW16-24PHN/R380

Written by: *mhw Dunlop* Checked: *mhw* Approved: *Bluff*

This diode consists of a diffused 24 mm diameter silicon slice mounted under spring pressure in a stud base top hat housing with a flexible lead.

This Report supersedes Rating Report No. 79NR16 (Issue 2).

Ratings

Voltage Grades	: 16-24
V_{RSM}	: 1700-2500V
V_{RRM}	: 1600-2400V
$I_{F(AV)}$: Single phase; 50 Hz, 180° half sinewave, $T_C = 100^\circ C$: 370A
$I_{F(rms) \text{ max.}}$: 597A
$I_{F \text{ d.c. max.}}$: 550A
I_{FSM} : t = 10 ms half sinewave; T_J (initial) = 180°C ; $V_{RM} = 0.6V_{RRM(MAX)}$: 5500A
I_{FSM} : t = 10 ms half sinewave; T_J (initial) = 180°C ; $V_{RM} = 10V$: 6050A
I^2t : t = 10 ms; T_J (initial) = 180°C; $V_{RM} = 0.6V_{RRM(MAX)}$: $0.151 \times 10^6 A^2 SEC$
I^2t : t = 10 ms; T_J (initial) = 180°C; $V_{RM} \leq 10V$: $0.183 \times 10^6 A^2 SEC$
I^2t : t = 3 ms; T_J (initial) = 180°C; $V_{RM} \leq 10V$: $0.135 \times 10^6 A^2 SEC$
T_C Operating Range	: -40 to +180°C
T_{stg} Non-operating	: -40 to +200°C

Characteristics

(Maximum values unless otherwise stated)

V_D : $T_J = 180^\circ\text{C}$:	0.99V
r_s : $T_J = 180^\circ\text{C}$:	0.74mohms
V_{FM} : $I_{FM} = 1200\text{A}$ $T_{VJ} = 180^\circ\text{C}$:	1.88V
$R_{th} (J-C)$:	0.13°C/W
$R_{th} (C-HS)$:	0.04°C/W
I_{RRM} : $T_J = 180^\circ\text{C}$ $V_{RM} = V_{RRM} (MAX)$:	15mA
Q_{rr} :) $I_{FM} = 1000\text{A}$: dI/dt : 10A/uS defined by chord) $V_{RM} : 50\text{V}$ $T_{VJ} = 180^\circ\text{C}$) through 50% I_{RM}	:	680uC Typical
t_{rr})	:	
Mounting torque	:	2.5 - 2.77Kg.m
Outline drawing	:	100A280
JEDEC Outline No.	:	

CONTENTS

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

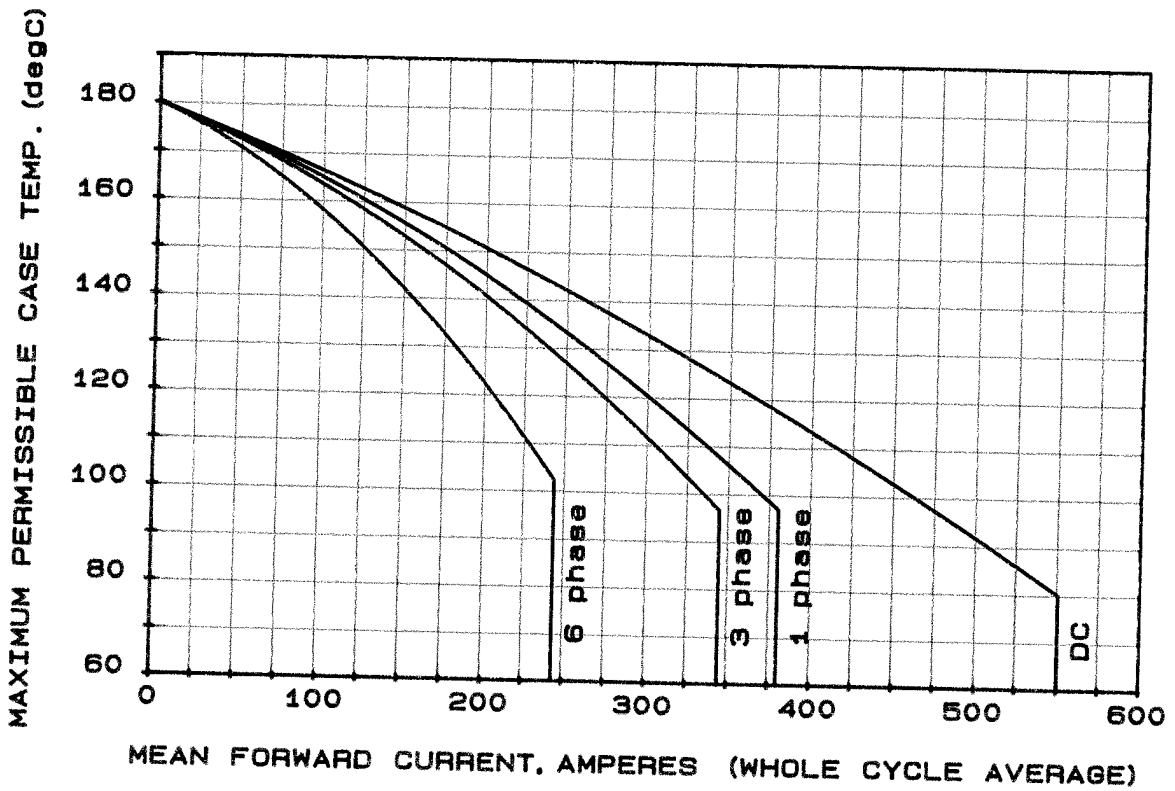
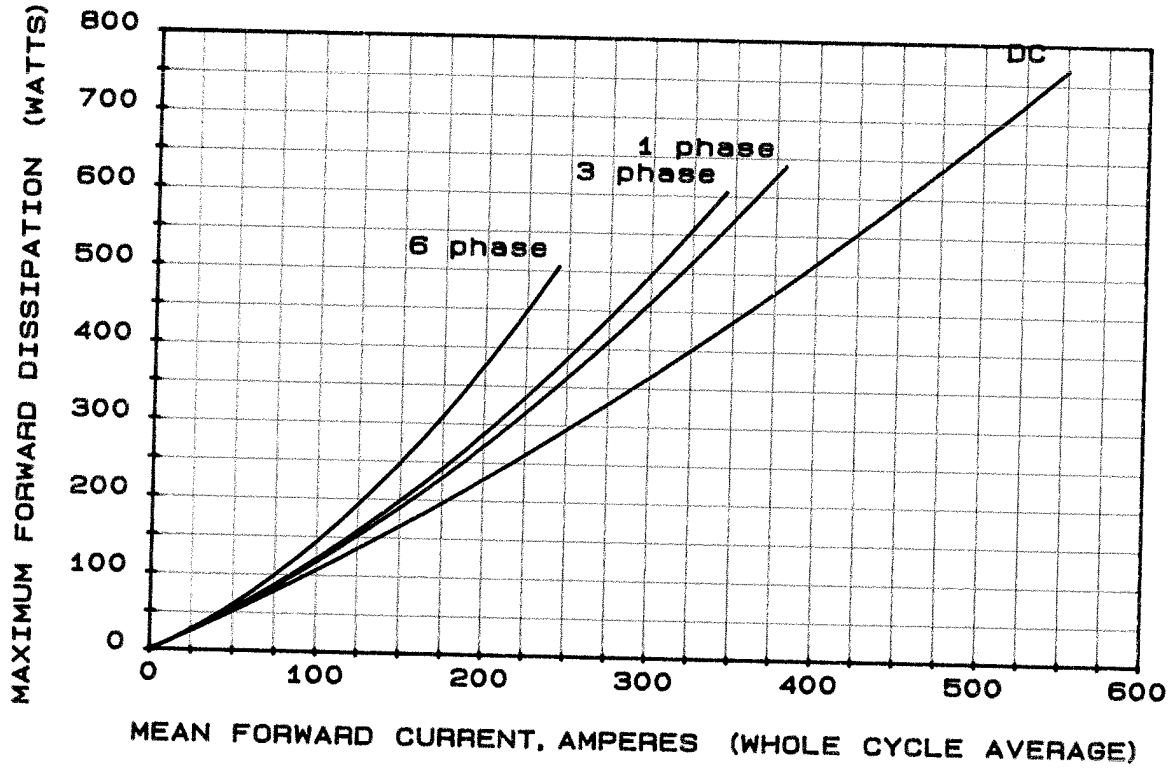
Changes to Rating Report No. 79NR16 (Issue 2)

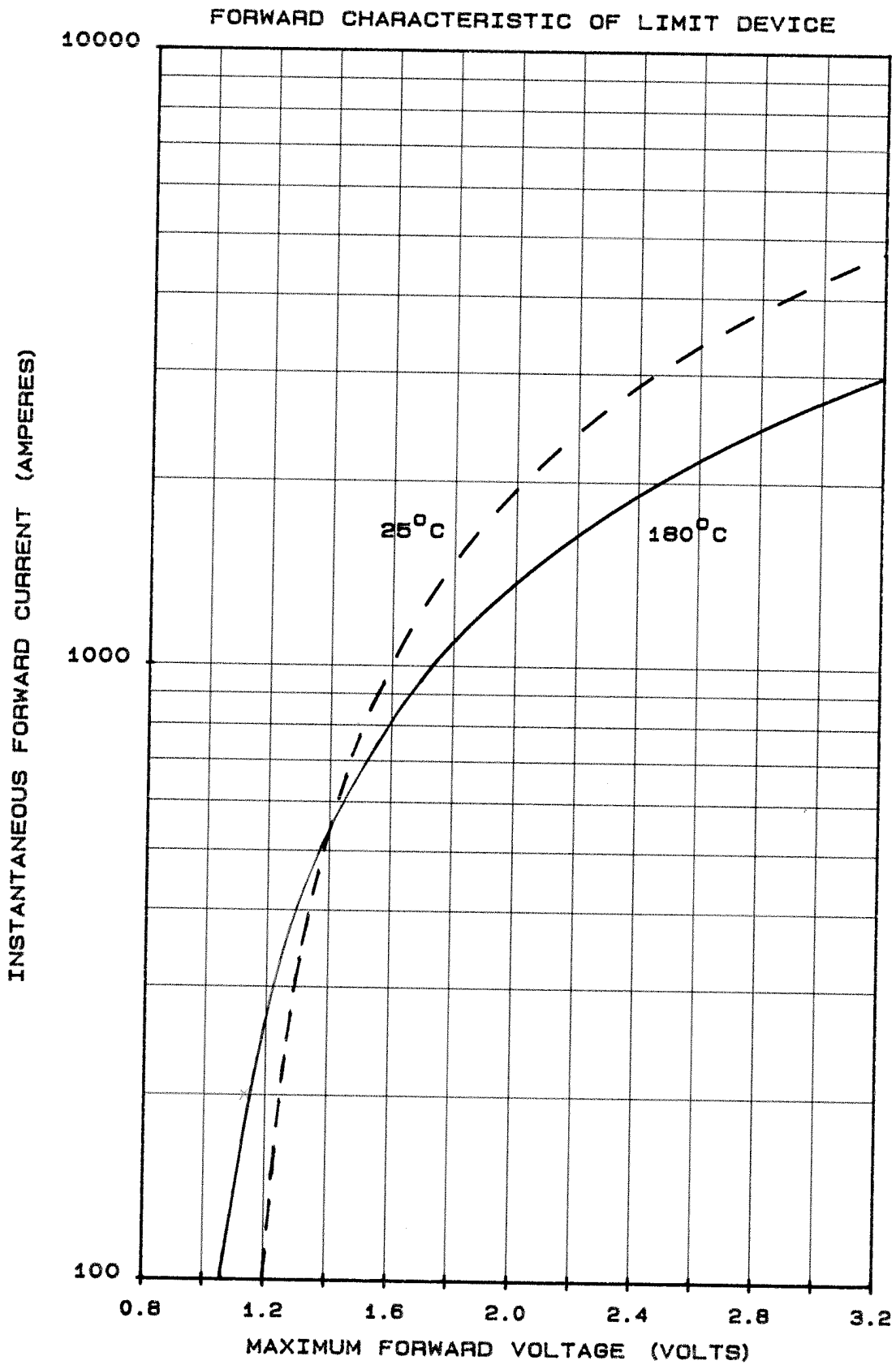
- p1. : V_{RWM} omitted
- $I_{F(DC)}$ changed
- T_C operating ranged (MIN) reduced to -40°C
- p4 : V_{RWM} omitted
- p5-8 : Re-drawn
- P9 : Updated

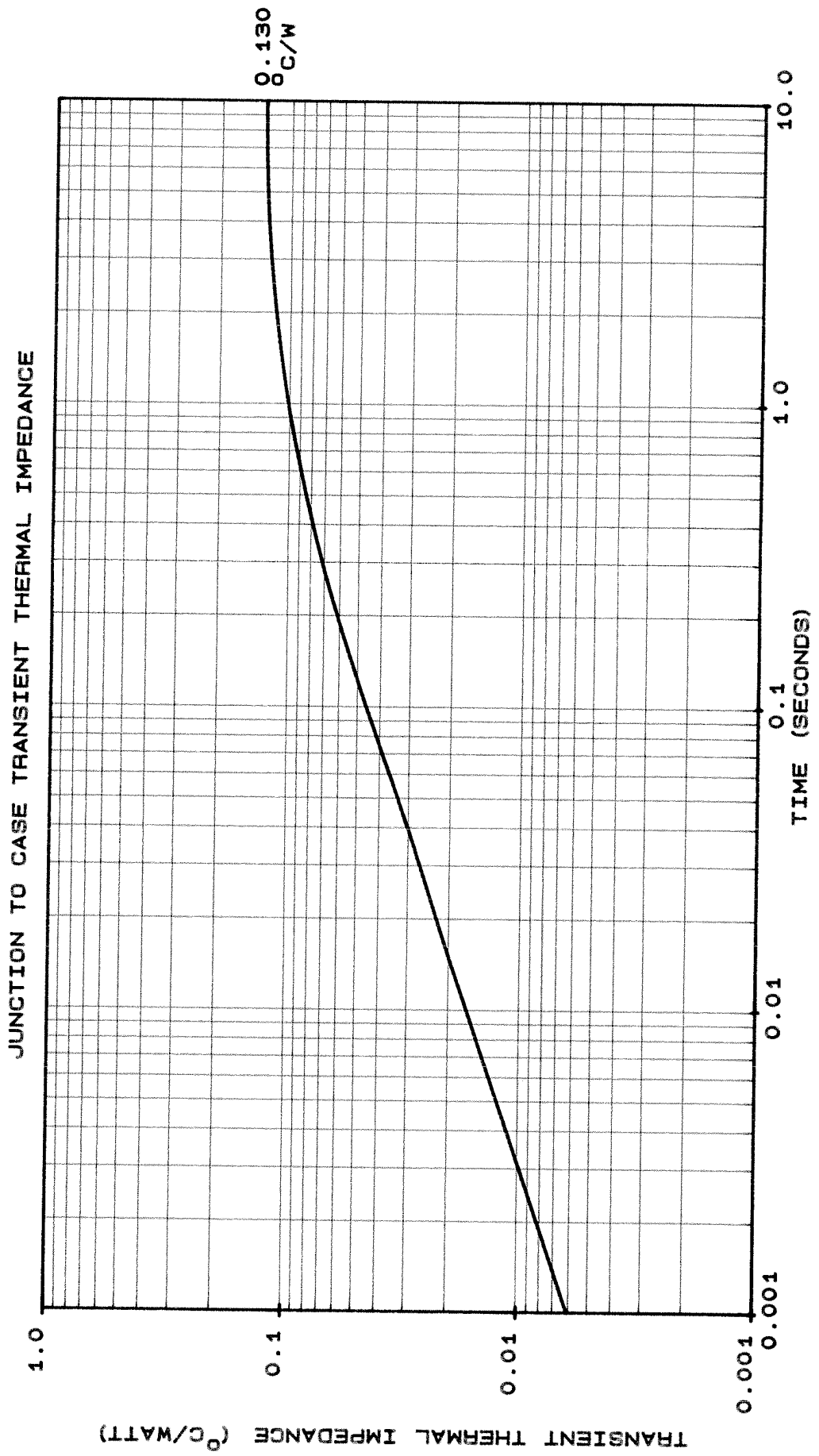
Voltage Ratings

Voltage Class	V_{RRM} V	V_{RSM} V
16	1600	1700
18	1800	1900
20	2000	2100
22	2200	2300
24	2400	2500

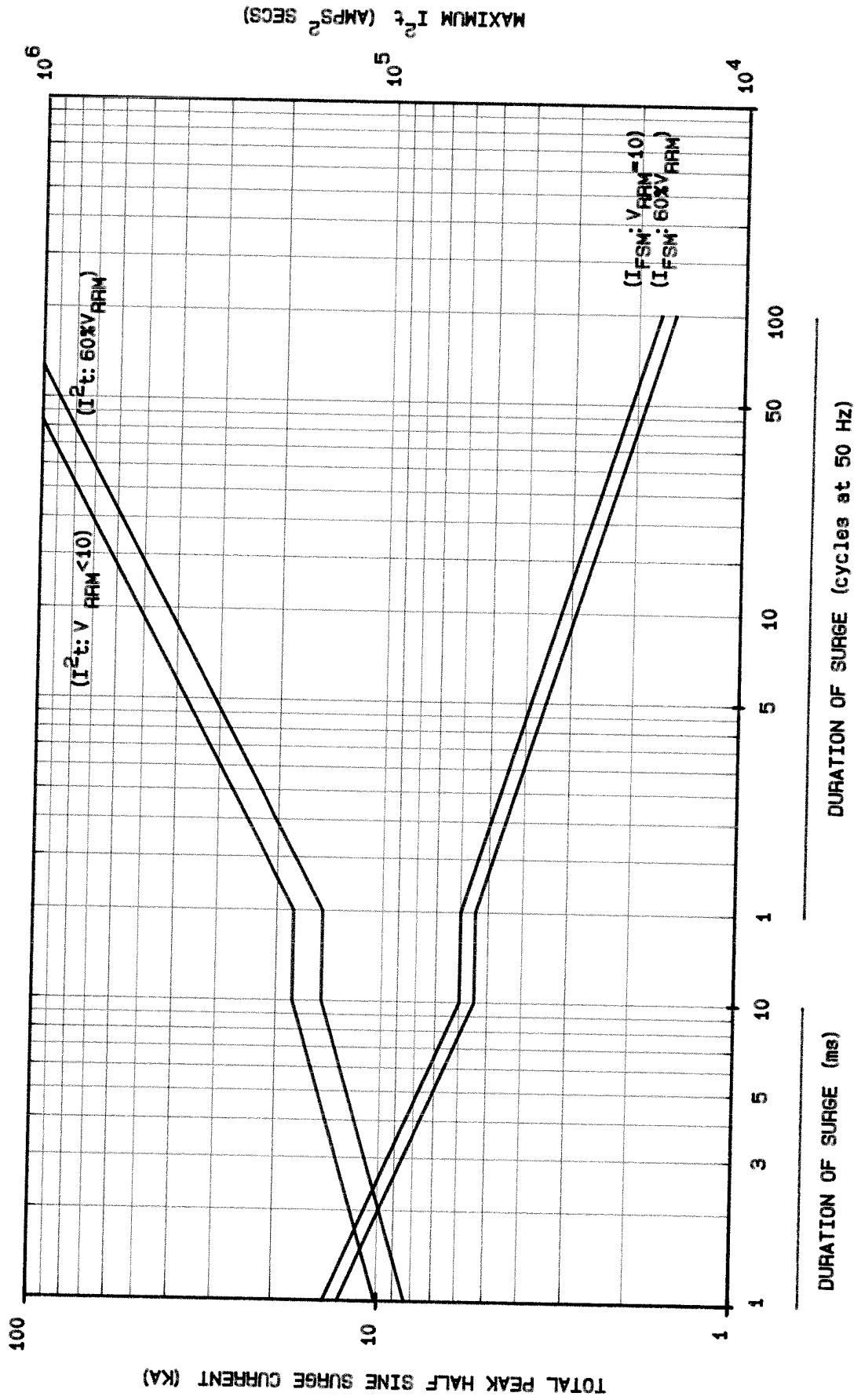
This Report is applicable to higher or lower voltage grades when supply has been agreed by Sales/Production.







MAXIMUM NON REPETITIVE SURGE CURRENT AT INITIAL JUNCTION TEMPERATURE 180°C

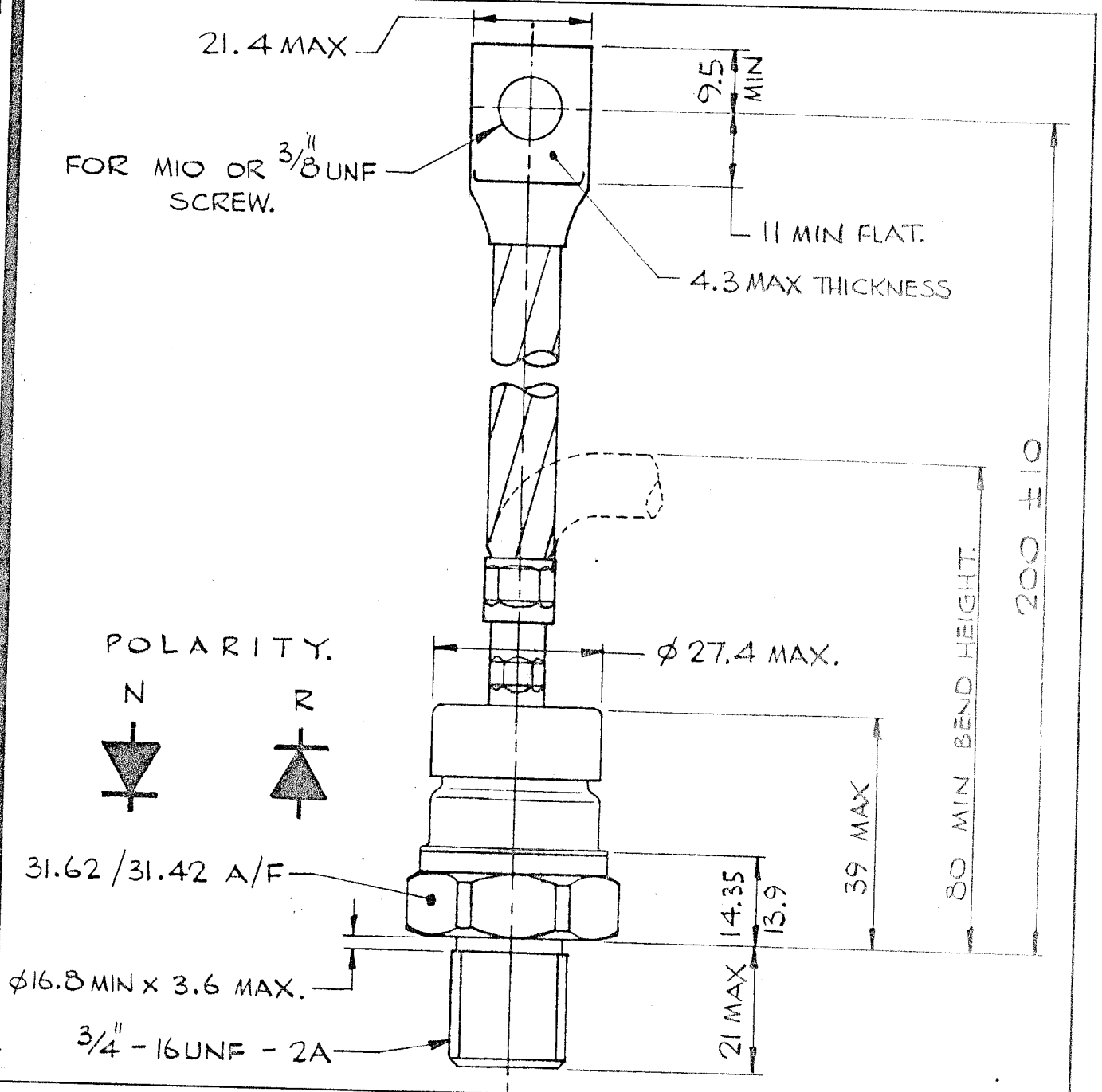


SCALE	1/1
DRN	62
CHKD	62
APPD	
S	A
S	NI

INTERNATIONAL OUTLINE No.
 WEIGHT. 250 GRAMS.
 FINISH. BRIGHT NICKEL PLATE. - 9 -
 DEVICE MARKING INCLUDES MONOGRAM, TYPE No., SPEC.
 No. AND POLARITY SYMBOL.
 DEVICE MOUNTING:
 MOUNTING TORQUE TO BE
 27 - 24.5 Nm (2.77 - 2.5 kgf m).
 THREAD MUST NOT BE LUBRICATED.


DIODE TYPE NUMBER
 PHN/R 380
 PHN/R320
 PHN/R174

G.A. DRG. No. 102A216H04.



DRAWING IS SUPPLIED IN CONFIDENCE AND IS PROTECTED BY COPYRIGHT. THE INFORMATION MAY NOT BE DISCLOSED EXCEPT WITH THE WRITTEN PERMISSION OF AND IN MANNER PERMITTED BY THE PROPRIETORS. WESTINGHOUSE BRAKE AND SIGNAL CO. LTD.

WESTINGHOUSE BRAKE AND SIGNAL CO. LTD.
 CHIPPENHAM, WILTSHIRE, SN15 1JD, ENGLAND.

 WESTCODE[®]
 SEMICONDUCTORS

THIRD ANGLE PROJECTION



DIMNS. IN MILLIMETRES

DRG. No.
 100A280

ISS	REVISIONS
1	11.9.78.
4	12.12.79 M806 REDRAWN.
	DRG. No. WAS 100A257.
5	27.11.84 M218 FIN WAS ET