# Rectifier Diode Stud
# Types W0628S/RX040 to W0628S/RX150

The data sheet on the subsequent pages of this document is a scanned copy of existing data for this product.
(Rating Report 87NR27 Issue 1)

This data reflects the old part number for this product which is: SW02-15PHN/R400.
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 SA outline drawing (W23) in datasheet
No reverse recovery information available
Device no longer available for grade 02 (200V $V_{RRM}/V_{DRM}$)

The following links will direct you to the appropriate outline drawings
Outline W23 – ¾" Glass and metal stud
Outline W27 – ¾" Glass and metal 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 | | | |
|---|---|---|---|
| W0628 | S/RX | ♦♦ | **0** |
| Fixed Type Code | S/RA – ¾" Glass and metal stud<br>S/RB – ¾" Glass and metal stud removed | Voltage code<br>$V_{RRM}/100$<br>04-15 | Fixed Code |
| Typical Order Code: W0628SA060, Normal polarity ¾" Glass and metal stud, 600V $V_{RRM}/V_{DRM}$ | | | |


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# QUALITY EVALUATION LABORATORY

Rating Report: 87NR27

Origin:

Date: 23rd November, 1987

Pages: 9

Diode Type SWO2-15PHN/R400

Written by: Checked: Approved:

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. 79NR15

## Ratings

Voltage Grades : 02-15

$V_{RSM}$ : 300-1600V

$V_{RRM}$ : 200-1500V

$I_{F(AV)}$: Single phase; 50 Hz, 180° half sinewave, $T_C$ = 120°C : 400A

$I_{F(rms)}$ max. : 628A

$I_F$ d.c. max. : 628A

$I_{FSM}$ : t = 10 ms half sinewave; $T_J$ (initial) = 190°C ; $V_{RM} = 0.6V_{RRM}$(MAX) : 7500A

$I_{FSM}$ : t = 10 ms half sinewave; $T_J$ (initial) = 190°C ; $V_{RM}$ = 10V : 8250A

$I^2t$ : t = 10 ms; $T_J$ (initial) = 190°C; $V_{RM} = 0.6V_{RRM}$(MAX) : $0.28 \times 10^6 A^2S$

$I^2t$ : t = 10 ms; $T_J$ (initial) = 190°C; $V_{RM} \leq$ 10V : $0.34 \times 10^6 A^2S$

$I^2t$ : t = 3 ms; $T_J$ (initial) = 190°C; $V_{RM} \leq$ 10V : $0.25 \times 10^6 A^2S$

$T_C$ Operating Range : -40 to +190°C

$T_{stg}$ Non-operating : -40 to +200°C

## Characteristics

(Maximum values unless otherwise stated)

| | | |
|---|---|---|
| $V_O$ : $T_J$ = 190°C | : | 0.8 V |
| rs : $T_J$ = 190°C | : | 0.548mohms |
| $V_{FM}$ : $I_{FM}$ = 1500A $T_{VJ}$ = 190°C | : | 1.62V |
| $R_{th}$ (J-C) | : | 0.13°C/W |
| $R_{th}$ (C-HS) | : | 0.04°C/W |
| $I_{RRM}$ : $T_J$ = 190°C $V_{RM}$ = $V_{RRM}$ (MAX) | : | 15mA |
| $Q_{rr}$ : ) $I_{FM}$ = 1000A: dI/dt : 10A/uS defined by chord through 50% $I_{RM}$ ) $V_{RM}$ : 50V; $T_{VJ}$ = 190°C ) $t_{rr}$ ) | : | 500uC Typical |
| | : | |
| | : | |
| Mounting torque | : | 2.5 - 2.77 Kg.m |
| Outline drawing | : | 100A281 |
| JEDEC Outline No. | : | |

CONTENTS



Changes to Rating Report No. 79NR15

p1: $V_{RWM}$ omitted

$T_C$ operating range (min) reduced to -40°C

p4: $V_{RWM}$ omitted

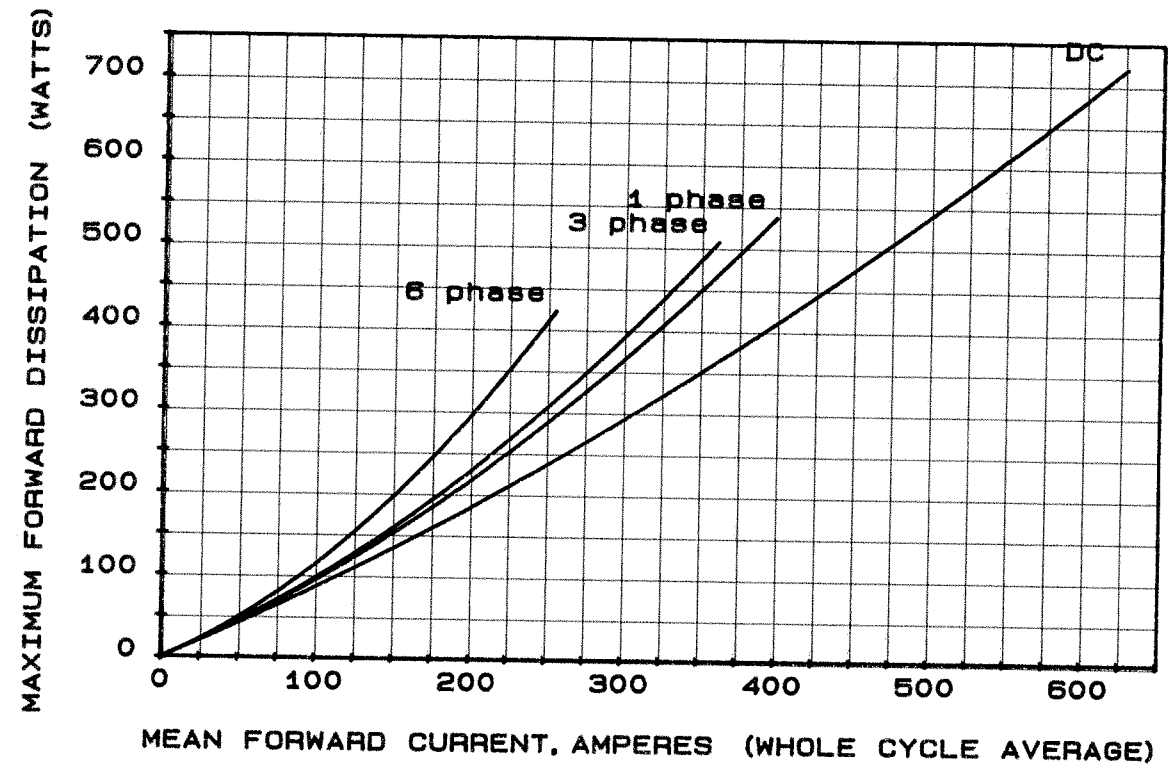
pp 5-8 : Re-drawn

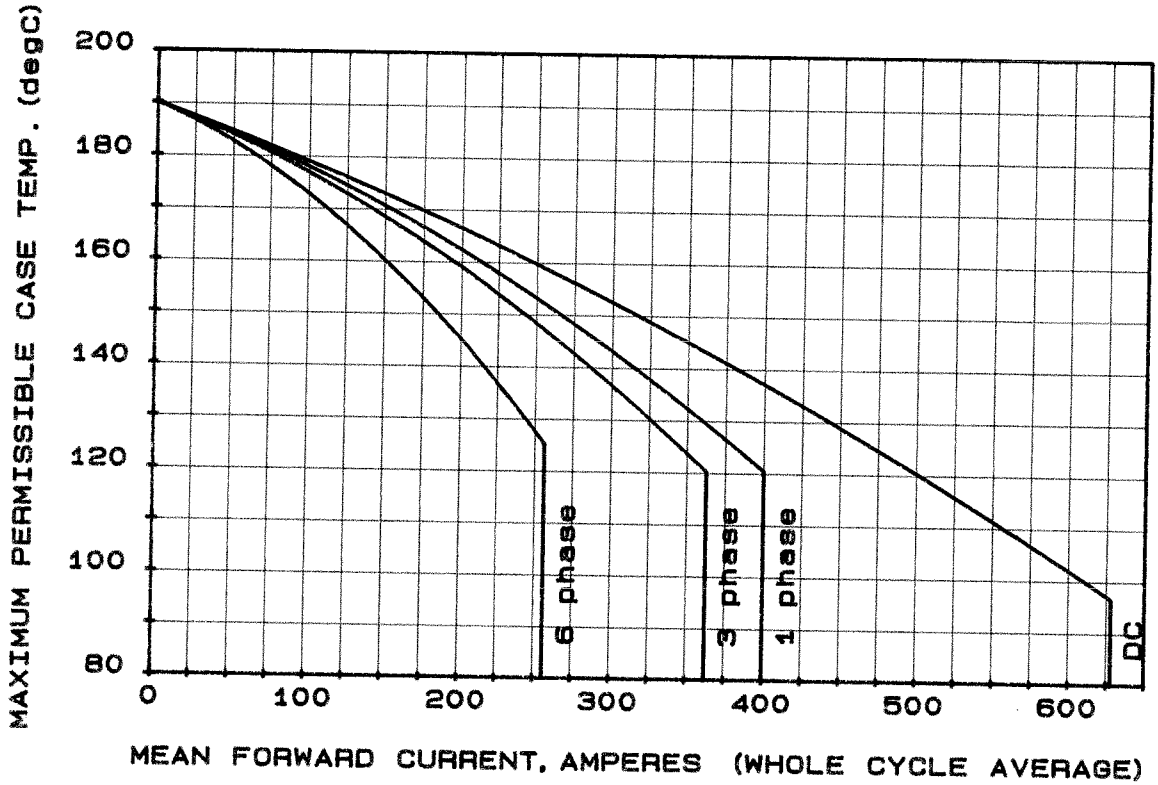
p.9: Updated

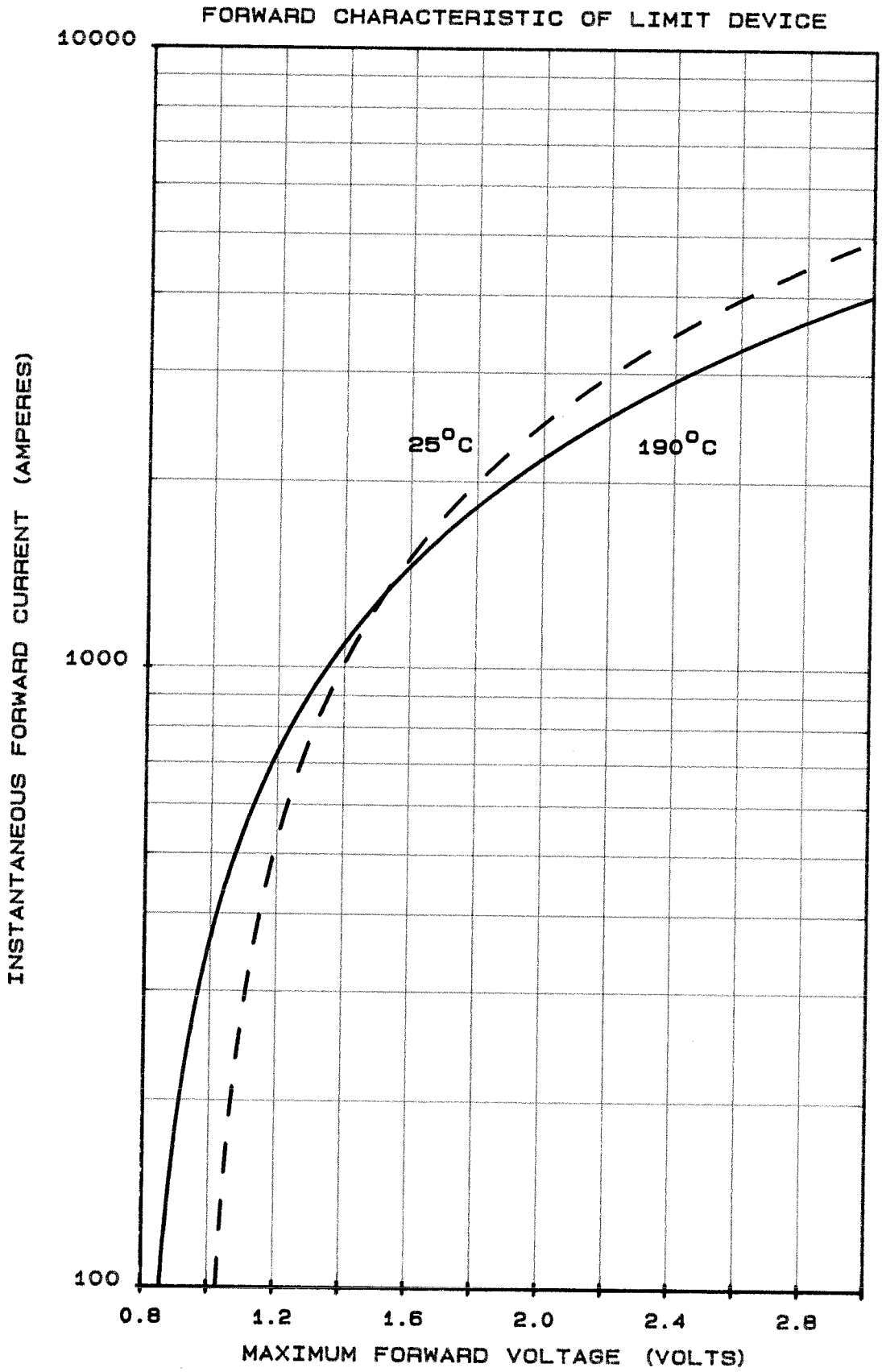
Voltage Ratings

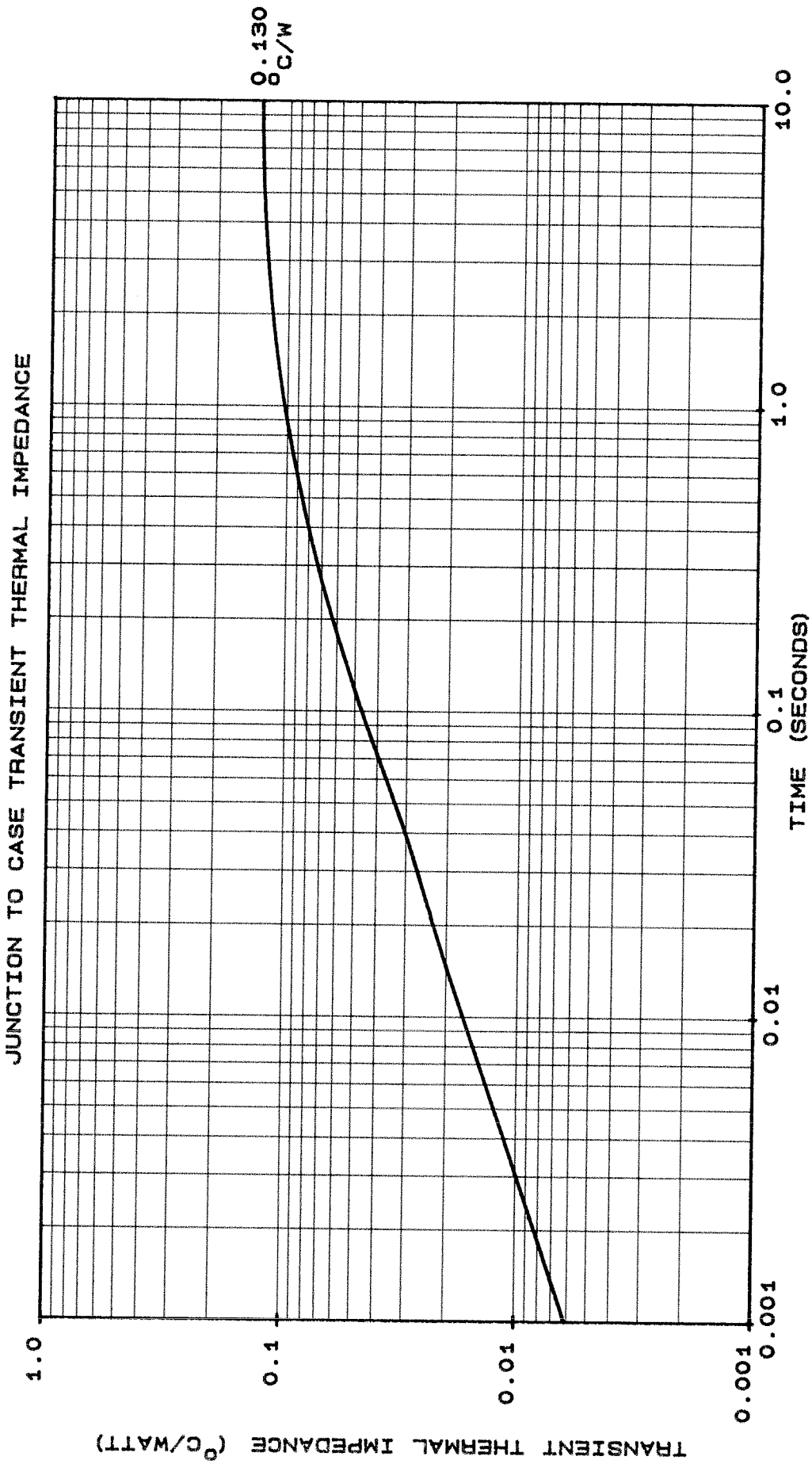
| Voltage Class | $V_{RRM}$ V | $V_{RSM}$ V |
|---|---|---|
| 02 | 200 | 300 |
| 04 | 400 | 500 |
| 06 | 600 | 700 |
| 08 | 800 | 900 |
| 10 | 1000 | 1100 |
| 12 | 1200 | 1300 |
| 14 | 1400 | 1500 |
| 15 | 1500 | 1600 |

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

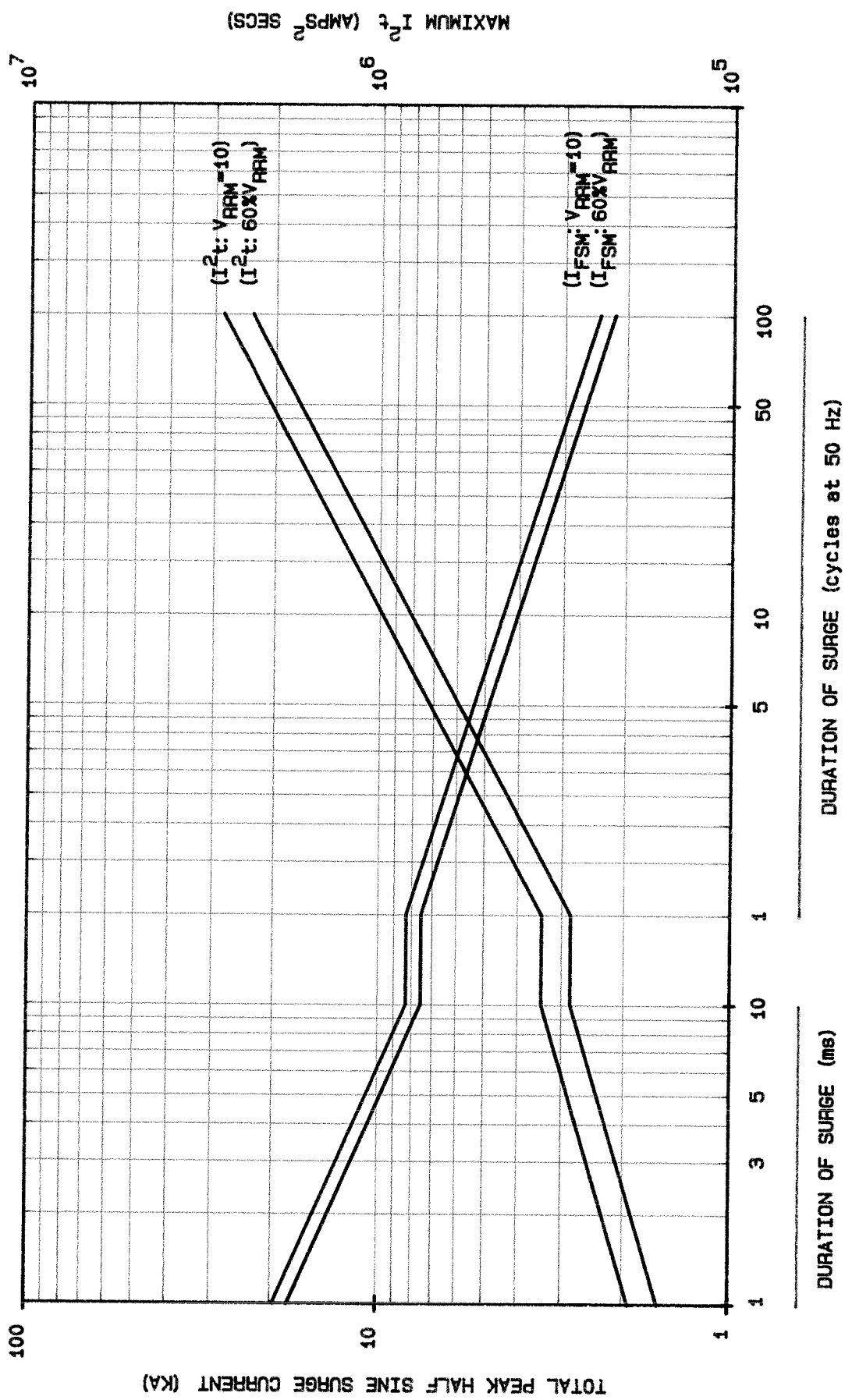

MAXIMUM FORWARD DISSIPATION (WATTS)
700
600
500
400
300
200
100
0
0
100
200
300
400
500
600
DC
1 phase
3 phase
6 phase
MEAN FORWARD CURRENT, AMPERES (WHOLE CYCLE AVERAGE)


MAXIMUM PERMISSIBLE CASE TEMP. (degC)
200
180
160
140
120
100
80
0
100
200
300
400
500
600
6 phase
3 phase
1 phase
DC
MEAN FORWARD CURRENT, AMPERES (WHOLE CYCLE AVERAGE)


FORWARD CHARACTERISTIC OF LIMIT DEVICE
10000
1000
100
INSTANTANEOUS FORWARD CURRENT (AMPERES)
25°C
190°C
0.8
1.2
1.6
2.0
2.4
2.8
MAXIMUM FORWARD VOLTAGE (VOLTS)


JUNCTION TO CASE TRANSIENT THERMAL IMPEDANCE
0.130 °C/W
TRANSIENT THERMAL IMPEDANCE (°C/WATT)
1.0
0.1
0.01
0.001
0.001
0.01
0.1
1.0
10.0
TIME (SECONDS)

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



| | |
|---|---|
| SCALE | 1/1 |
| DRN | |
| CHKD | |
| APPD | |
| S | A |
| S | NI |

INTERNATIONAL OUTLINE No.

WEIGHT. 250 GRAMS.



FINISH. BRIGHT NICKEL PLATE.

DEVICE MARKING INCLUDES MONOGRAM, TYPE No., SPEC. No. AND POLARITY SYMBOL.

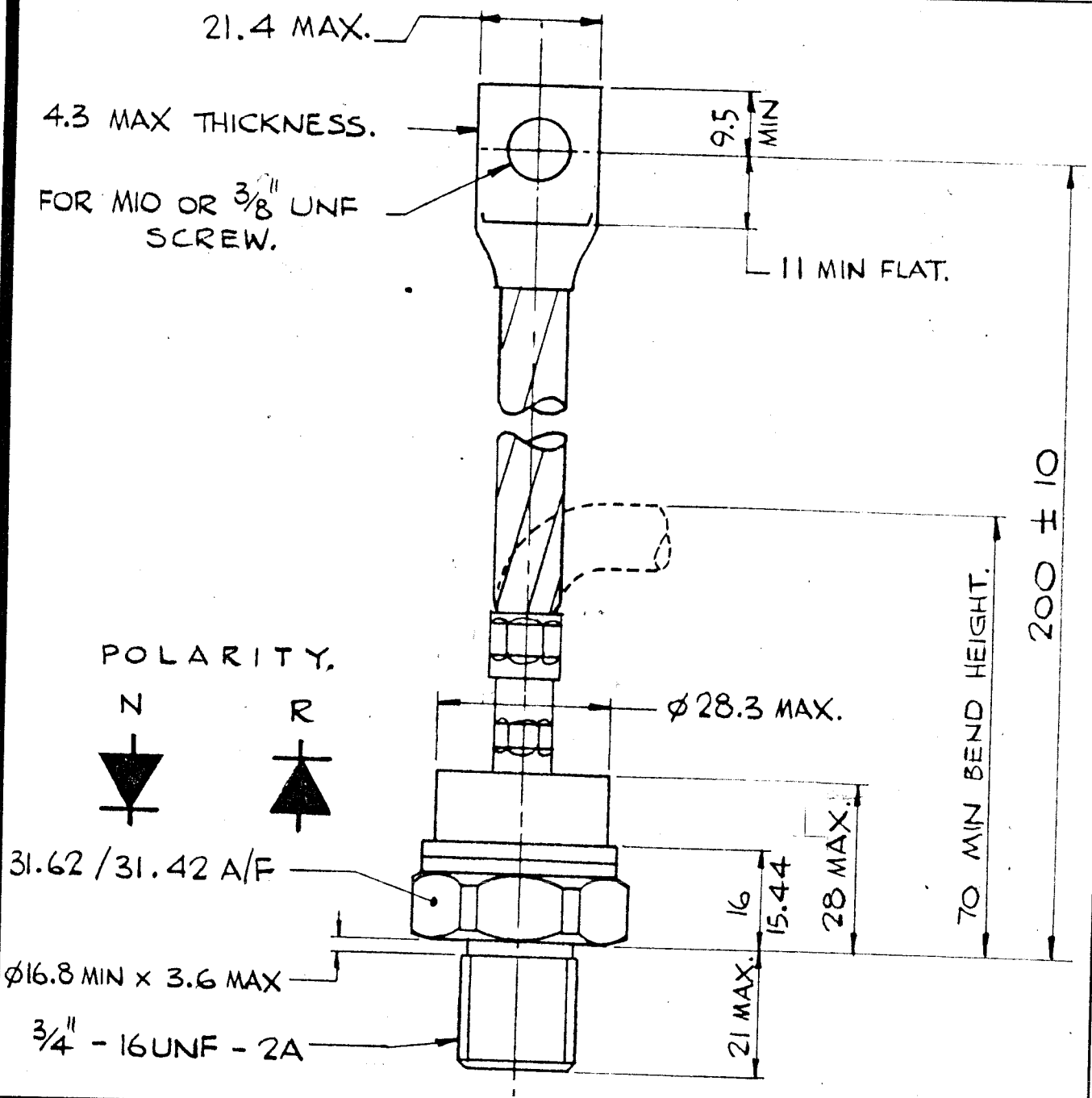
DEVICE MOUNTING:

MOUNTING TORQUE TO BE 27 - 24.5 Nm (2.77 - 2.5 kgf m). THREAD MUST NOT BE LUBRICATED.

DIODE TYPE NUMBER

PHN/R170, 300, 400.

G.A. DRG. No. 102A216H05






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

WESTCODE ® SEMICONDUCTORS

THIRD ANGLE PROJECTION

DIMNS. IN MILLIMETRES

DRG. No. 100A281

| ISS | REVISIONS |
|---|---|
| 1 | 11.9.78 |
| 4 | 12.12.79 M806 REDRAWN. DRG Nº WAS 100A257. |
| 5 | 27.11.84 M1218 FIN WAS ET |