Rectifier Diode
Types W3743Z#400 to W3743Z#500

The data sheet on the subsequent pages of this document is a scanned copy of existing data for this product.
(Rating Report 84NR4 Issue 1)

This data reflects the old part number for this product which is: SM28-48CXC15C.
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:
Device only available from grade 40 to 50 (4000V to 5000V V_{RRM})
Only 'C' housing outline present in datasheet

The following links will direct you to the appropriate outline drawings
Outline W7 – 37mm Clamp height capsule
Outline W42 – 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

W3743	Z#	♦♦	**0**
Fixed Type Code	ZC - 37mm Clamp height capsule ZD – 26mm Clamp height capsule	Voltage code V_{RRM}/100 40-50	Fixed Code
Typical Order Code: W3743ZD440, 26mm Clamp height, 4400V V_{RRM}			

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QUALITY AND EVALUATION LABORATORY

Rating Report No: 84NR4 Issue 1 Date: 22nd March 1996

Origin: Q.E.L. Pages: 9

Diode Capsule Type : SW28-48CXC15C

Written by: M Baker Checked: AG. Approved:

This diode consists of a diffused 76 mm diameter silicon slice, reference DQRXC, mounted in a cold weld capsule.

Ratings

Voltage Grades) A blocking voltage derating factor) of 0.13% per deg. Celsius is applicable		: 28 - 48
V_{RSM}	) to this device for T_j below 25°C)	: 2900 - 4900 V
V_{RRM}	)	: 2800 - 4800 V

$I_{F(AV)}$: Single phase: 50 Hz, 180° half sinewave;

Double Side Cooled T_{HS} = 55 °C, 100 °C		: 3750 A, 2625 A
Single Side Cooled T_{HS} = 100 °C		: 1640 A
$I_{F(rms)}$ T_{HS} = 25°C	)) Double side cooled	: 6870 A
I_F T_{HS} = 25°C	)	: 6100 A

I_{FSM} : t = 10ms half sinewave; T_J (initial) = 160 °C V_{RM} = 0.6$V_{RRM(MAX)}$: 35 kA

I_{FSM} : t = 10ms half sinewave; T_J (initial) = 160 °C V_{RM} ≤10V : 39 kA

I^2t : t = 10ms; T_J (initial) = 160 °C; V_{RM} = 0.6V_{RRM}(MAX) : 6.13 x $10^6 A^2s$

I^2t : t = 10ms; T_J (initial) = 160 °C; V_{RM} ≤ 10V : 7.22 x $10^6 A^2s$

I^2t : t = 3ms; T_J (initial) = 160 °C; V_{RM} ≤ 10V : 5.44 x $10^6 A^2s$

T_{HS}: Operating Range : -55 To +160 °C

T_{stg} : Non-operating : -55 To +160 °C

Characteristics (Maximum values unless otherwise stated)

V_O	: 0.976 V
r_S	: 0.17 mΩ
A : T_J = 25°C	:
B : T_J = 25°C	:
C : T_J = 25°C	:
D : T_J = 25°C	:
A)	:
B) $V_F = A + B.\ln(i_F) + C.i_F + D\sqrt{i_F}$	:
C)	:
D)	:
V_{FM} at I_{FM} = 6000 A	: 2.0 V
$R_{th(J-HS)}$ Double side cooled) Steady-state d.c. and	: 0.011 K/W
Single side cooled) 1 ϕ a.c. resistive load.	: 0.022 K/W
I_{RRM} : at $V_{RRM(MAX)}$	: 200 mA
V_{fr} : at dI/dt =	: ---

Reverse recovery at I_{FM} = 2500 A; t_p = 1000 μs
di_R/dt = 10 A/μs; V_{RM} = 50 V

Q_{RR} (total area)	: ---
Q_{RA} (50% chord)	: 4000 μC Typical
t_{rr} (50% chord)	: ---
I_{RM}	: ---
Mounting Force	: 27 - 47 kN (2700 - 4700 kg.f)
Outline Drawing	: 100A293
JEDEC Outline No.	: ---

NOTE: All characteristics are at $T_{VJ} = T_{Jmax}$ operating unless stated otherwise.

CONTENTS

Voltage Ratings

Voltage Class	V_{RRM} V	V_{RSM} V
28	2800	2900
30	3000	3100
32	3200	3300
34	3400	3500
36	3600	3700
38	3800	3900
40	4000	4100
42	4200	4300
44	4400	4500
46	4600	4700
48	4800	4900

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

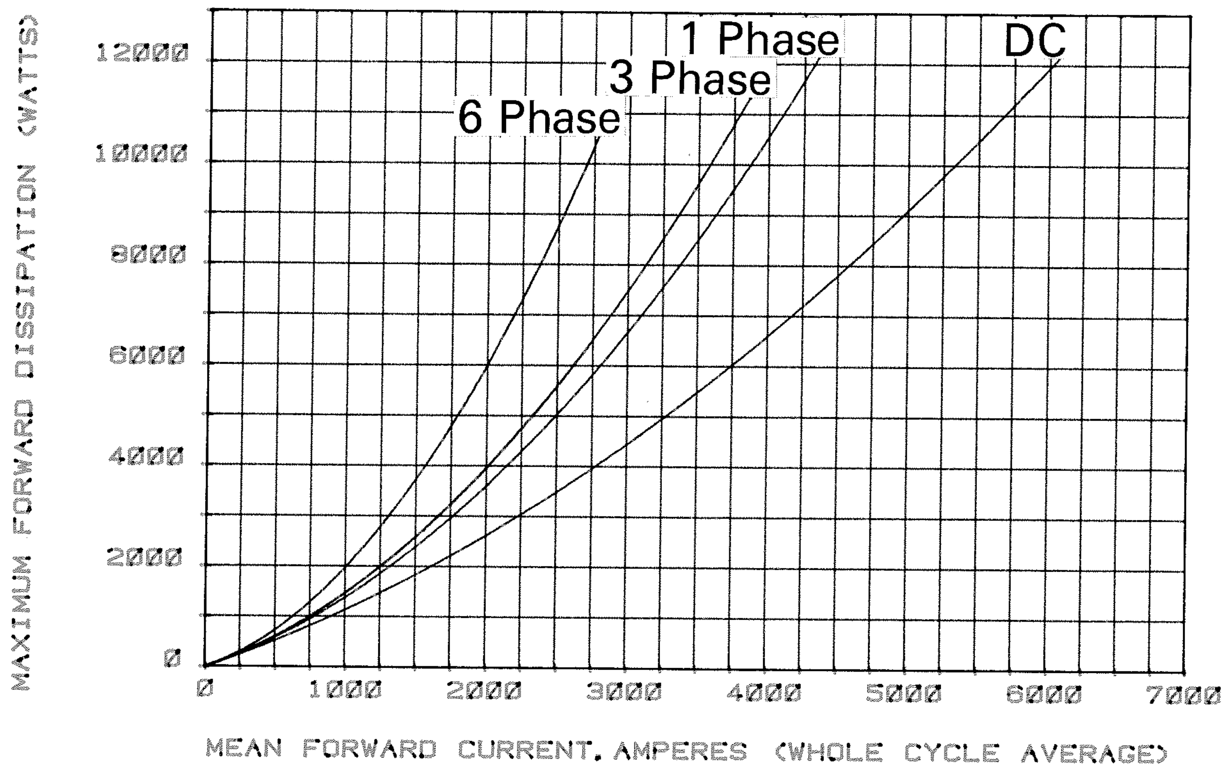
2. A blocking voltage derating factor of 0.13% per deg. Celsius is applicable to this device for T_J below 25°C.

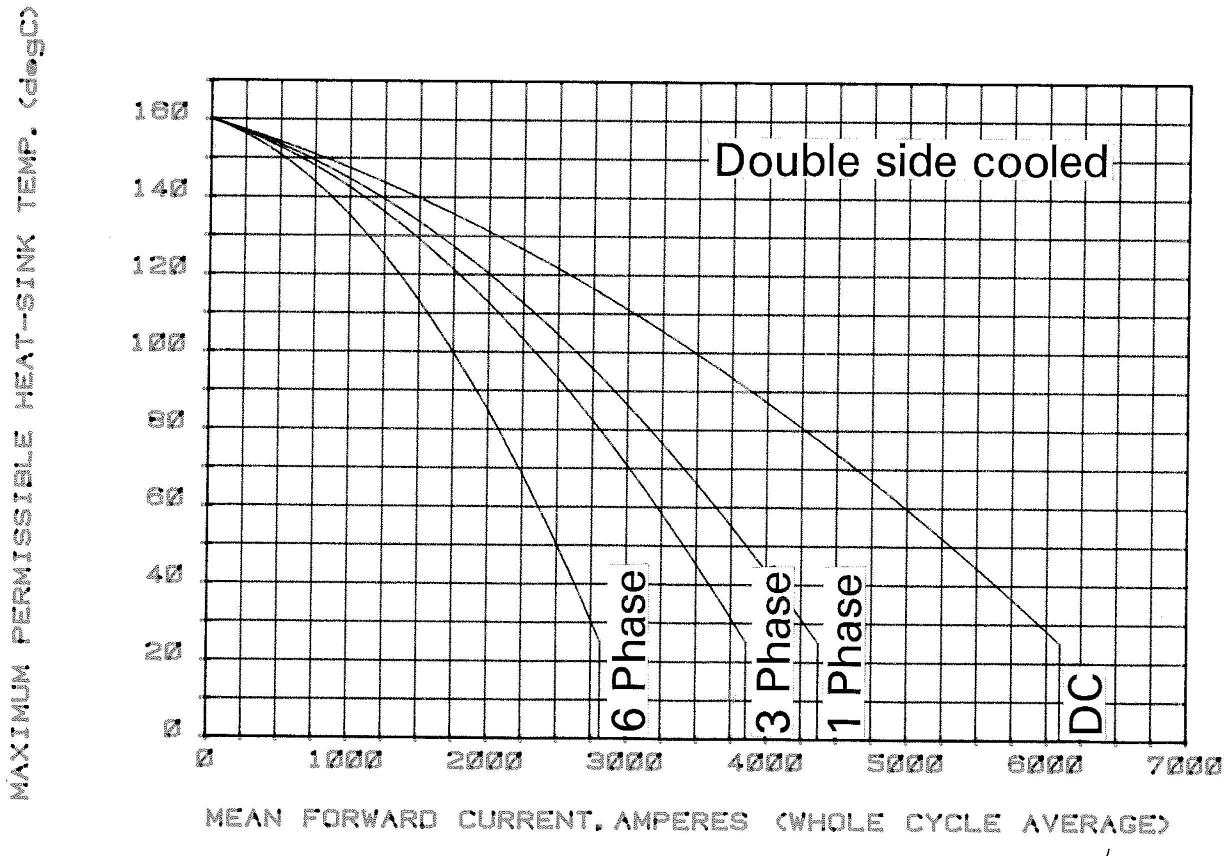
Changes to Rating Report 94NR4 Issue 1

Page 1 Format, $I_{FSM(1)}$, $I_{FSM(2)}$, I^2t figures, V_{RRM} & V_{RSM}
Page 2 Re-issued
Page 4 Re-issued Change list added
Page 8 Re-issued
Page 9 Re-issued

15C Fig 1

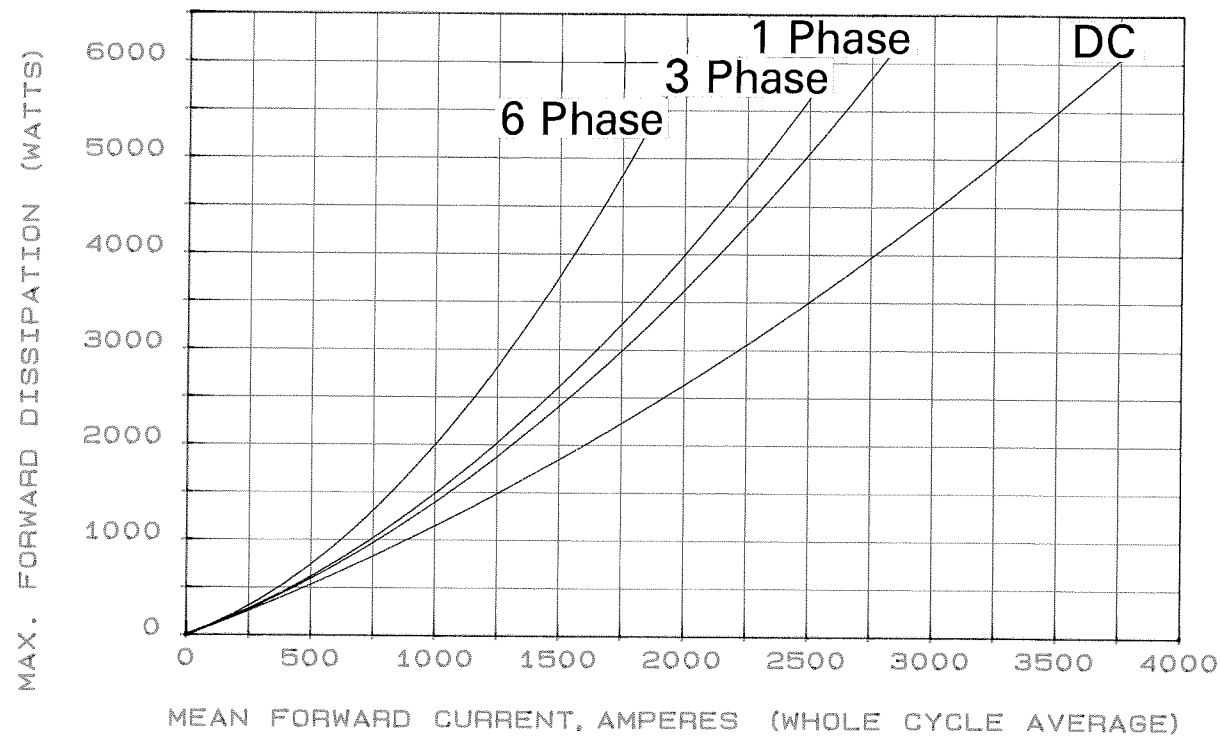
DOUBLE SIDE COOLED

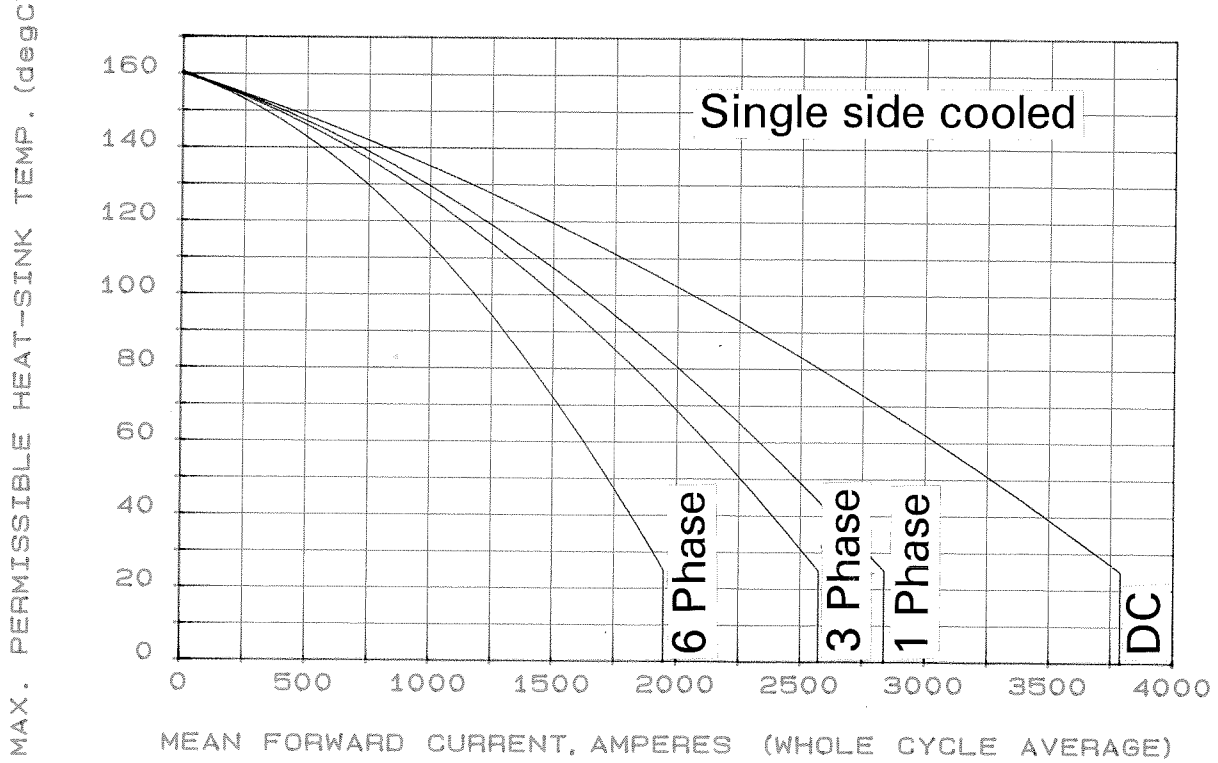


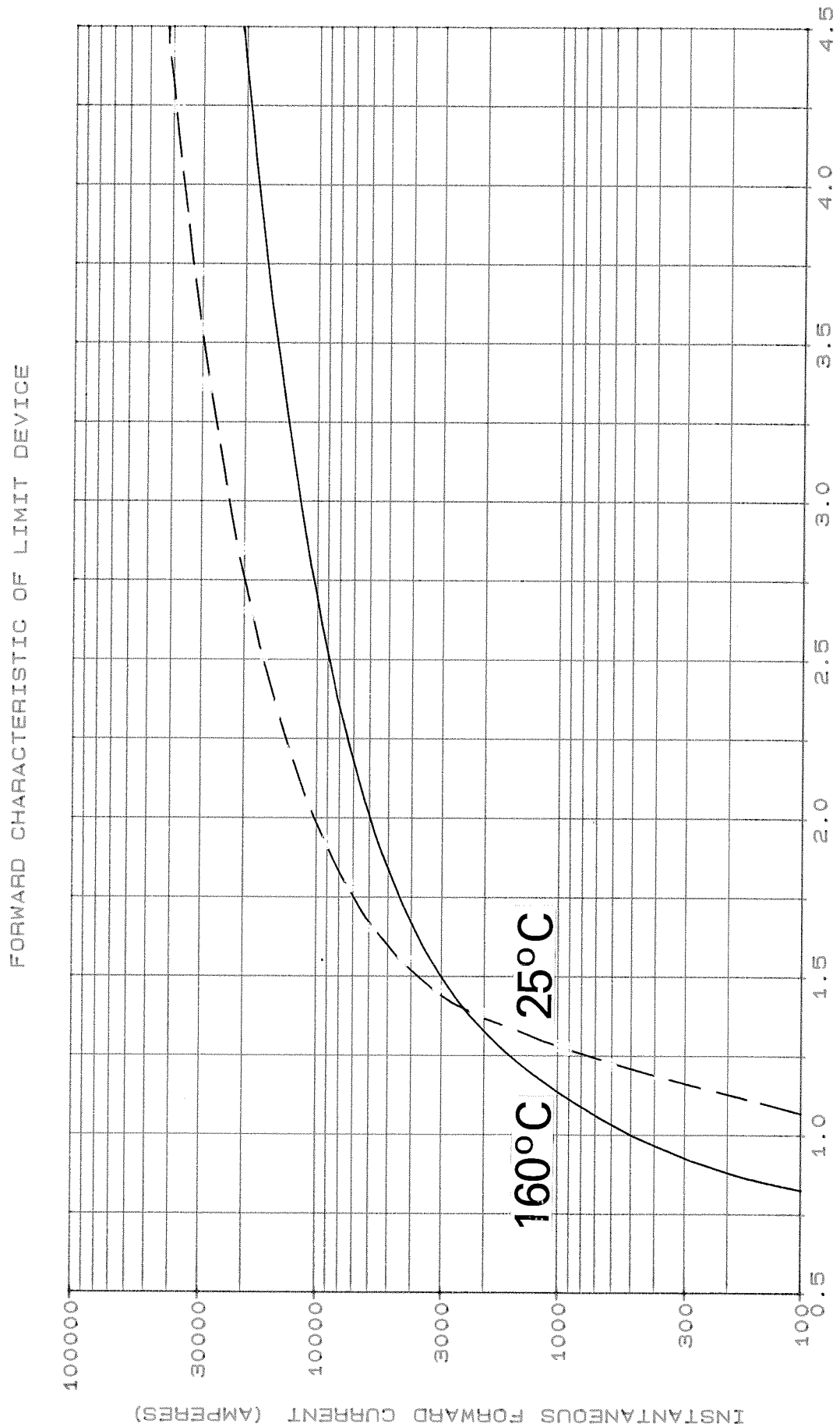


15c/1

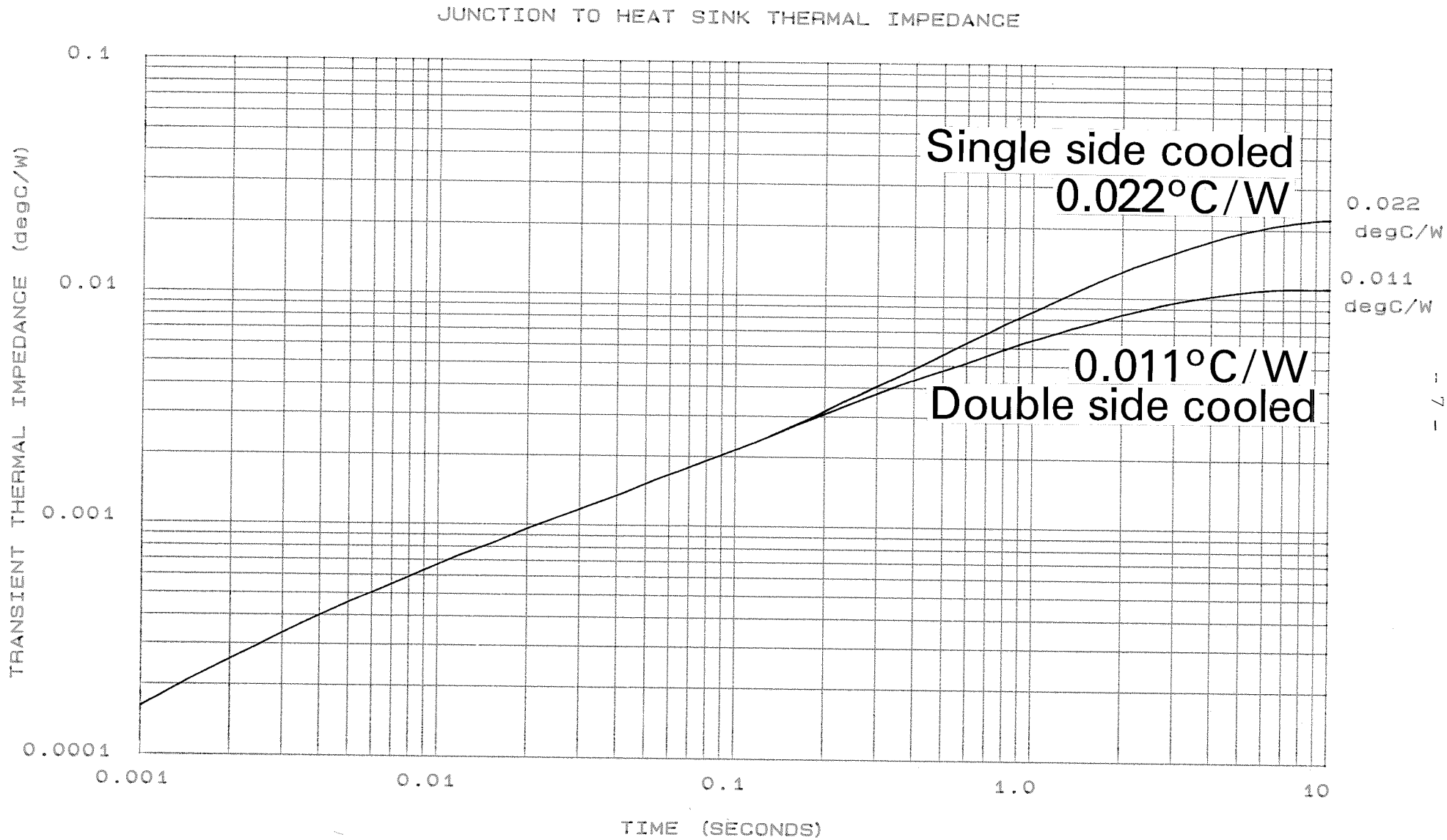
SINGLE SIDE COOLED



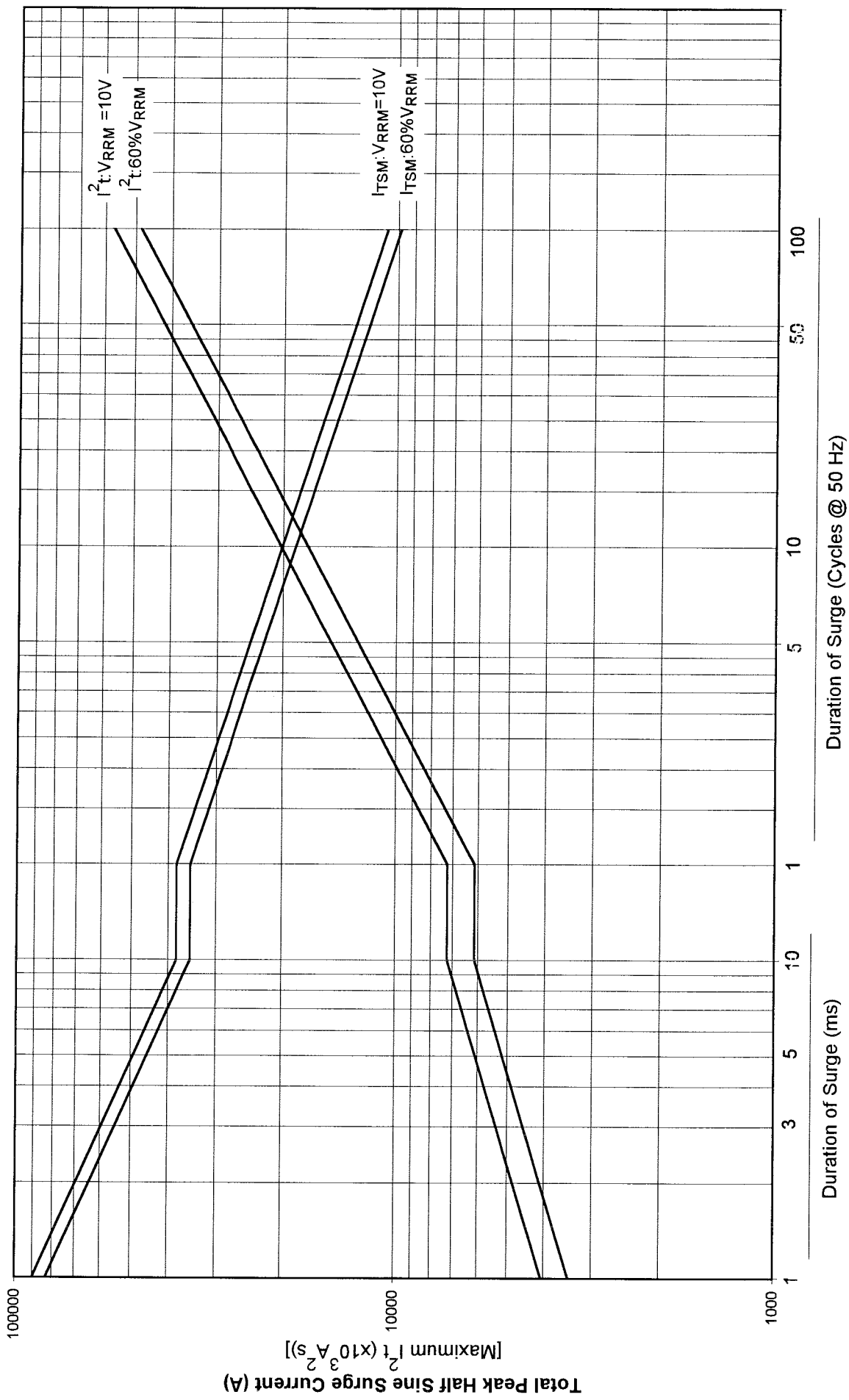



FORWARD CHARACTERISTIC OF LIMIT DEVICE
INSTANTANEOUS FORWARD CURRENT (AMPERES)
100000
30000
10000
3000
1000
300
100
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
MAXIMUM FORWARD VOLTAGE (VOLTS)
160°C
25°C

15/3


JUNCTION TO HEAT SINK THERMAL IMPEDANCE
TRANSIENT THERMAL IMPEDANCE (degC/W)
0.1
0.01
0.001
0.0001
0.001
0.01
0.1
1.0
10
TIME (SECONDS)
Single side cooled
0.022°C/W
0.011°C/W
Double side cooled
0.022
degC/W
0.011
degC/W

Maximum Non-Repetitive Surge Current
@ Initial Junction Temperature 160 °C



ACAD REF: 100A293

INTERNATIONAL OUTLINE No.

G.A. DWG No. 159B100H601

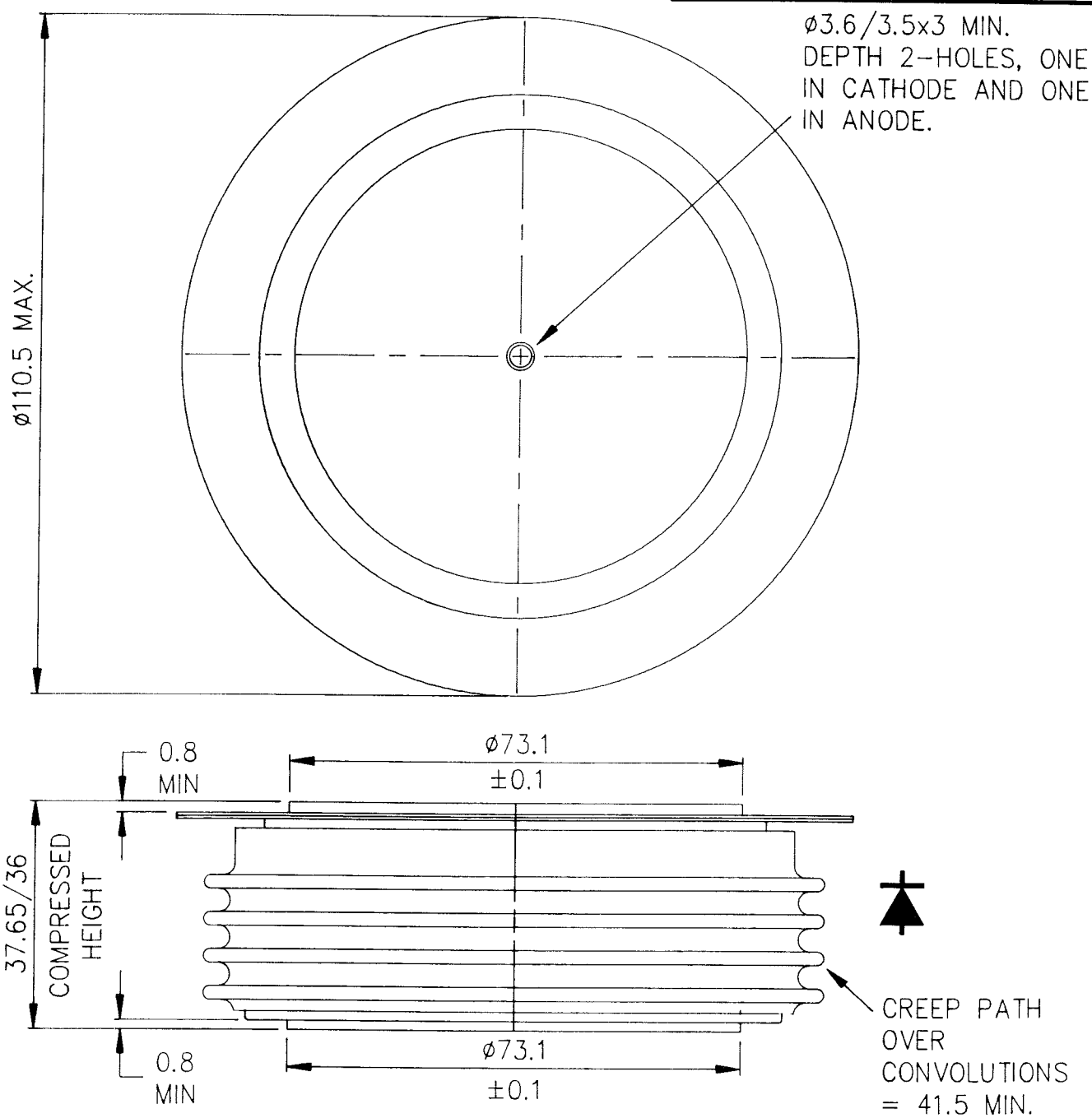
WEIGHT. 1.7kg

FINISH. NICKEL PLATE

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 = 3700±1000kgf. (37±10kN)

TYPE NUMBER

CXC974 CXC32C
CXC15C
CXC18C
CXC20C
CXC21C
CXC26C
CXC30C



ISS	REVISIONS
4	13-09-90 REDRAWN ON CAD HDN
5	M1644. TYPE No. CXC26C ADDED 11.4.91 HDN
6D	26.8.93. M2312. CXC18C ADDED. HN
7D	11.1.94. M2408. CXC974 ADDED. HN

THIRD ANGLE PROJECTION.

DWG. COMPLIES WITH BS 308.

DIMNS. IN MILLIMETRES.

DWG No. 100A293

SCALE 1/1

DRAWN HDN

DIST: A

WESTCODE SEMICONDUCTORS LTD.,
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