

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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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.		

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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 : SW28-48CXC15CWritten by: *M Baker*Checked: *ASH*Approved: *RAF*

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	: 28 - 48
) of 0.13% per deg. Celsius is applicable	
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 $T_{HS} = 55^\circ\text{C}$, 100°C	: 3750 A, 2625 A
Single Side Cooled $T_{HS} = 100^\circ\text{C}$	: 1640 A
$I_{F(rms)}$ $T_{HS} = 25^\circ\text{C}$)	: 6870 A
) Double side cooled	
I_F $T_{HS} = 25^\circ\text{C}$)	: 6100 A
I_{FSM} : $t = 10\text{ms}$ half sinewave; T_J (initial) = 160°C $V_{RM} = 0.6V_{RRM(MAX)}$	: 35 kA
I_{FSM} : $t = 10\text{ms}$ half sinewave; T_J (initial) = 160°C $V_{RM} \leq 10\text{V}$	: 39 kA
I^2t : $t = 10\text{ms}$; T_J (initial) = 160°C ; $V_{RM} = 0.6V_{RRM(MAX)}$	: $6.13 \times 10^6 \text{A}^2\text{s}$
I^2t : $t = 10\text{ms}$; T_J (initial) = 160°C ; $V_{RM} \leq 10\text{V}$	: $7.22 \times 10^6 \text{A}^2\text{s}$
I^2t : $t = 3\text{ms}$; T_J (initial) = 160°C ; $V_{RM} \leq 10\text{V}$	: $5.44 \times 10^6 \text{A}^2\text{s}$
T_{HS} : Operating Range	: -55 To $+160^\circ\text{C}$
T_{stg} : Non-operating	: -55 To $+160^\circ\text{C}$

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Characteristics

(Maximum values unless otherwise stated)

V_O	: 0.976 V
r_s	: 0.17 mΩ
A : $T_J = 25^\circ\text{C}$	:
B : $T_J = 25^\circ\text{C}$	:
C : $T_J = 25^\circ\text{C}$	:
D : $T_J = 25^\circ\text{C}$	:
A)	:
B) $V_F = A + B.\ln(i_F) + C.i_F + D \sqrt{i_F}$	:
C)	:
D)	:
V_{FM} at $I_{FM} = 6000 \text{ A}$	: 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 $I_{FM} = 2500 \text{ A}$; $t_p = 1000 \mu\text{s}$ $di_R/dt = 10 \text{ A}/\mu\text{s}$; $V_{RM} = 50 \text{ V}$	
Q_{RR} (total area)	: ---
Q_{RA} (50% chord)	: 4000 μC Typical
t_{π} (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.

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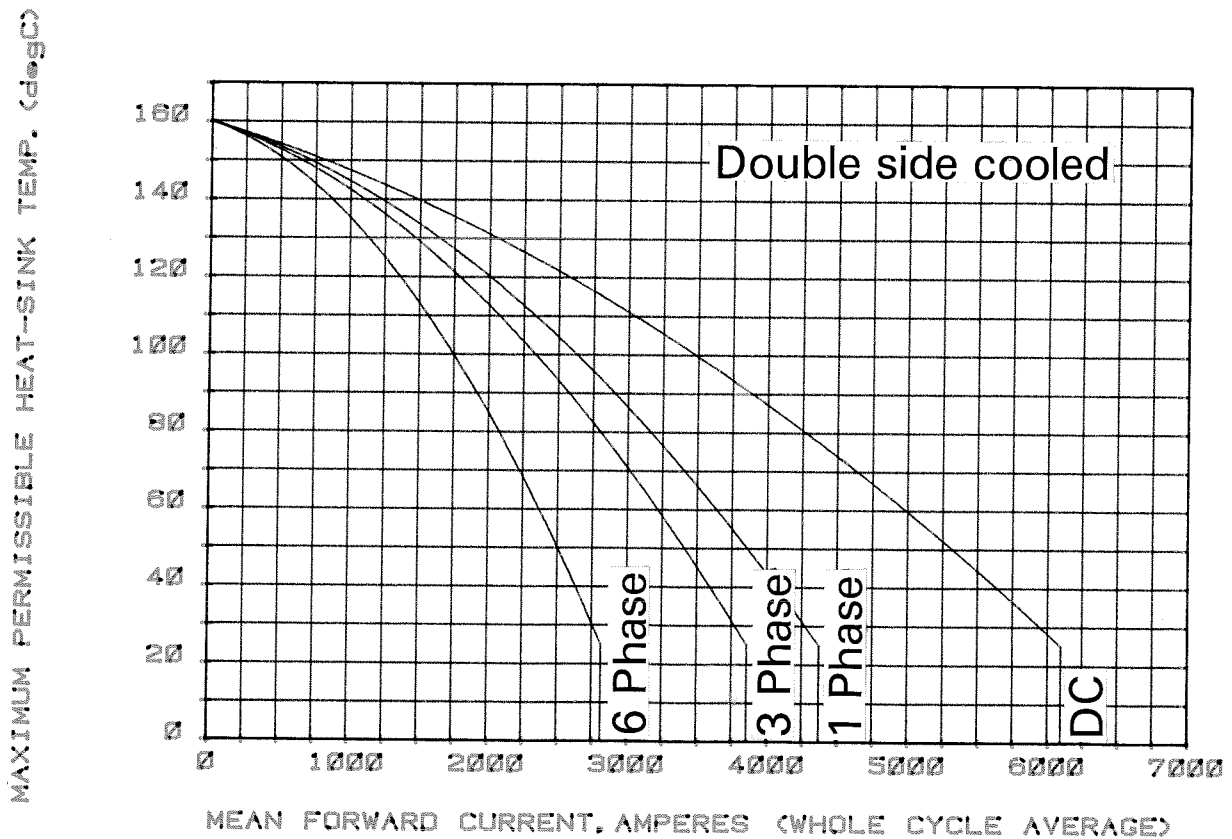
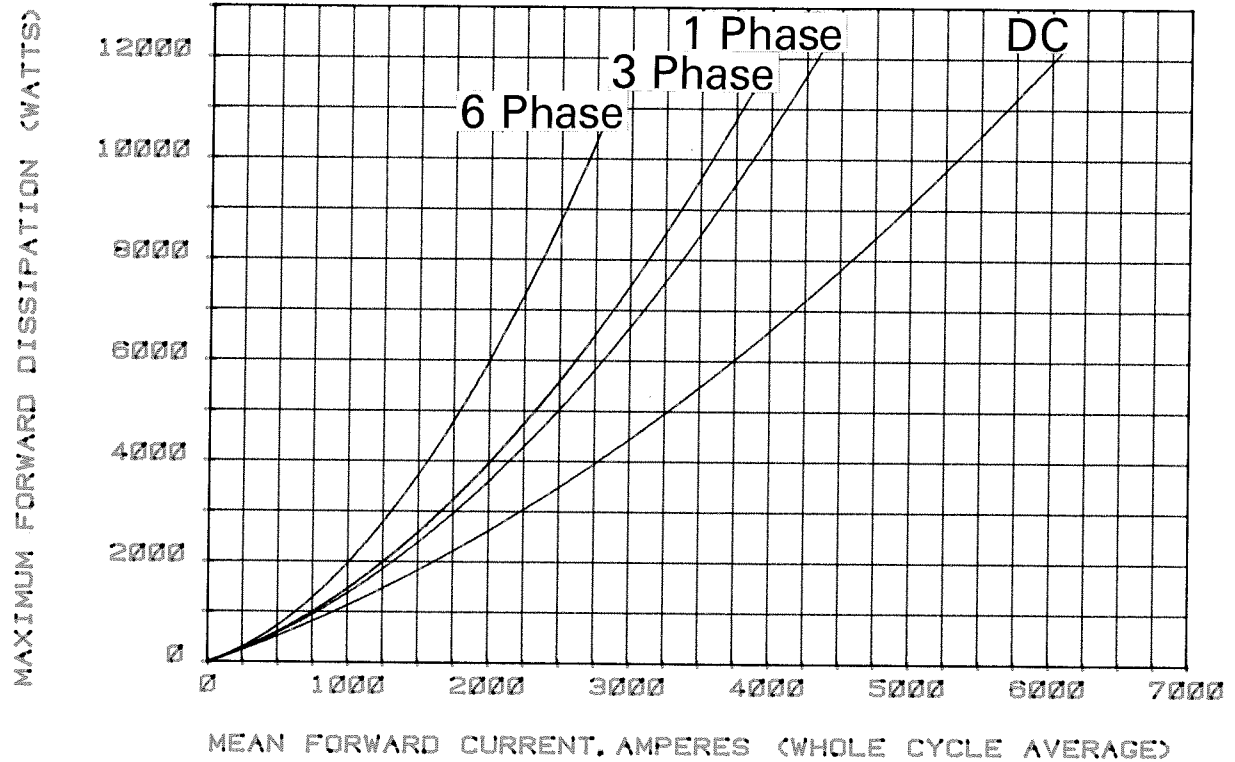
Voltage Ratings

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

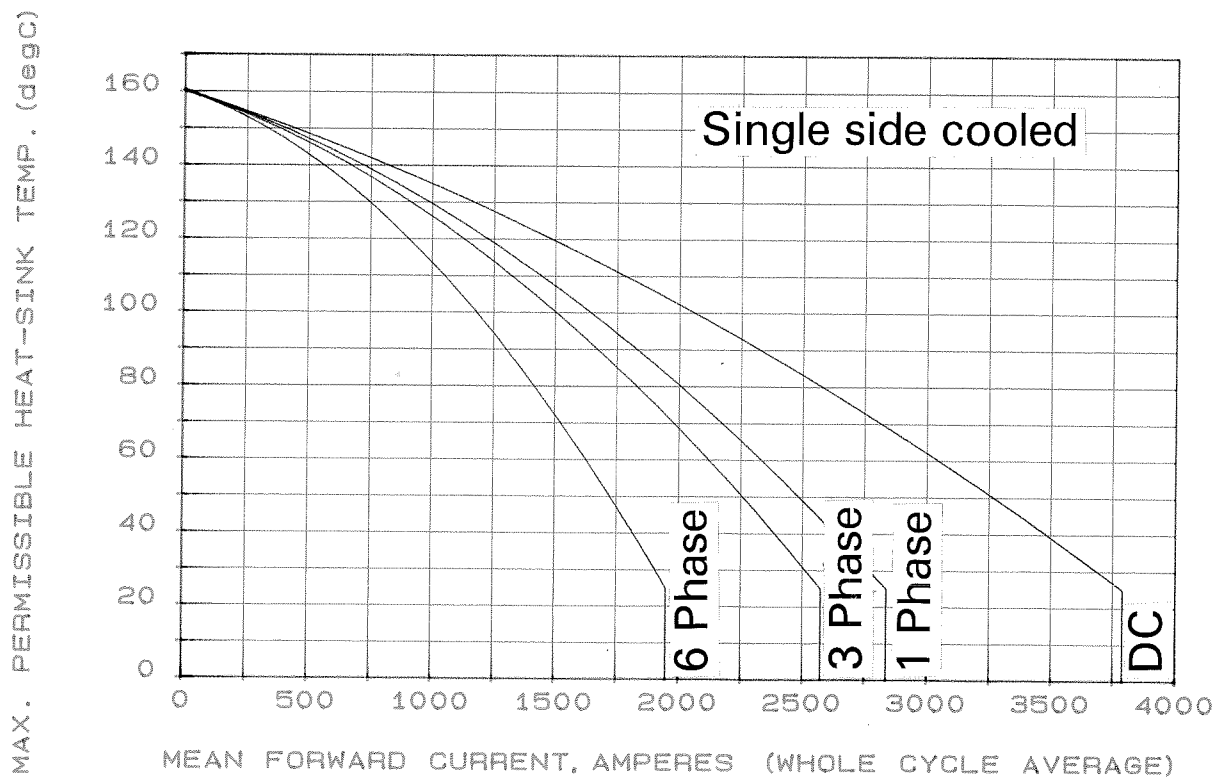
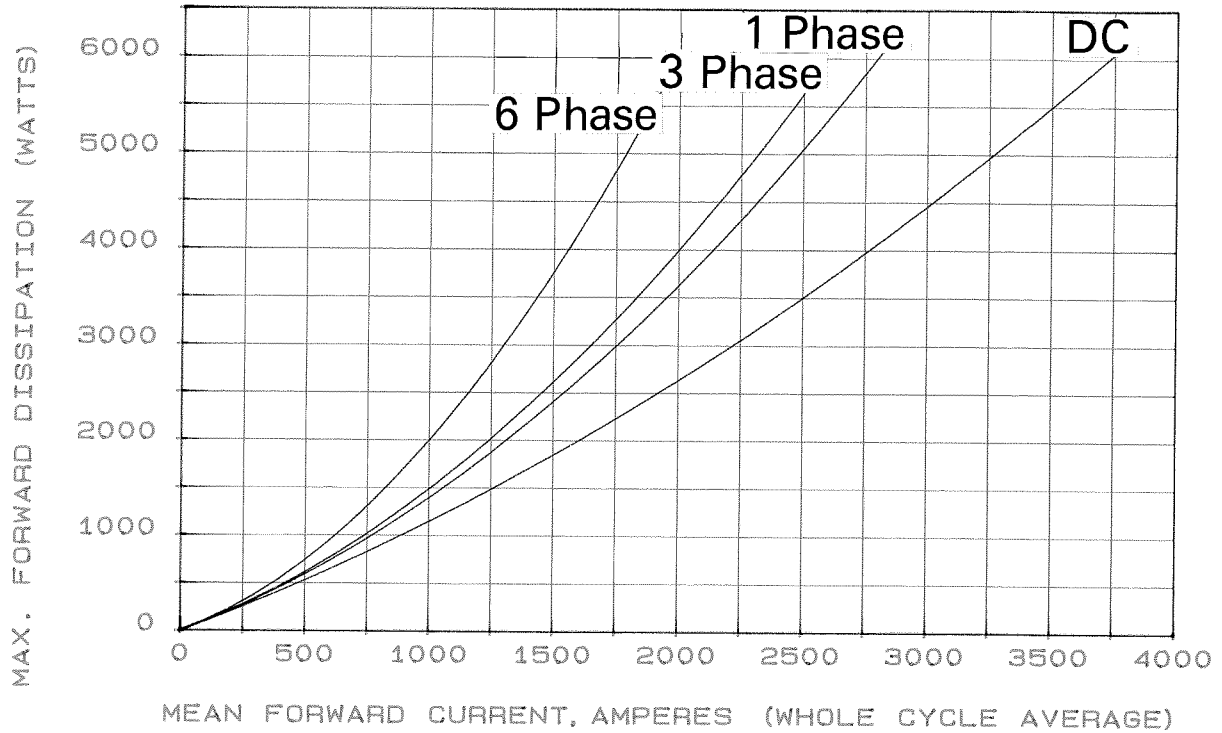
1. This Report is applicable to higher or lower voltage grades when supply has been agreed by Sales/Production.
2. A blocking voltage derating factor of 0.13% per deg. Celsius is applicable to this device for T_J below 25°C.

Changes to Rating Report 94NR4 Issue 1

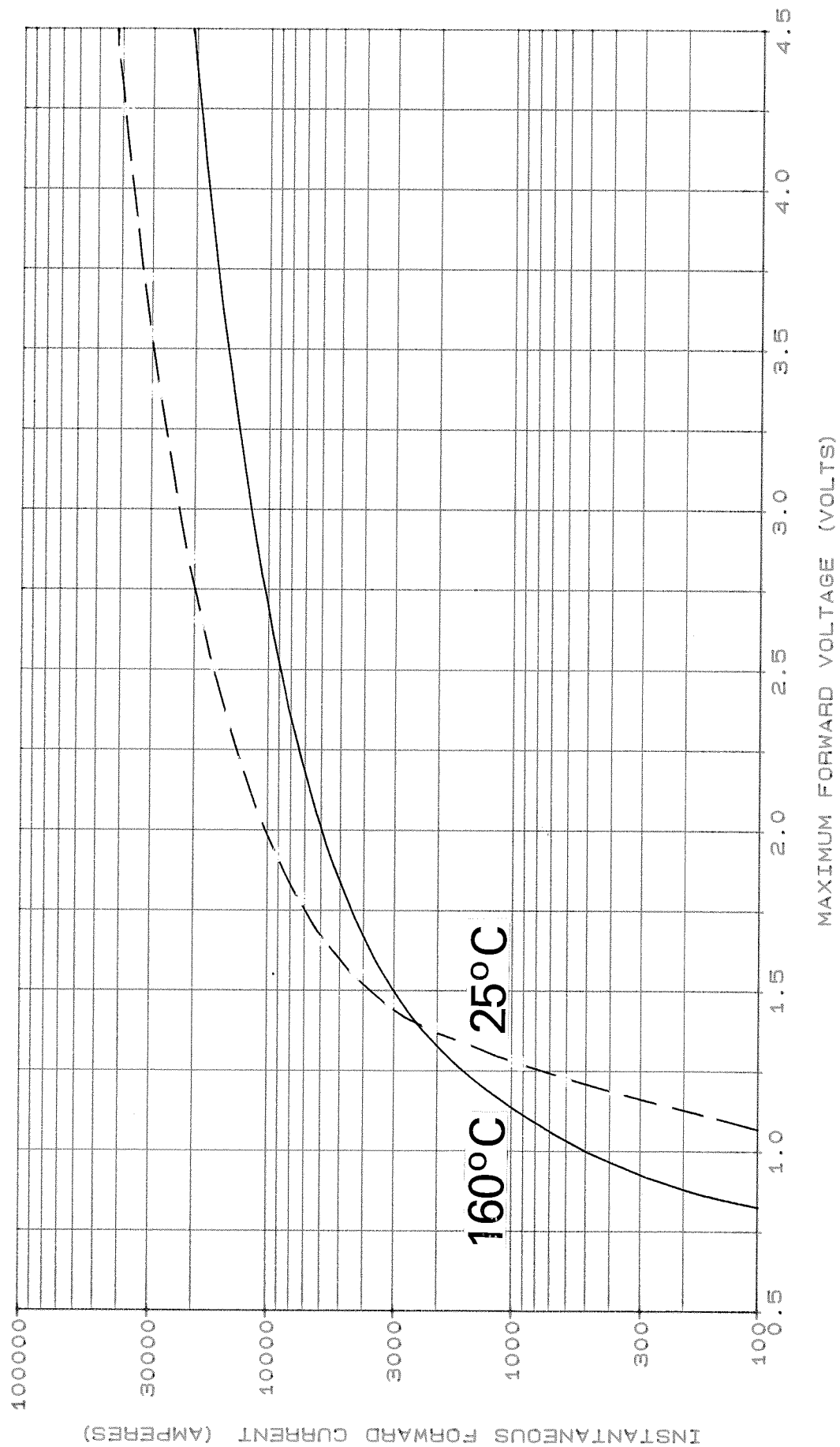
Page 1	Format, $I_{FSM(1)}$, $I_{FSM(2)}$, I^2t figures, V_{RRM} & V_{RSM}
Page 2	Re-issued
Page 4	Re-issued Change list added
Page 8	Re-issued
Page 9	Re-issued

DOUBLE SIDE COOLED

SINGLE SIDE COOLED

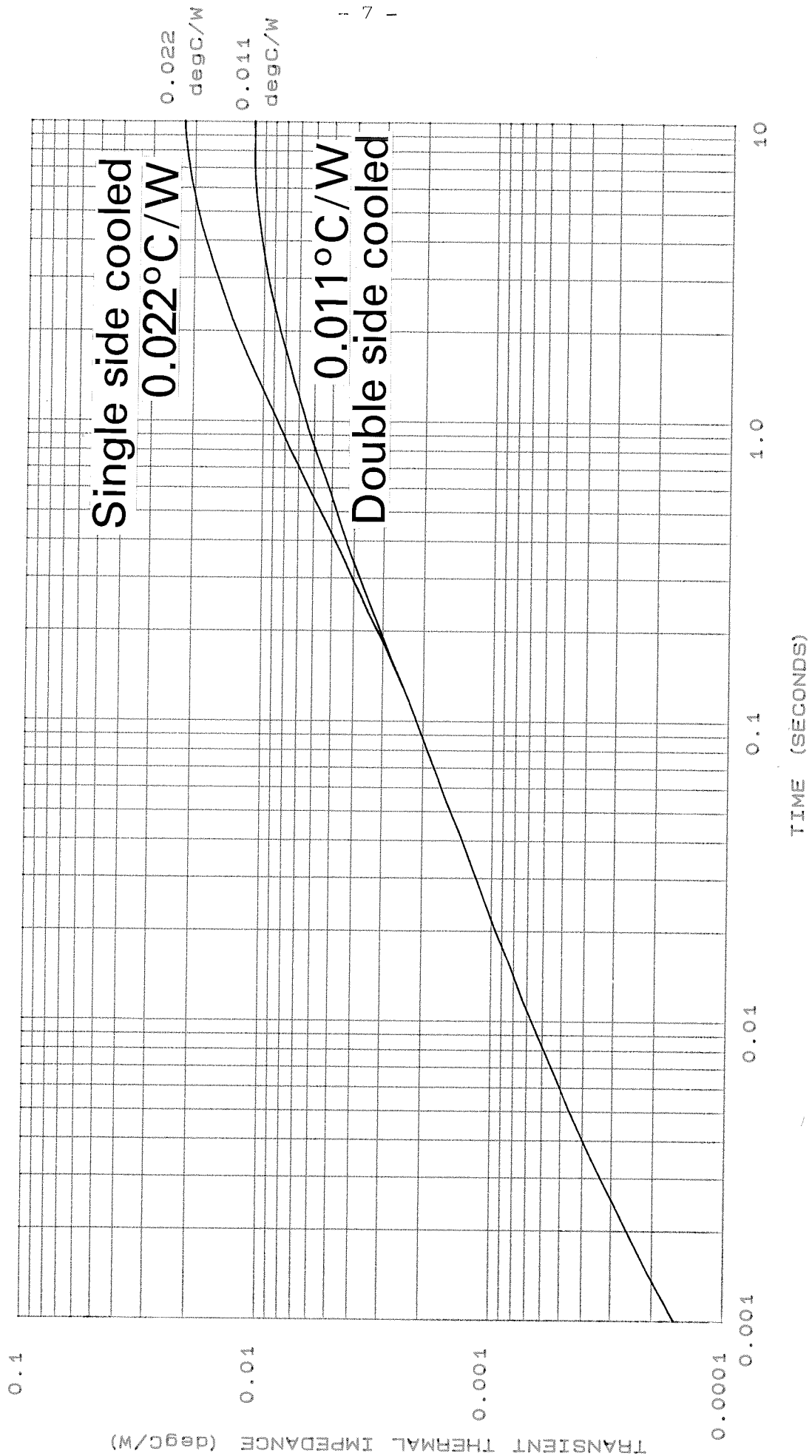


FORWARD CHARACTERISTIC OF LIMIT DEVICE

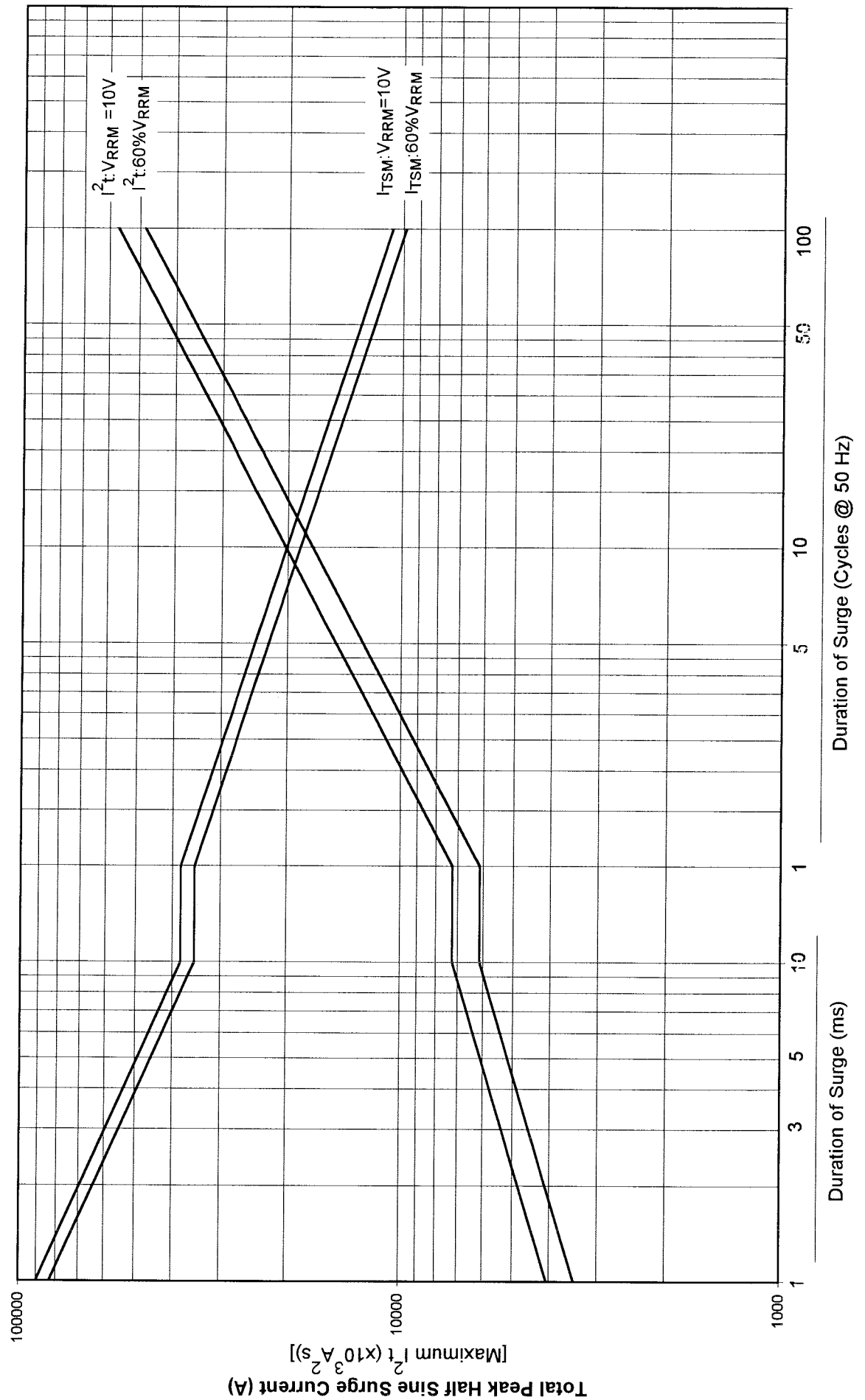


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JUNCTION TO HEAT SINK THERMAL IMPEDANCE



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



INTERNATIONAL OUTLINE No.

G.A. DWG No. 159B100H601

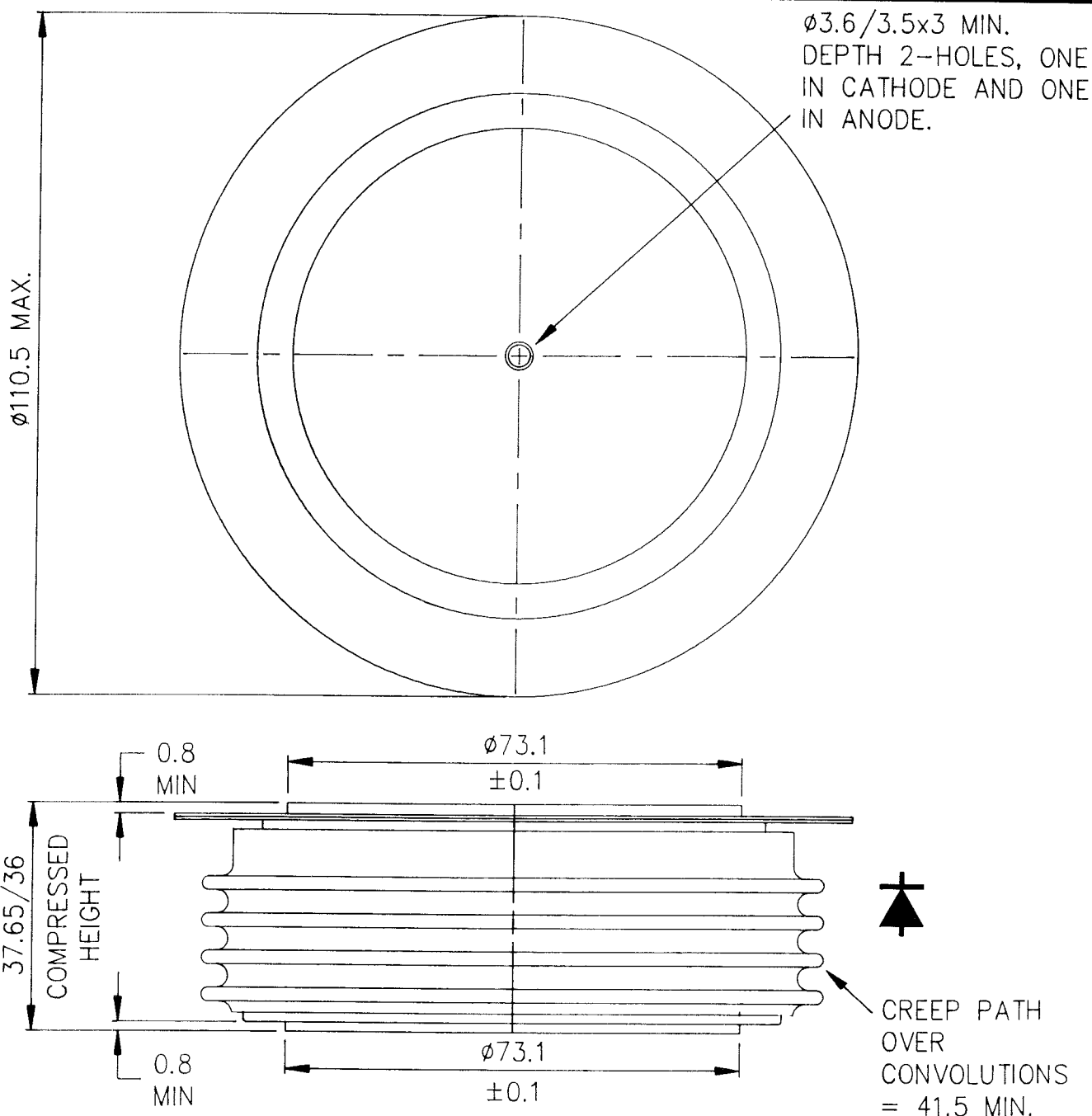
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WEIGHT. 1.7kg

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 ± 1000 kgf. (37 ± 10 kN)

CXC974 CXC32C
CXC15C
CXC18C
CXC20C
CXC21C
CXC26C
CXC30C



THIRD ANGLE PROJECTION.

DWG. COMPLIES WITH BS 308.
DIMNS. IN MILLIMETRES.

DWG No.

100A293



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SCALE	1/1	ISS	REVISIONS
DRAWN	HON	4	13-09-90
DIST:	A		REDRAWN ON
			CAD HDN
		5	M1644. TYPE No.
			CXC26C ADDED
		60	11.4.91 HDN
			26.8.93. M2312.
			CXC18C ADDED.
		70	11.1.94. M2408.
			CXC974 ADDED.
			HN