Phase Control Thyristor Stud
Types N0416S#020 to N0416S#080

The data sheet on the subsequent pages of this document is a scanned copy of existing data for this product.
(Rating Report 93NR1 Issue 1)

This data reflects the old part number for this product which is: N275PH02-08.
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 SC outline drawing (W18) in datasheet
No reverse recovery information available

The following links will direct you to the appropriate outline drawings
Outline W18 – ¾" Ceramic stud
Outline W25 – ¾" 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			
N0416	S#	♦♦	**0**
Fixed Type Code	SC – ¾" Ceramic stud SD – ¾" Ceramic stud removed	Voltage code V_{RRM}/100 02-08	Fixed Code
Typical Order Code: N0416SC080, ¾" Ceramic stud, 800V V_{RRM}/V_{DRM}			

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QUALITY AND EVALUATION LABORATORY

Rating Report: 93TR1

Origin: Q.E.L.

Date: 28th June, 1993

Pages: 12

Thyristor Type N275PH02-08

Written by: M. Baker Checked: BH Approved:

RATINGS

Voltage Grades : 02-08

V_{DSM} : 200-800V

V_{RSM} : 300-900V

V_{DRM}, V_{RRM} : 200-800V

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

T_{CASE} = 94°C : 226A

$I_{T(rms)}$ Max. : 355A

$I_{T\ d.c.}$ Max. : 355A

I_{TSM} : t = 10 ms half sinewave; $T_{J(initial)}$ = 125°C; V_{RM} = 0.6 $V_{RRM(MAX)}$: 6000A

I_{TSM} : t = 10 ms half sinewave; $T_{J(initial)}$ = 125°C, $V_{RM} \leq$ 10V : 6600A

I^2t : t = 10 ms; $T_{J(initial)}$ = 125°C; V_{RM} = 0.6$V_{RRM(MAX)}$: 180 x 10^3A^2SECS

I^2t : t = 10 ms; $T_{J(initial)}$ = 125°C; $V_{RM} \leq$ 10V : 218 x 10^3A^2SECS

I^2t : t = 3 ms; $T_{J(initial)}$ = 125°C; $V_{RM} \leq$ 10V : 165 x 10^3A^2SECS

di/dt : (Repetitive) T_J = 125°C; Gate: 20V, 20ohms Rise time 1μs : 500A/μs

I_{FGM} : Anode positive with respect to cathode : 19A

V_{FGM} : Anode positive with respect to cathode : 18V

V_{RGM} : : 5V

$P_{G(AV)}$: : 2W

P_{GM} : : 100W

V_{GD} : : 0.25V

T_C operating range : -40°C to 125°C

T_{stg} Non operating : -40°C to 150°C

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CHARACTERISTICS (maximum values unless stated otherwise)

I_{GT} : T_J = 25°C)		: 150mA
I_H : T_J = 25°C) V_A = 6V; I_A = 1A		: 400mA
V_{GT} : T_J = 25°C)		: 3V
V_O : T_J = 125°C		: 0.85V
r_T : T_J = 125°C		: 0.535mΩ
A : T_J = 25°C		:
B : T_J = 25°C		:
C : T_J = 25°C		:
D : T_J = 25°C		:
A : (Constant) T_J = 125°C		:
B : (B x ln (i)) T_J = 125°C		:
C : (C x i) T_J = 125°C		:
D : (D x $\sqrt{i}$) T_J = 125°C		:
V_{TM} : I_{TM} = 690A. T_J = 125°C		: 1.22V
$R_{th(J-C)}$		: 0.12 K/W
$R_{th(C-HS)}$		: 0.04 K/W
dv/dt : Linear ramp to 0.8V_{DRM}(max); T_J = 125°C; Gate O/C	repetitive	: 200V/μS*
I_{DRM} : T_J = 125°C ; V_{DM} = V_{DRM}(max)		: 20mA
I_{RRM} : T_J = 125°C ; V_{RM} = V_{RRM}(max)		: 20mA
Q_{RA} : I_{TM} = : dI/dt = A/μS, 50% chord value V_{RM} = 50V; T_J = 125°C		:
t_q : I_{TM} = :dI/dt = A/μS; T_J = 125°C; V_{RM} = 50V dv/dt = 200V/μS to 0.8 V_{DRM} dv/dt = 20V/μS to 0.8 V_{DRM}		:
Mounting Torque		: 2.50 - 2.77 Kgm
Outline Drawing		: 101A225
Outline (JEDEC No.)		:

Extension of Turn-off Time

This Report is applicable to other tq/reapplied dv/dt combinations when supply has been agreed by Sales/Production.

*Repetitive dv/dt

Higher dv/dt selections are available up to 1000V/μS on request.

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Voltage Ratings

Voltage Grade 'H'	V_{DSM} V_{DRM} V_{RRM} V	V_{RSM} V	V_D V_R DC
02	200	300	140
03	300	400	210
04	400	500	260
06	600	700	420
08	800	900	560

Extension of Voltage Grades

This report is applicable to other and higher voltage grades when supply has been agreed by Sales/Production.

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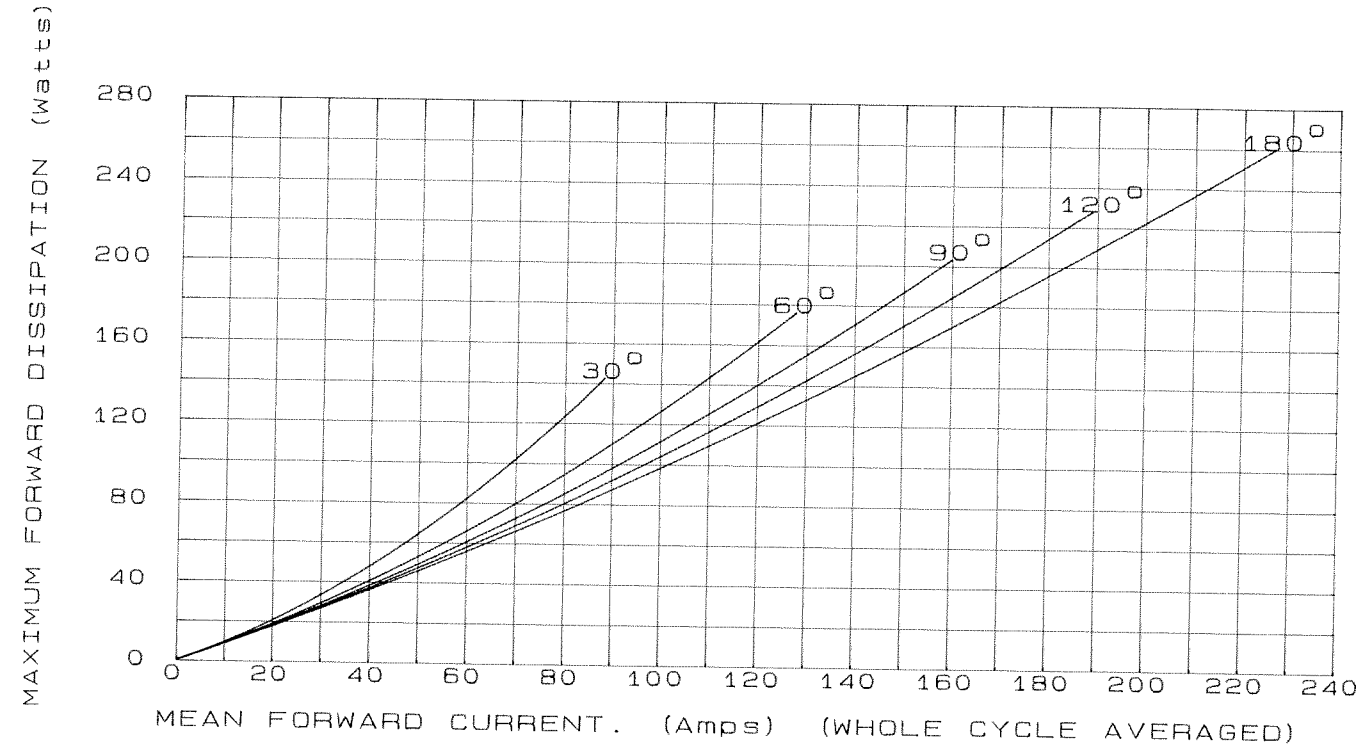
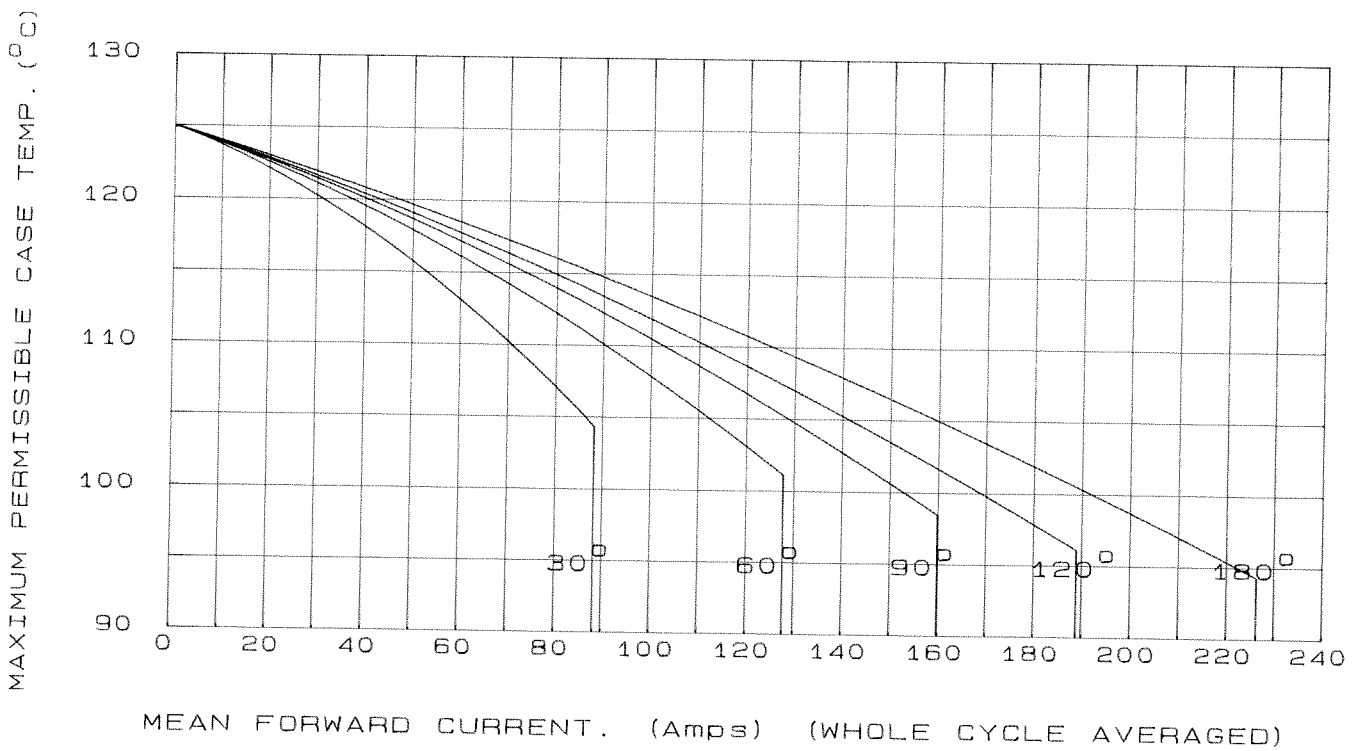
SINE WAVE





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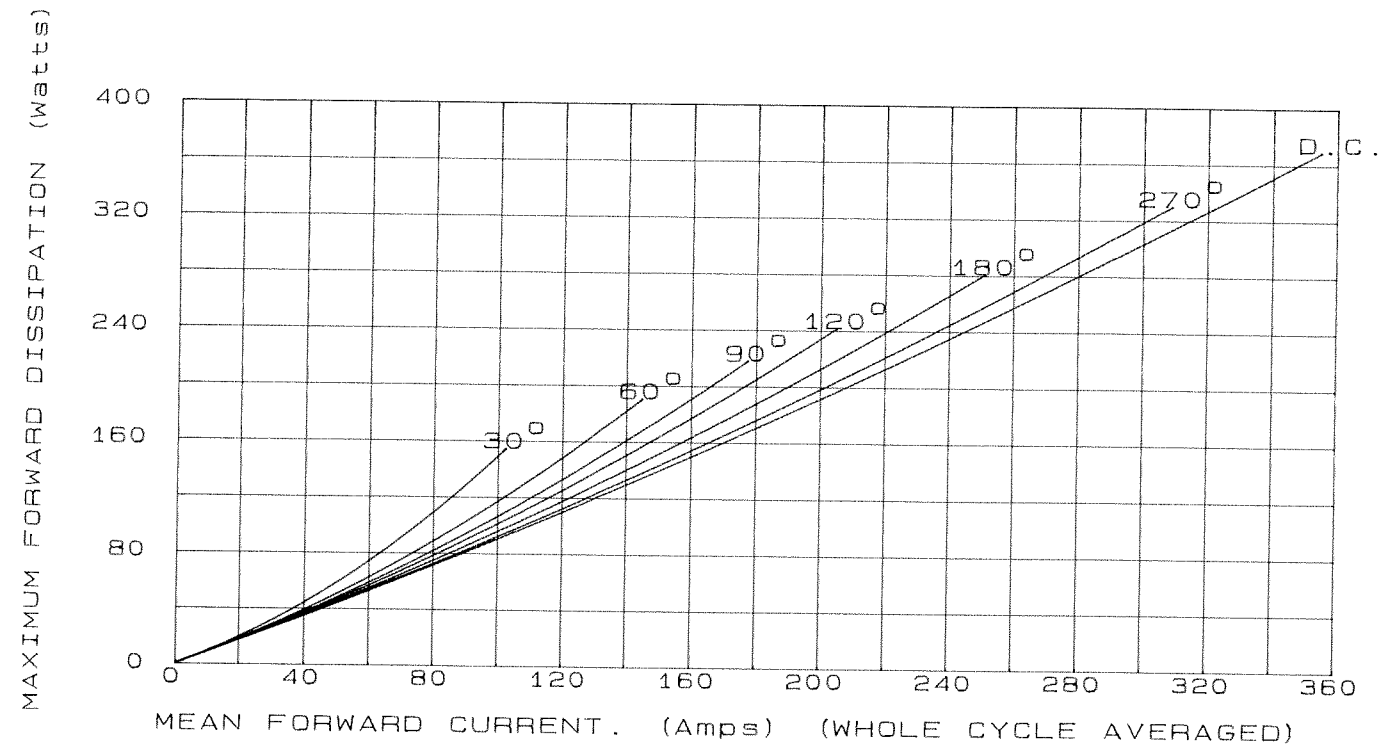
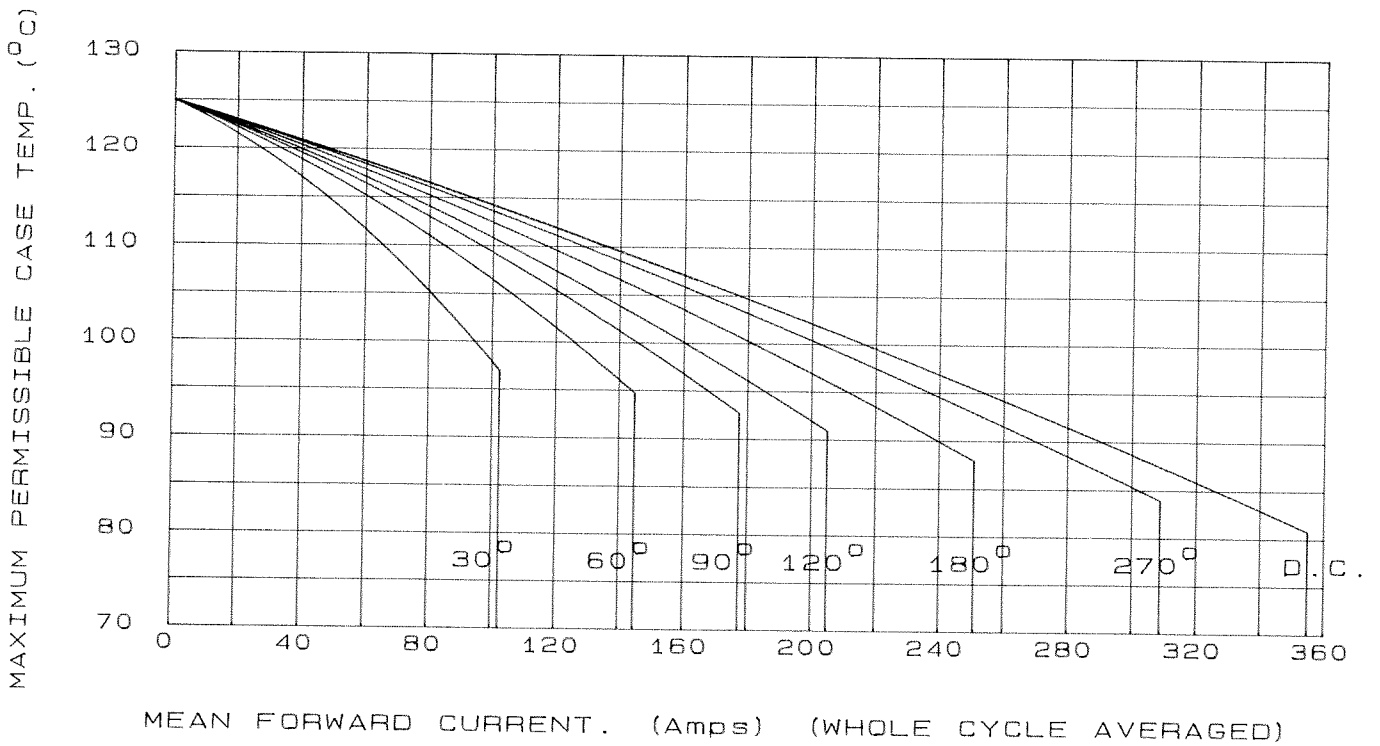
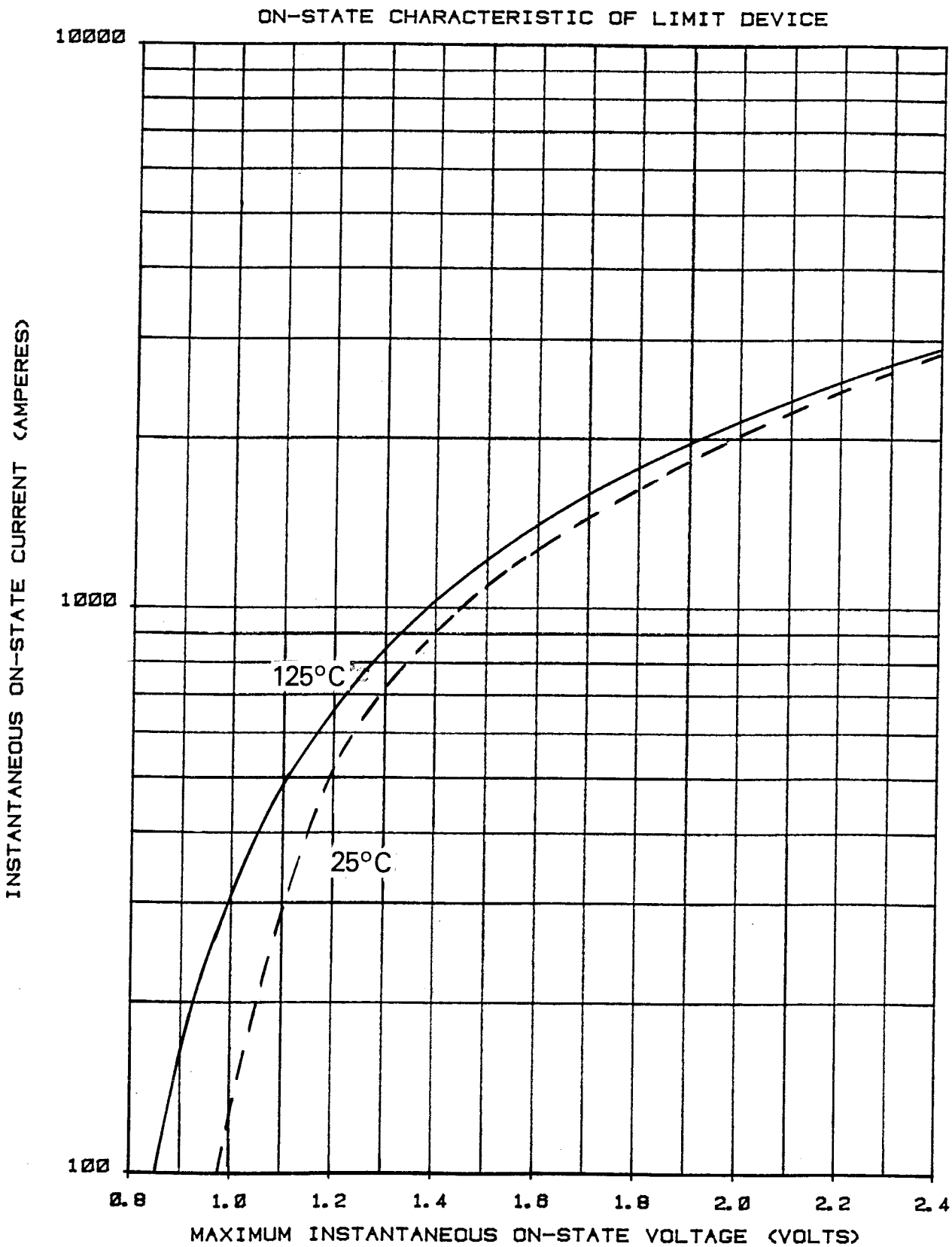
SQUARE WAVE






ON-STATE CHARACTERISTIC OF LIMIT DEVICE
10000
1000
100
INSTANTANEOUS ON-STATE CURRENT (AMPERES)
125°C
25°C
0.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
MAXIMUM INSTANTANEOUS ON-STATE VOLTAGE (VOLTS)

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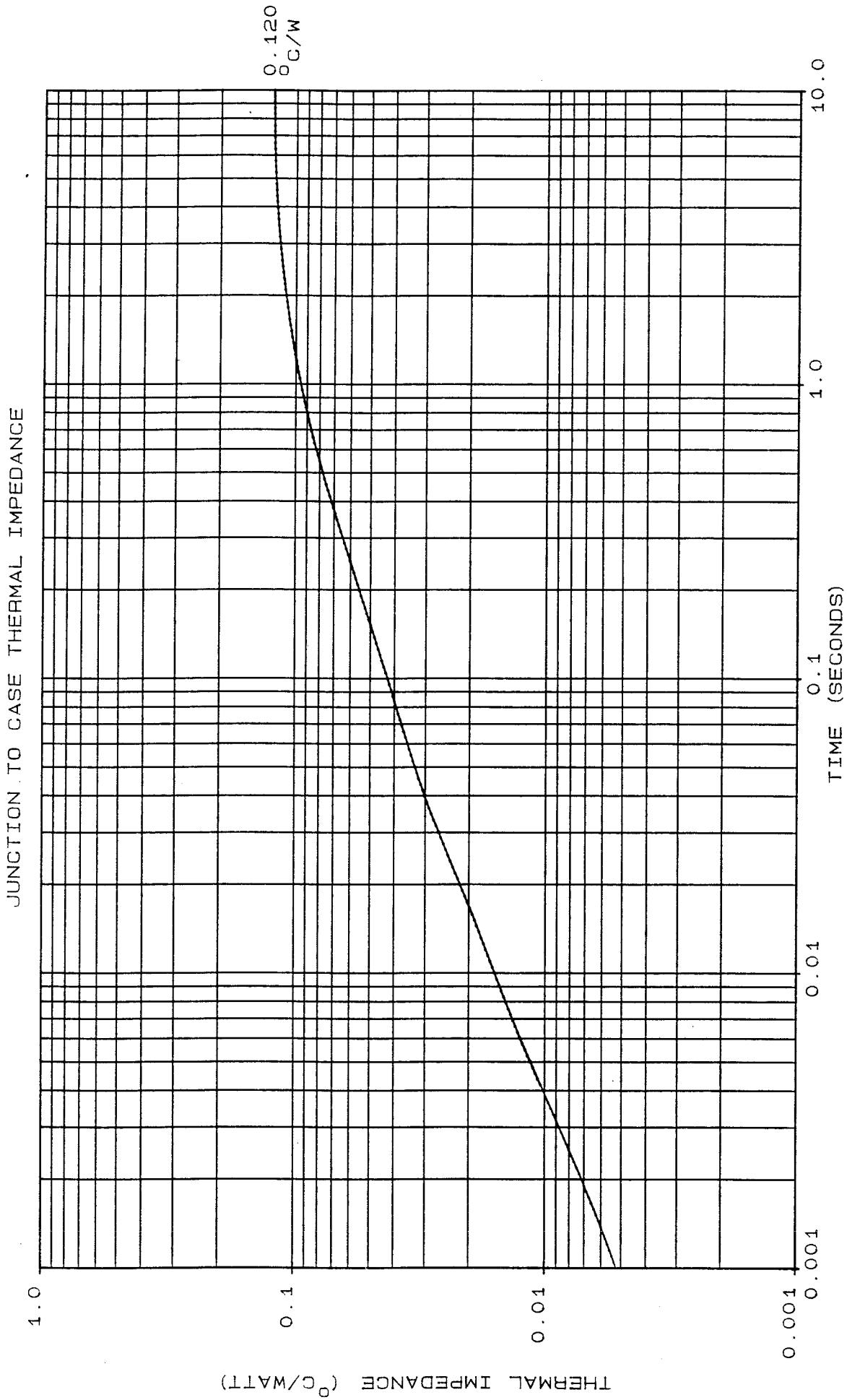

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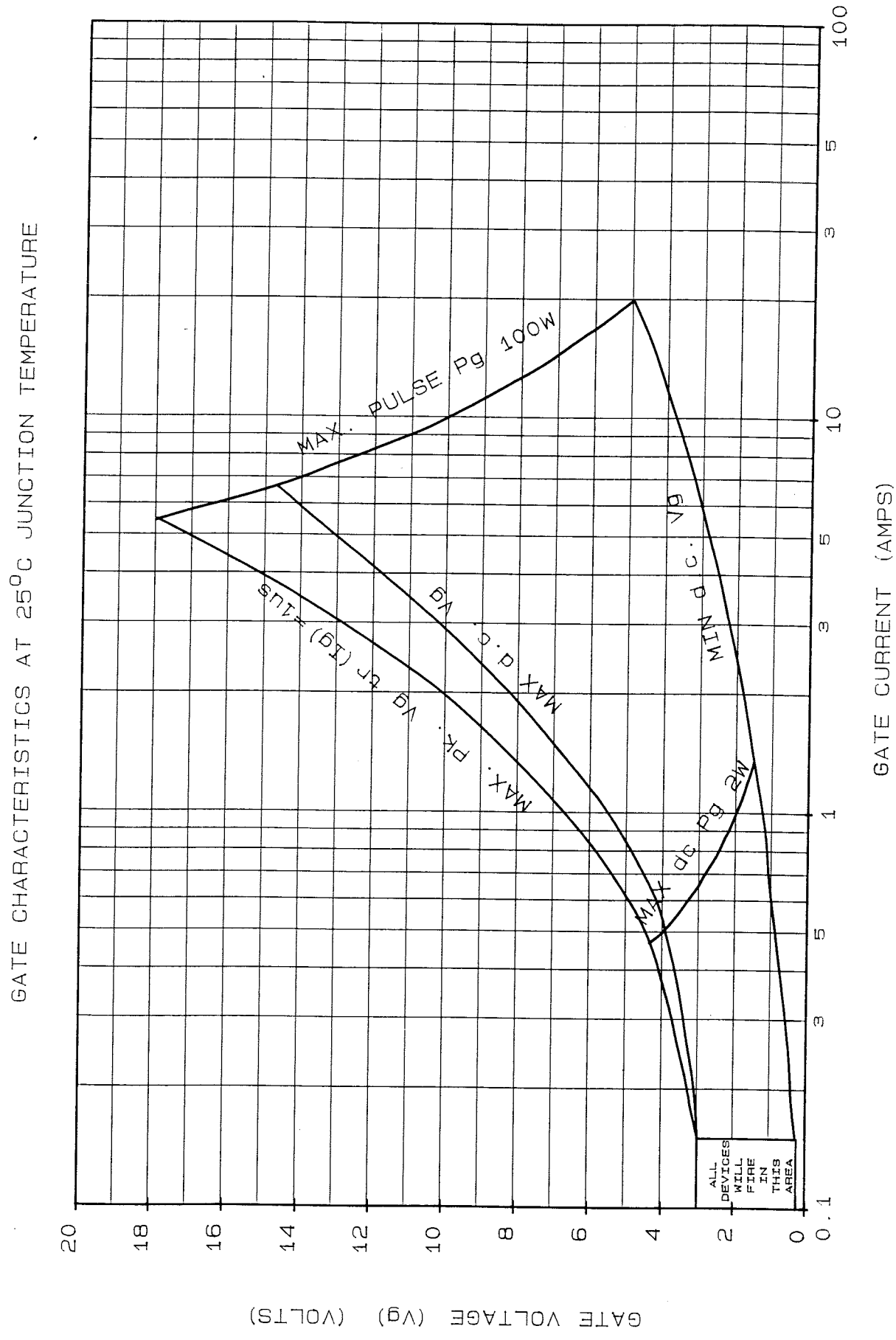
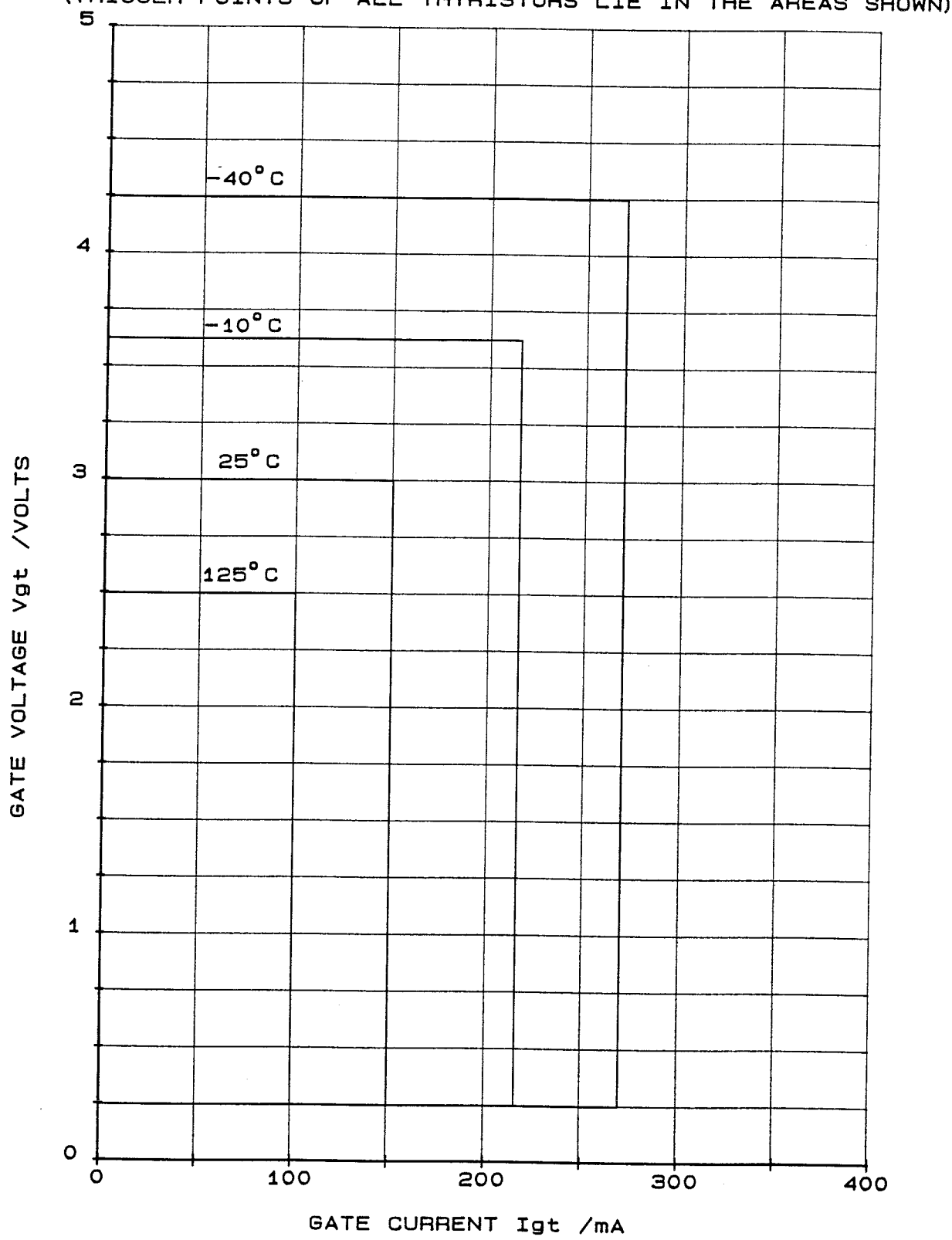
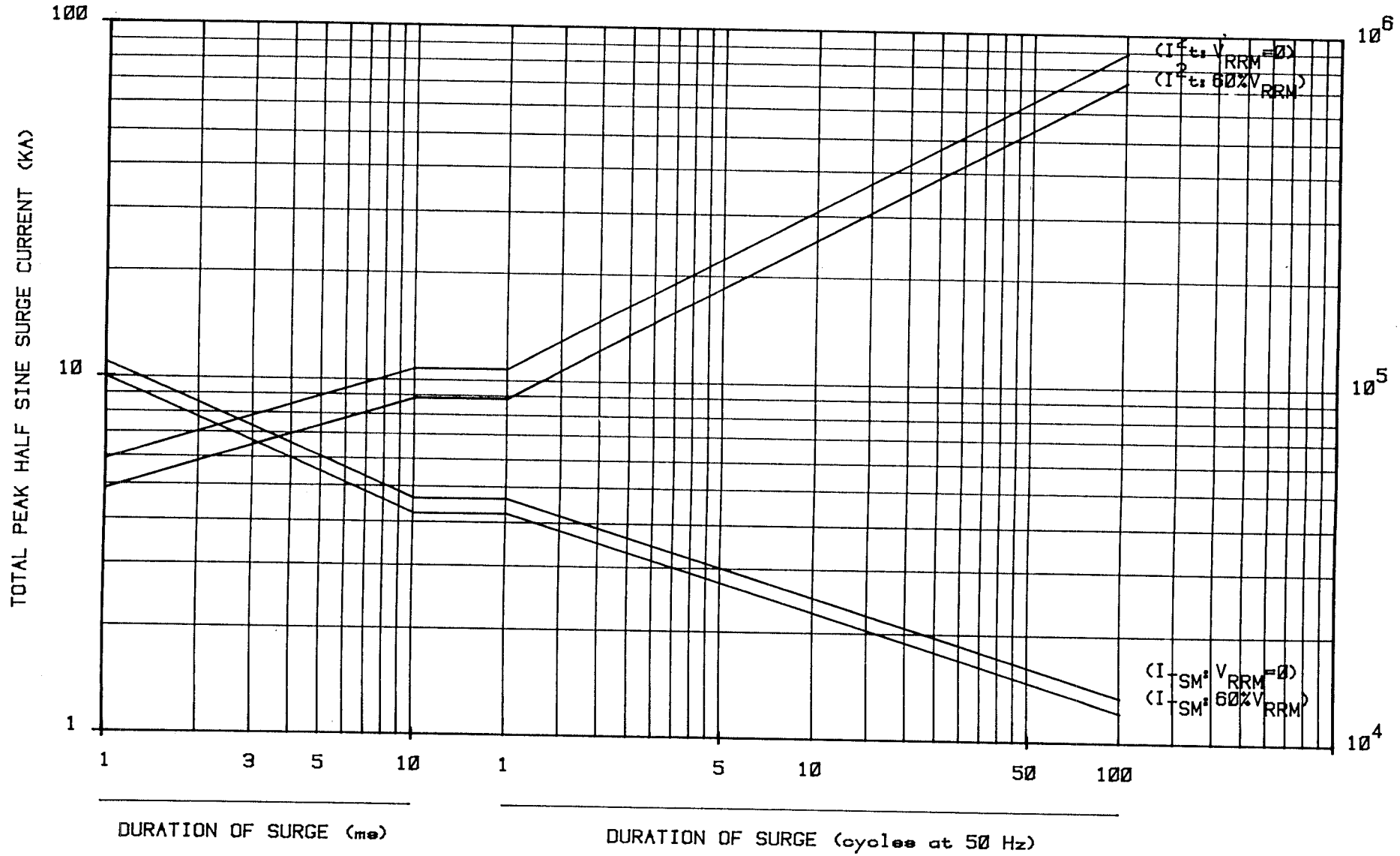


GATE TRIGGERING CHARACTERISTICS
(TRIGGER POINTS OF ALL THYRISTORS LIE IN THE AREAS SHOWN)



MAXIMUM NON REPETITIVE SURGE CURRENT AT INITIAL JUNCTION TEMPERATURE 125°C

[GATE MAY TEMPORARILY LOSE CONTROL OF CONDUCTION ANGLE]



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SCALE	1/1
DRN	
CHKD	
APPD	
	A
S	NI

INTERNATIONAL OUTLINE No.

WEIGHT. 280 GRAMS APPX.

FINISH. BRIGHT NICKEL PLATE. - 12 -

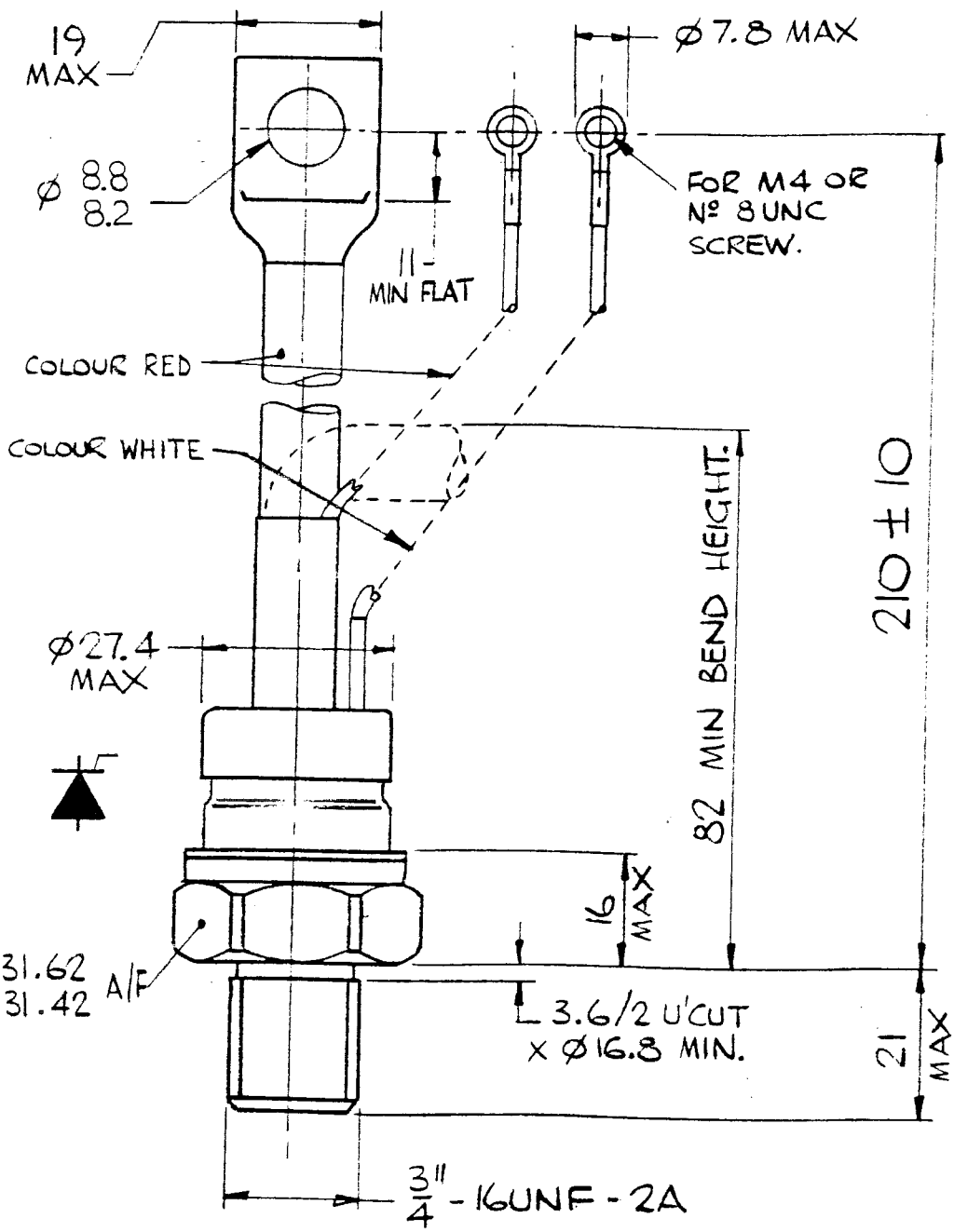
DEVICE MARKING INCLUDES MONOGRAM, TYPE No., SPEC. No. AND POLARITY SYMBOL.

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

NOTES.

G.A. DRG. No. 103A162

TYPE NUMBER	
N170P	P200P
N195P	P202P
N275P	P204P
	P205P
	P214P
	P215P
	P270P



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

WESTCODE ® SEMICONDUCTORS

THIRD ANGLE PROJECTION

DIMNS. IN MILLIMETRES

DRG. No. 101A225

ISS	REVISIONS
1	19.9.78
2	17.11.78 M670 TYPE Nº ADDED
3	Ø8.8/8.2 Hole WAS 10.7/10.2
4	17.12.79 M817 19 WAS 21.4
5	27.11.84 M1218 FIN WAS ET.
6	10.10.88. RED & WHITE WERE VIOLET & ORANGE

5355E OZALID (U.K) LTD

A4