

Phase Control Thyristor Stud Types N0335SX120 to N0335SX160

The data sheet on the subsequent pages of this document is a scanned copy of existing data for this product.
(Rating Report 86TR9 Issue 1)

This data reflects the old part number for this product which is: N195PH02-15.
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
Device no longer available for grades 02 to 10 (200V to 1000V V_{RRM}/V_{DRM})

The following links will direct you to the appropriate outline drawings
Outline W18 – 3/4" Ceramic stud
Outline W25 – 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			
N0335	SX	◆◆	0
Fixed Type Code	SC – 3/4" Ceramic stud SD – 3/4" Ceramic stud removed	Voltage code $V_{RRM}/100$ 12-16	Fixed Code
Typical Order Code: N0335SD140, 3/4" Ceramic stud removed, 1400V V_{RRM}/V_{DRM}			

IXYS Semiconductor GmbH
Edisonstraße 15
D-68623 Lampertheim
Tel: +49 6206 503-0
Fax: +49 6206 503-627
E-mail: marcom@ixys.de

WESTCODE
An  IXYS Company

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

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

www.westcode.com

www.ixys.com

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

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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.

QUALITY EVALUATION LABORATORY

Rating Report: 86TR9

Date : 1st July, 1986

Origin:

Pages : 12

Thyristor Type N195PH02-H15

Written: *M.W. Dunlop*

Checked: *M.W.*

Approved: *[Signature]*

This thyristor consists of a diffused silicon slice of 24 mm diameter mounted under sprinc pressure in a stud base, top hat housing with flexible lead. This Report supersedes Rating Report 79TR27 (Issue 2)

Ratings

Voltage Grades

: H02-H15

V_{DSM}

: 200-1500V

V_{RSM}

: 300-1600V

V_{DRM}, V_{RRM}

: 200-1500V

I_T (AV) : Single phase : 50 Hz, 180° sinewave

$T_{CASE} = 85^{\circ}C$

: 226A

I_T (rms) max.

: 355A

I_T d.c. max.

: 355A

I_{TSM} : t = 10ms half sinewave; T_J (initial) = 125°C: $V_{RM} = 0.6V_{RRM} (MAX)$: 4650A

I_{TSM} : t = 10ms half sinewave; T_J (initial) = 125°C: $V_{RM} \leq 10V$: 5120A

I^2t : t = 10 ms; T_J (initial) = 125°C : $V_{RM} = 0.6V_{RRM} (MAX)$: $108 \times 10^3 A^2S$

I^2t : t = 10 ms; T_J (initial) = 125°C : $V_{RM} \leq 10V$: $131 \times 10^3 A^2S$

I^2t : t = 3 ms; T_J (initial) = 125°C : $V_{RM} \leq 10V$: $97 \times 10^3 A^2S$

di/dt : (Repetitive) $T_J = 125^{\circ}C$ Gate: 20V, 20 μ A Rise time 1 μ S : 500A/ μ S

I_{FGM} : Anode positive with respect to cathode

: 20A

V_{FGM} : " " " " " "

: 18V

V_{RGM} :

: 5V

P_G (AV) :

: 2W

P_{GM} :

: 100W

V_{GD} :

: 0.25V

T_C operating range

: -40 to 125°C

T_{stg} Non-operating

: -40 to 150°C

Characteristics

(maximum values unless stated otherwise)

$I_{GT} : T_J = 25^{\circ}C$)				
$I_H : T_J = 25^{\circ}C$	)	$V_A = 6V ; I_A = 1A$			: 150mA
$V_{GT} : T_J = 25^{\circ}C$	)				: 600mA
$V_D : T_J = 125^{\circ}C$					: 3V
$r_T : T_J = 125^{\circ}C$					: 0.92V
$V_{TM} : I_{TM} = 710A$		$T_{VJ} = 125^{\circ}C$			: 0.99mohms
$R_{th} (J/C)$					: 1.62V
dV/dt	: Linear ramp to $0.8V_{DRM(max)}$, $T_J = 125^{\circ}C$: Gate O/C; repetitive				: $200V/\mu S^*$
$I_{DRM} : T_J = 125^{\circ}C$		$V_{DM} = V_{DRM(max)}$			: 20mA
$I_{RRM} : T_J = 125^{\circ}C$		$V_{RM} = V_{RRM(max)}$			: 20mA
$Q_{RR} : I_{TM} = 300A$		$dI/dt = 10 A/\mu S$, 50% chord value			
		$V_{RM} : 50V$		$T_{VJ} = 125^{\circ}C$	: 460uC typical
$tq : I_{TM}$		dI/dt		$A/\mu S; T_J = 125^{\circ}C$	
		$dV/dt = 200V/\mu S$		to $0.8V_{DRM}$	
		When specified, $20V/\mu S$		to $0.8V_{DRM}$	Typical
Outline drawing					: 101A225
$R_{th} (C-H.S.)$					: $0.04^{\circ}C/W$
Mounting torque					: 2.5 - 2.77 Kgfm
Outline (JEDEC NO.)					:

*Repetitive dv/dt

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

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Changes to 79TR27 (Issue 2)

p1: V_{DWM} , V_{RWM} deleted

I_{FGM} increased to 20A

T_C operating range MIN decreased to -40°C

p2: I_L (= 200mA) changed to I_H at 6V, $1A = 600\text{mA}$

Note 1 deleted, replaced by note on dv/dt

p7: $I_T - V_T$, Z_{th-t} drawn on separate pages

Old p8: $V_G - I_G$ redrawn with $I_{FGM} = 20A$

Old p9: $I_{GT} - V_{GT}$: axes interchanged

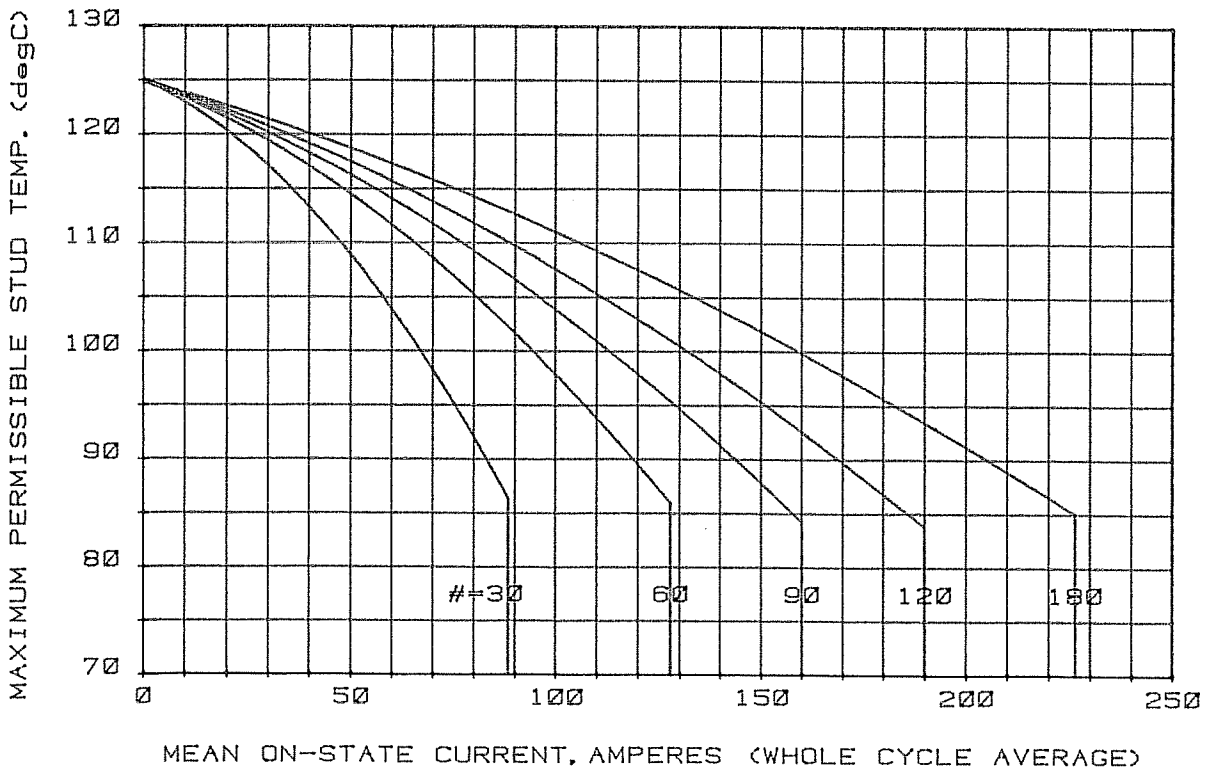
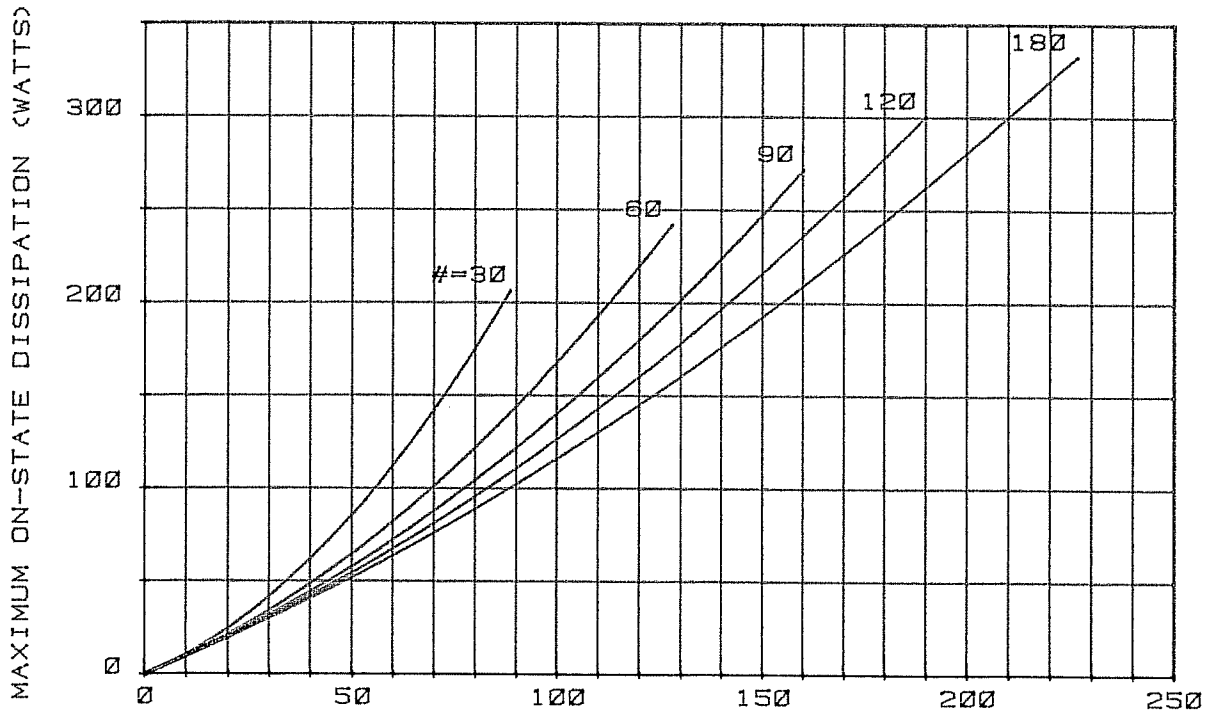
Voltage Ratings

Voltage Grade	V_{DSM} V_{DRM} V_{RRM} 'H' 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
10	1000	1100	700
12	1200	1300	810
14	1400	1500	930
15	1500	1600	980

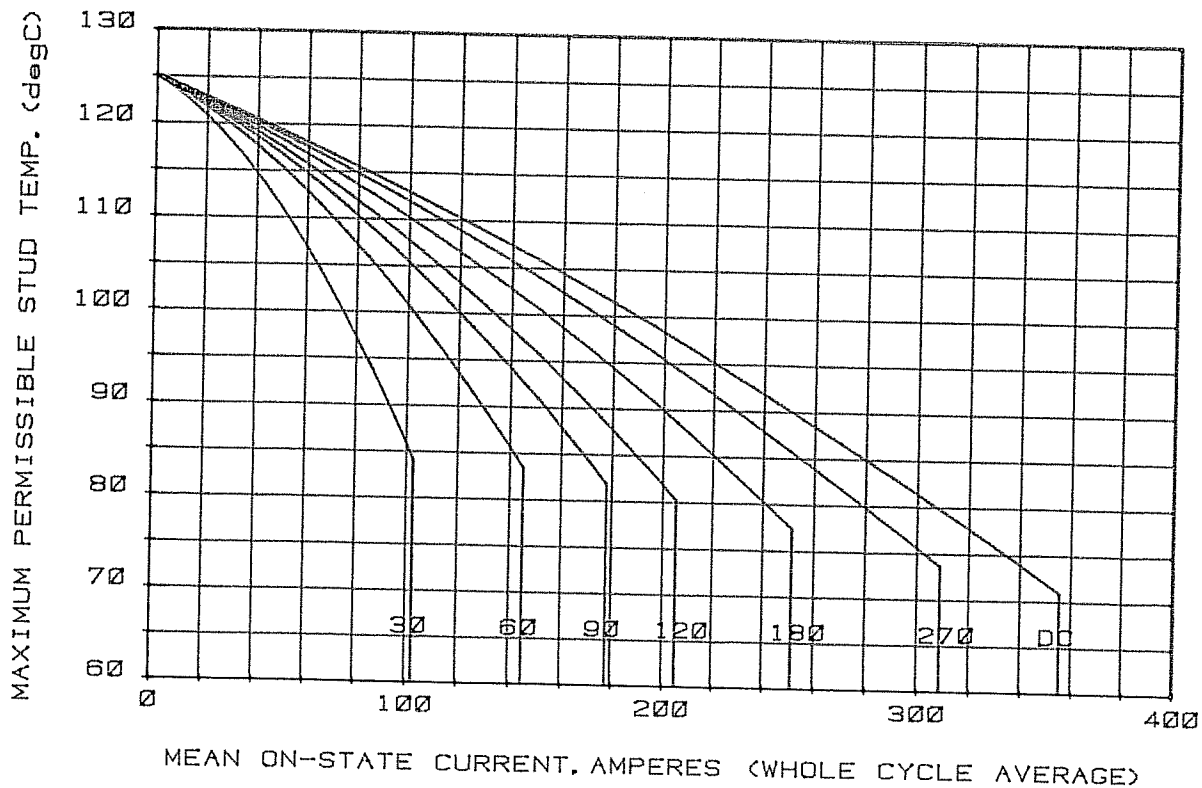
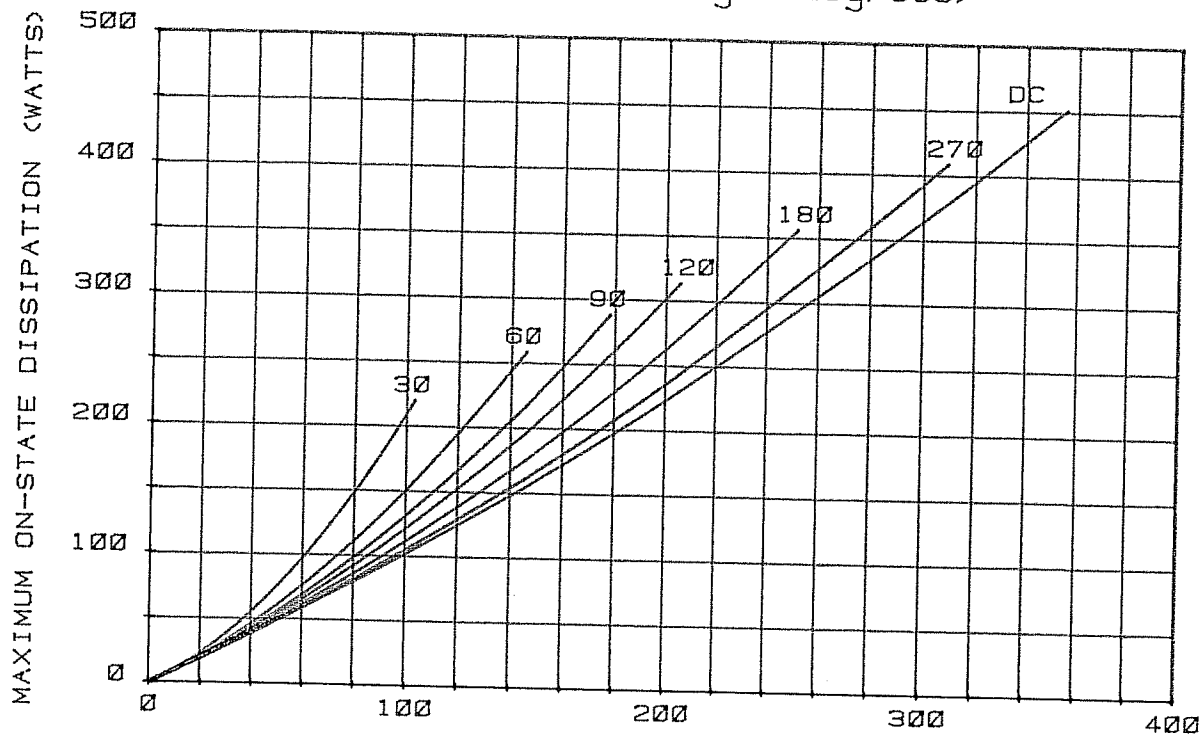
Extension of Voltage Grades

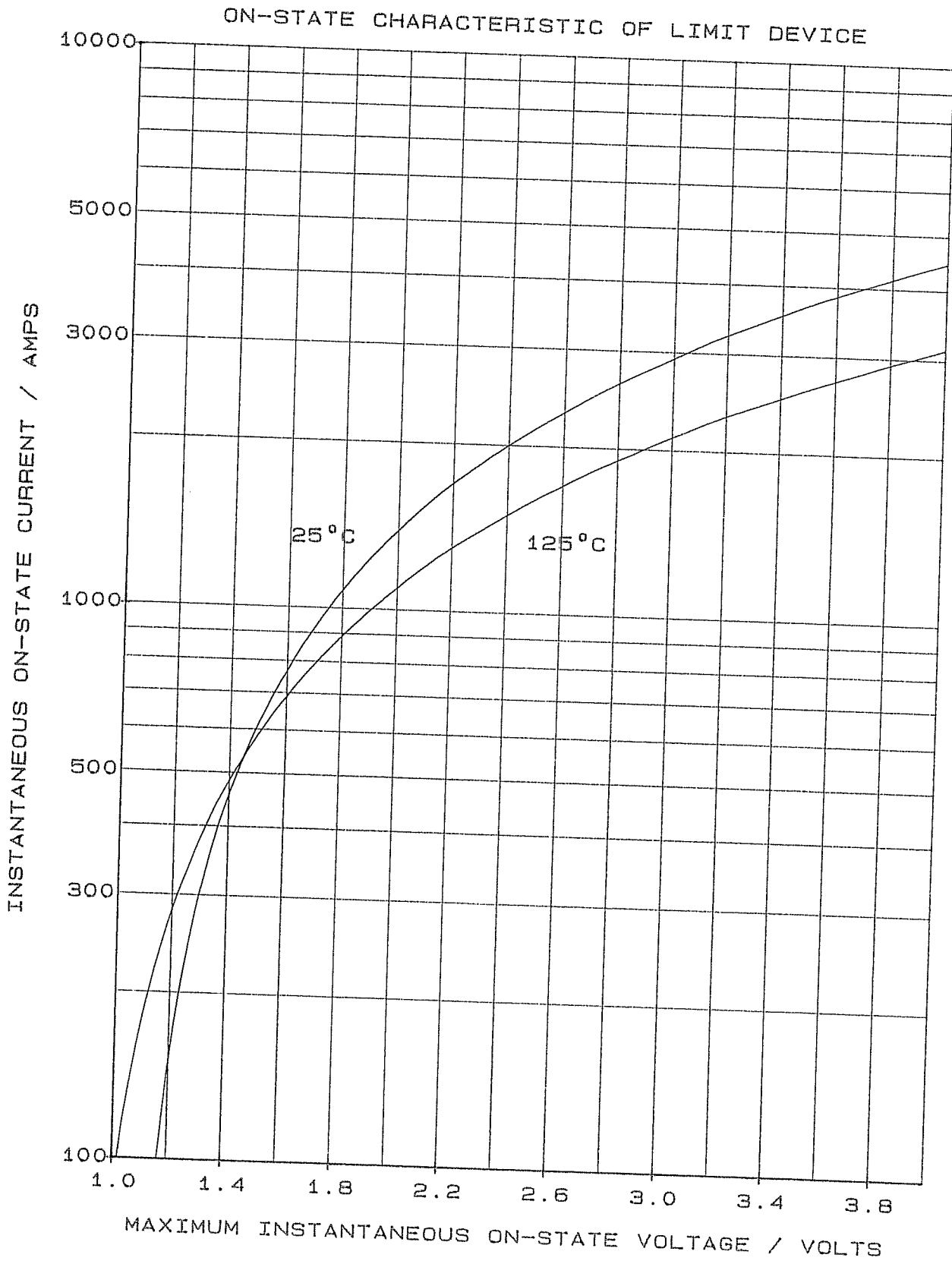
This report is applicable to other and higher voltage grades when supply has been agreed by Sales/Production.

SINE WAVE
 # = conduction angle (degrees)

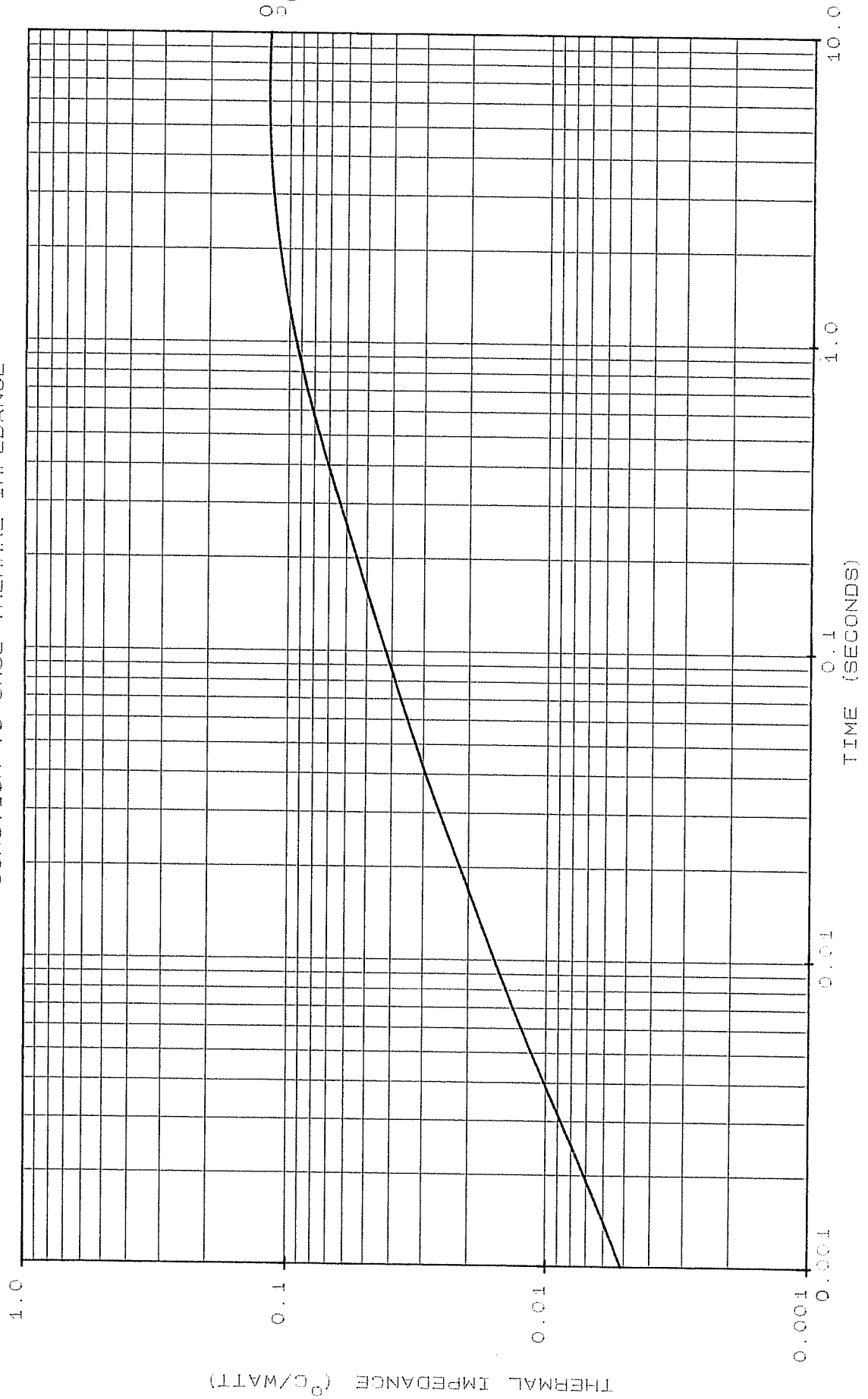


SQUARE WAVE
 # = conduction angle (degrees)

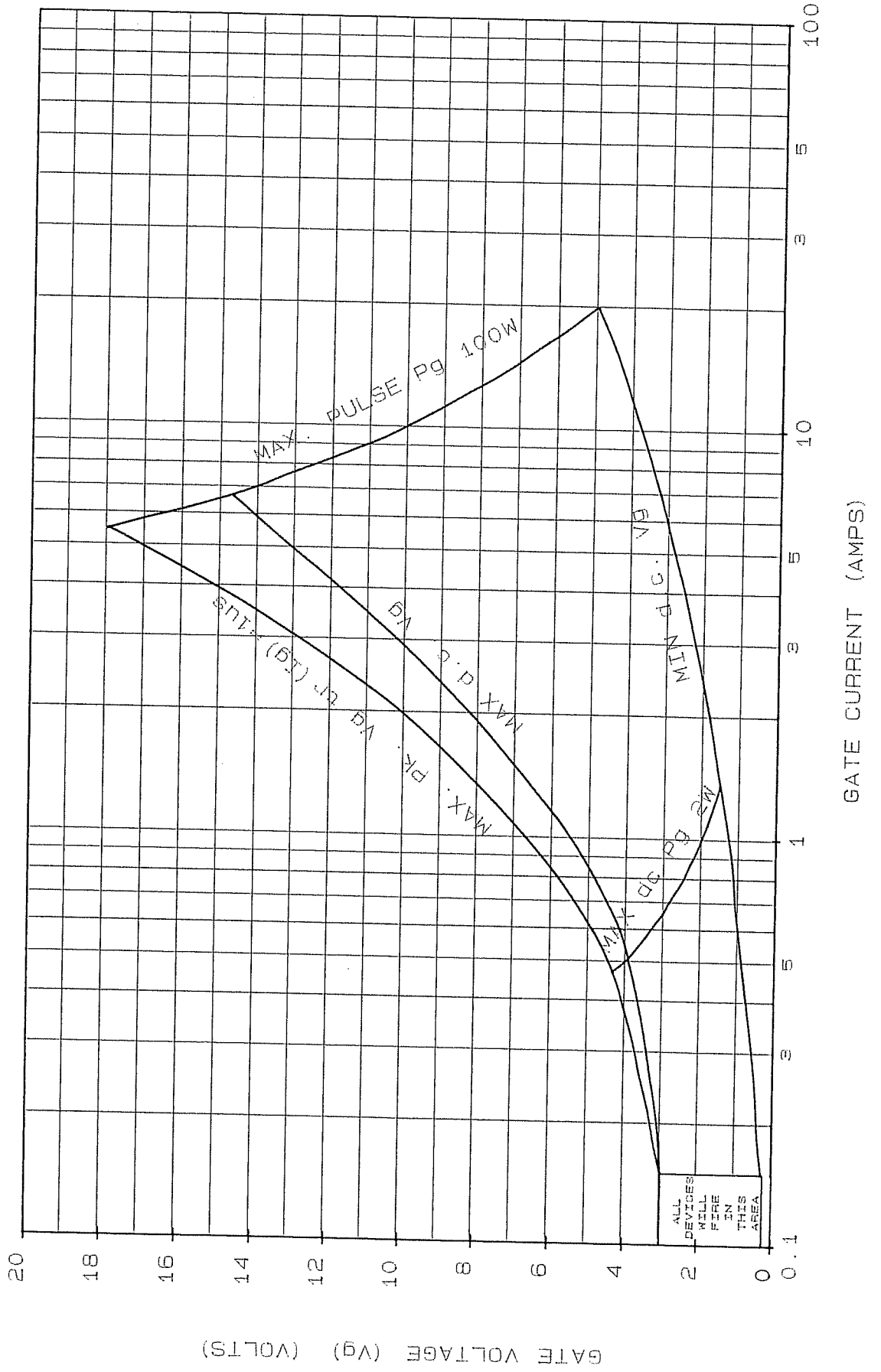




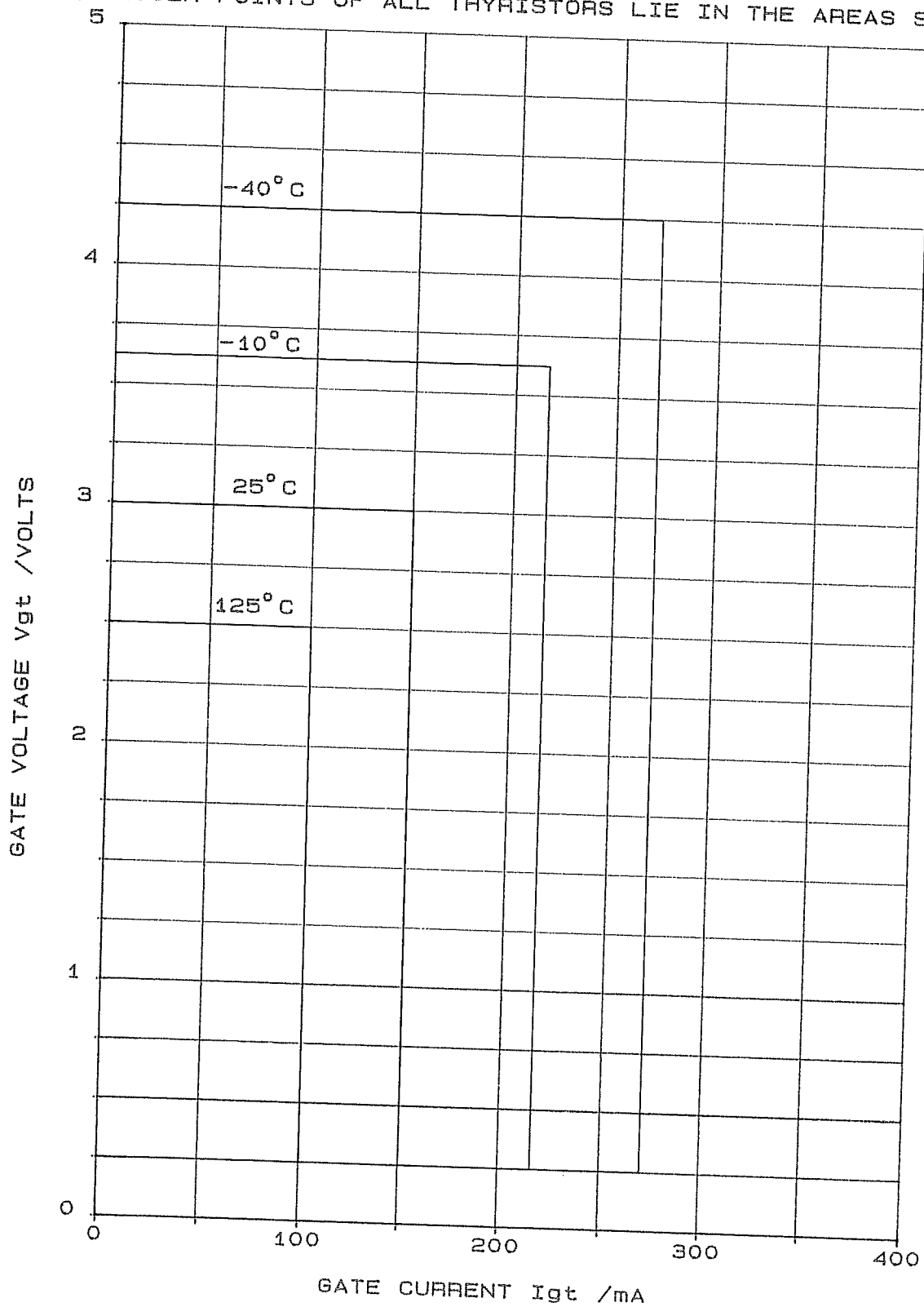
JUNCTION TO CASE THERMAL IMPEDANCE



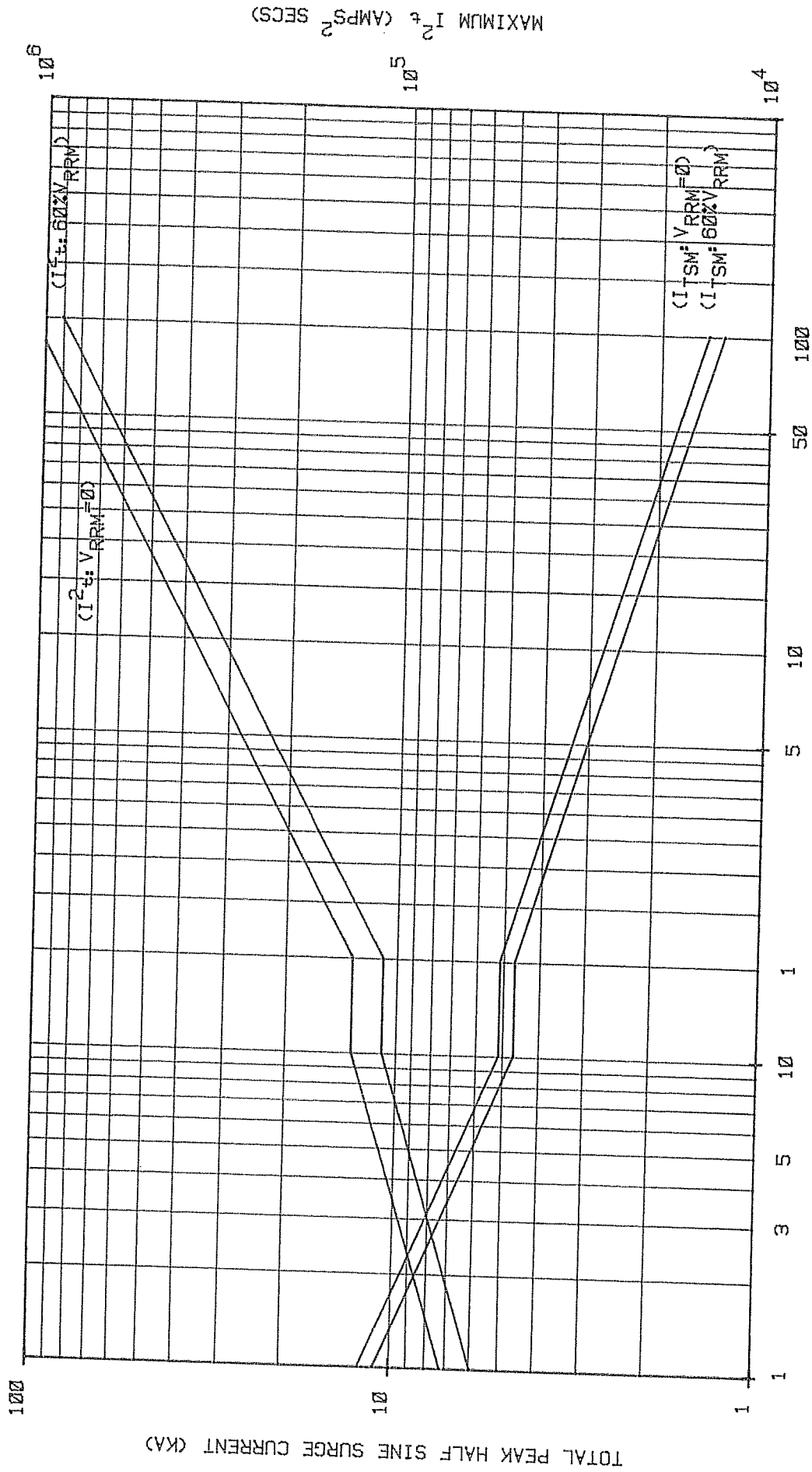
GATE CHARACTERISTICS AT 25°C JUNCTION TEMPERATURE



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

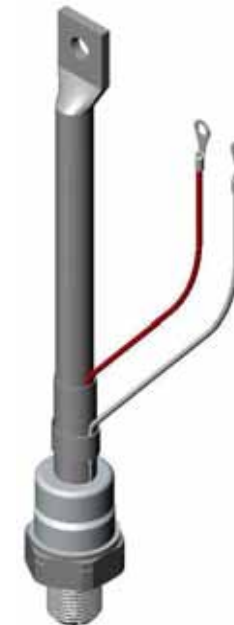
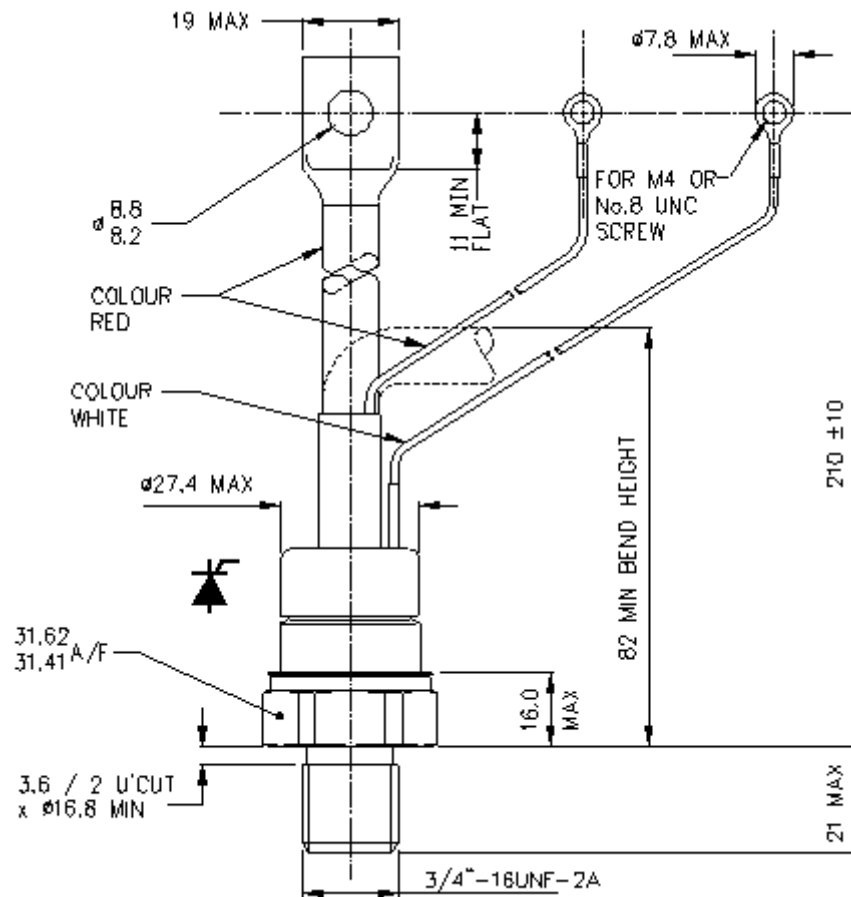


DURATION OF SURGE (cycles at 50 Hz)

DURATION OF SURGE (ms)

Drawing Number – W18
Outline Number – 101A225

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Weight 280g