

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 – 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			
N0416	S#	◆◆	0
Fixed Type Code	SC – 3/4" Ceramic stud SD – 3/4" Ceramic stud removed	Voltage code V _{RRM} /100 02-08	Fixed Code
Typical Order Code: N0416SC080, 3/4" Ceramic stud, 800V V _{RRM} /V _{DRM}			

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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 AND EVALUATION LABORATORY

Rating Report: 93TR1

Date: 28th June, 1993

Origin: Q.E.L.

Pages: 12

Thyristor Type N275PH02-08

Written by: *M. Baker*
M. Baker

Checked: *B/H*

Approved: *[Signature]*

RATINGS

Voltage Grades

V_{DSM}	: 02-08
V_{RSM}	: 200-800V
V_{DRM}, V_{RRM}	: 300-900V
$I_{T(AV)}$: Single phase; 50 Hz, 180° sinewave $T_{CASE} = 94^{\circ}C$: 200-800V
$I_{T(rms)}$ Max.	: 226A
$I_{T d.c.}$ Max.	: 355A
I_{TSM} : $t = 10$ ms half sinewave; $T_{J(initial)} = 125^{\circ}C$; $V_{RM} = 0.6 V_{RRM(MAX)}$: 355A
I_{TSM} : $t = 10$ ms half sinewave; $T_{J(initial)} = 125^{\circ}C$; $V_{RM} \leq 10V$: 6000A
I^2t : $t = 10$ ms; $T_{J(initial)} = 125^{\circ}C$; $V_{RM} = 0.6V_{RRM(MAX)}$: 6600A
I^2t : $t = 10$ ms; $T_{J(initial)} = 125^{\circ}C$; $V_{RM} \leq 10V$: 180 x 10 ³ A ² SECS
I^2t : $t = 3$ ms; $T_{J(initial)} = 125^{\circ}C$; $V_{RM} \leq 10V$: 218 x 10 ³ A ² SECS
di/dt : (Repetitive) $T_J = 125^{\circ}C$; Gate: 20V, 20ohms Rise time 1 μ S	: 165 x 10 ³ A ² SECS
I_{FGM} : Anode positive with respect to cathode	: 500A/ μ S
V_{FGM} : Anode positive with respect to cathode	: 19A
V_{RGM} :	: 18V
$P_G(AV)$:	: 5V
P_{GM} :	: 2W
V_{GD} :	: 100W
T_C operating range	: 0.25V
T_{stg} Non operating	: -40°C to 125°C
	: -40°C to 150°C

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CHARACTERISTICS (maximum values unless stated otherwise)

I_{GT} : $T_J = 25^\circ C$)		: 150mA
I_H : $T_J = 25^\circ C$)	$V_A = 6V; I_A = 1A$: 400mA
V_{GT} : $T_J = 25^\circ C$)		: 3V
V_O : $T_J = 125^\circ C$: 0.85V
r_T : $T_J = 125^\circ C$: 0.535m Ω
A : $T_J = 25^\circ C$:
B : $T_J = 25^\circ C$:
C : $T_J = 25^\circ C$:
D : $T_J = 25^\circ C$:
A : (Constant) $T_J = 125^\circ C$:
B : $(B \times \ln(i)) T_J = 125^\circ C$:
C : $(C \times i) T_J = 125^\circ C$:
D : $(D \times \sqrt{I}) T_J = 125^\circ C$:
V_{TM} : $I_{TM} = 690A. T_J = 125^\circ C$: 1.22V
$R_{th(I-C)}$: 0.12 K/W
$R_{th(C-HS)}$: 0.04 K/W
dv/dt : Linear ramp to $0.8V_{DRM(max)}$; $T_J = 125^\circ C$; Gate O/c repetitive		: 200V/ μS^*
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_{RA} : $I_{TM} =$: dI/dt = A/ μS , 50% chord value $V_{RM} = 50V; T_J = 125^\circ C$:
t_q : $I_{TM} =$: dI/dt = A/ μS ; $T_J = 125^\circ C$; $V_{RM} = 50V$ 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 t_q /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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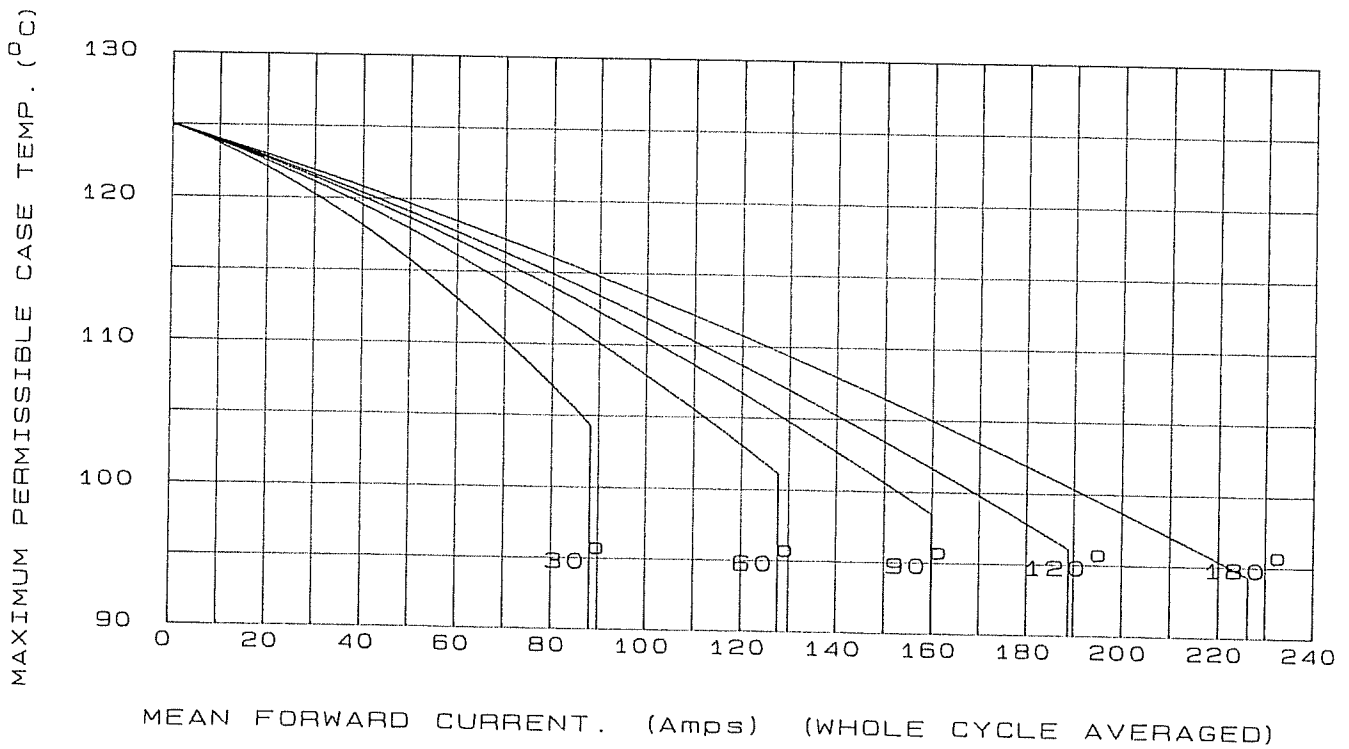
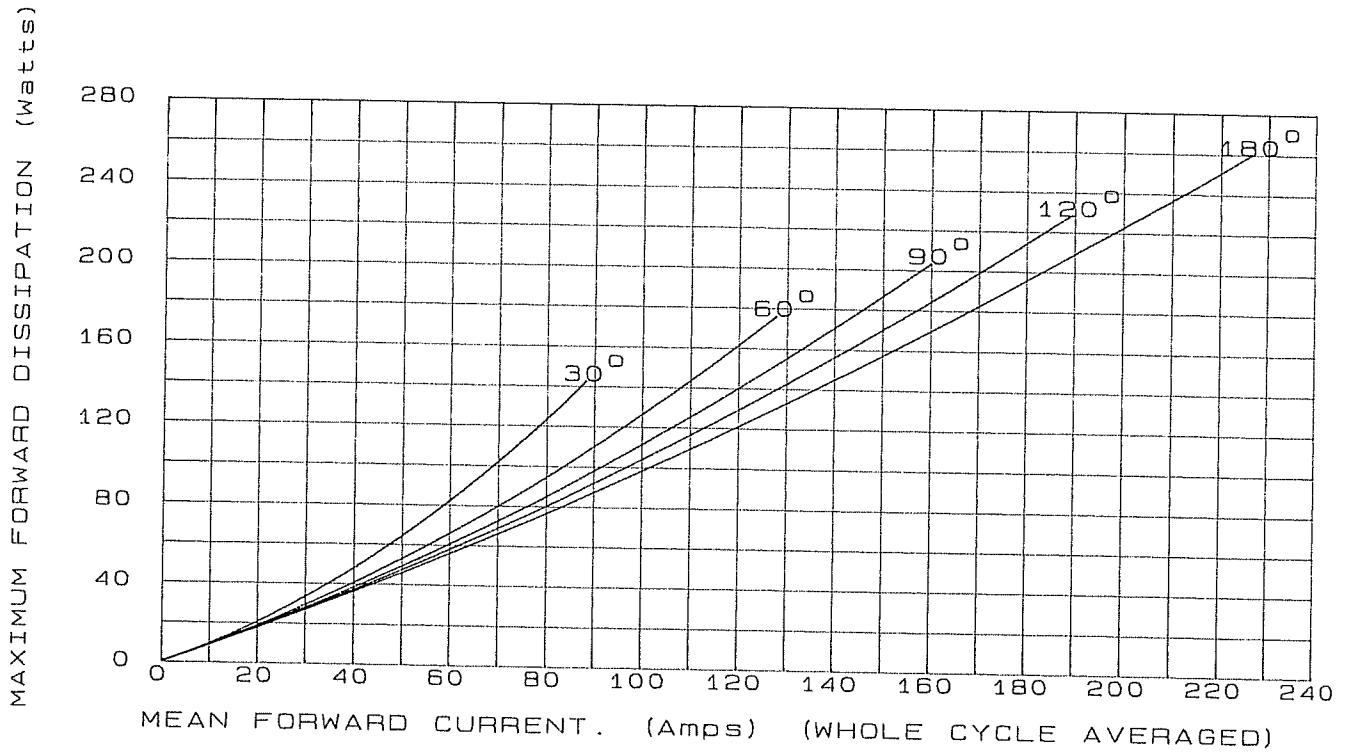
Voltage Ratings

Voltage Grade 'H'	V_{DSM}	V_{DRM} V	V_{RRM}	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

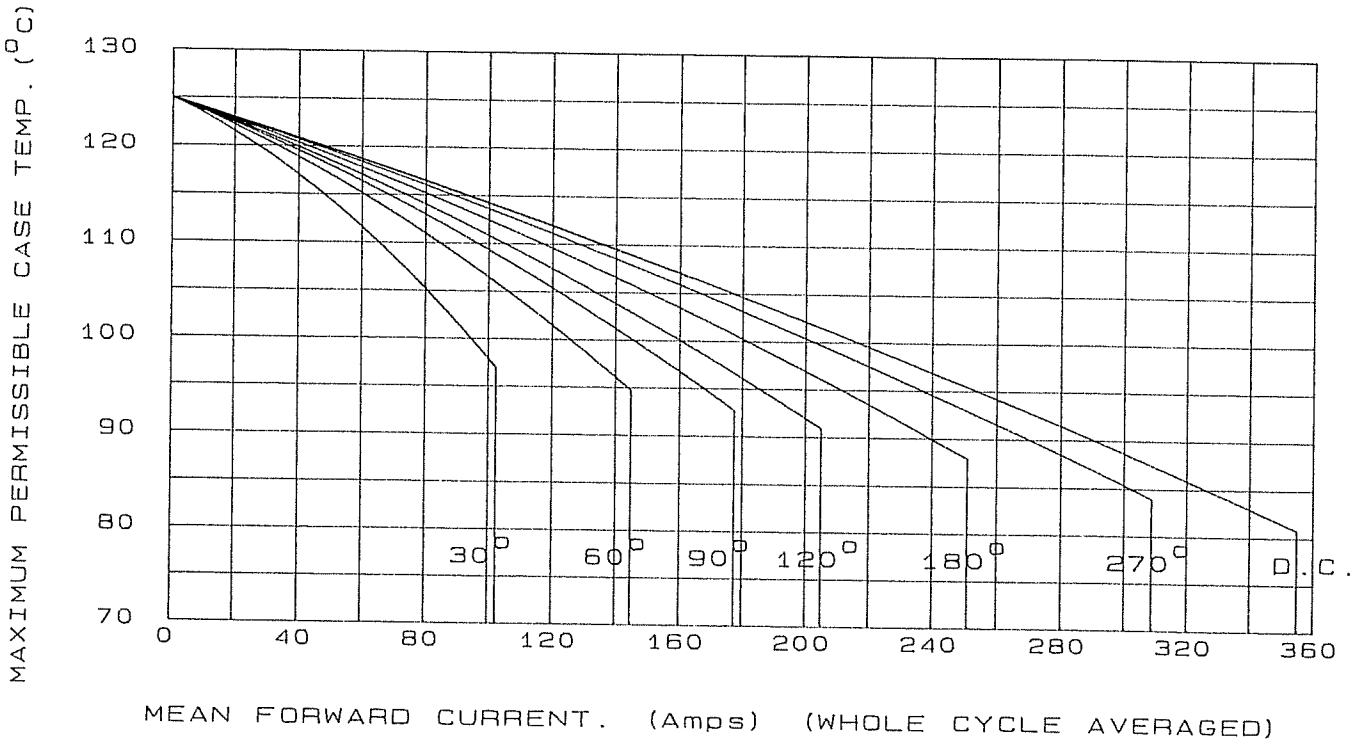
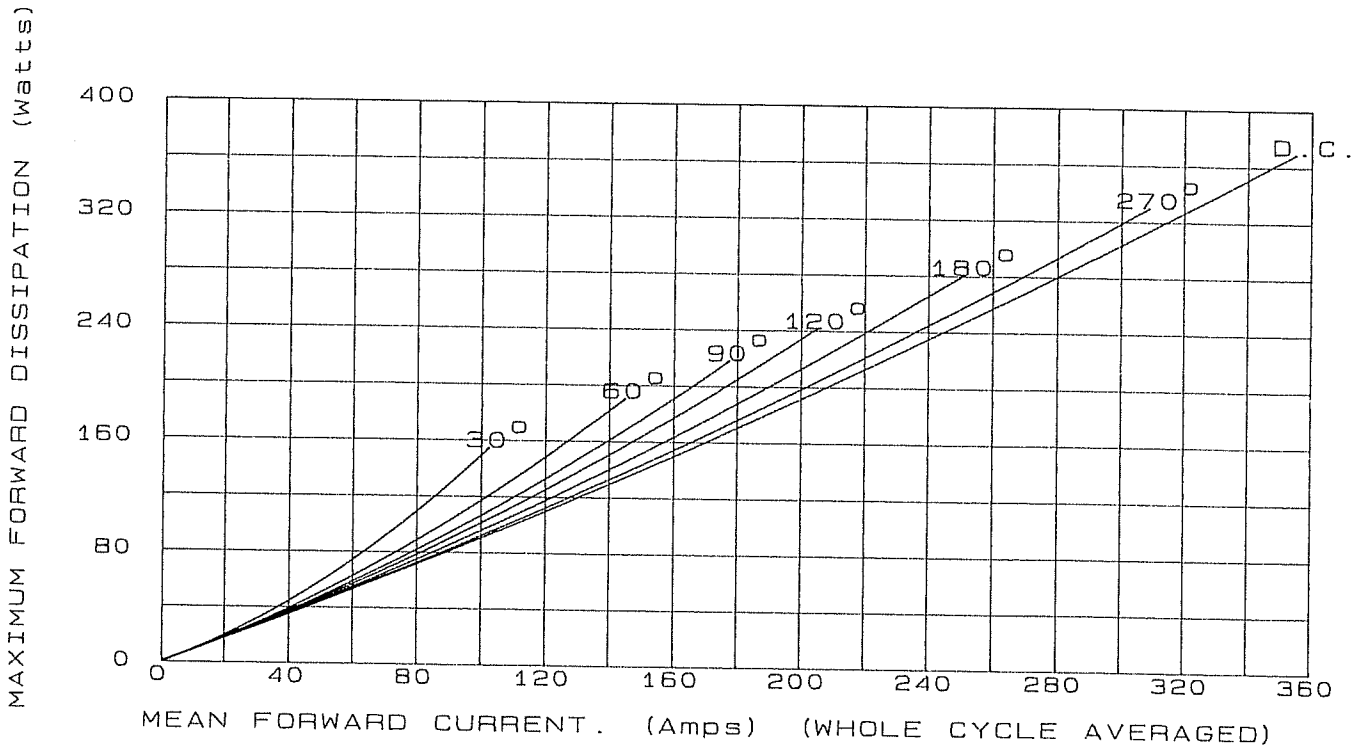
Extension of Voltage Grades

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

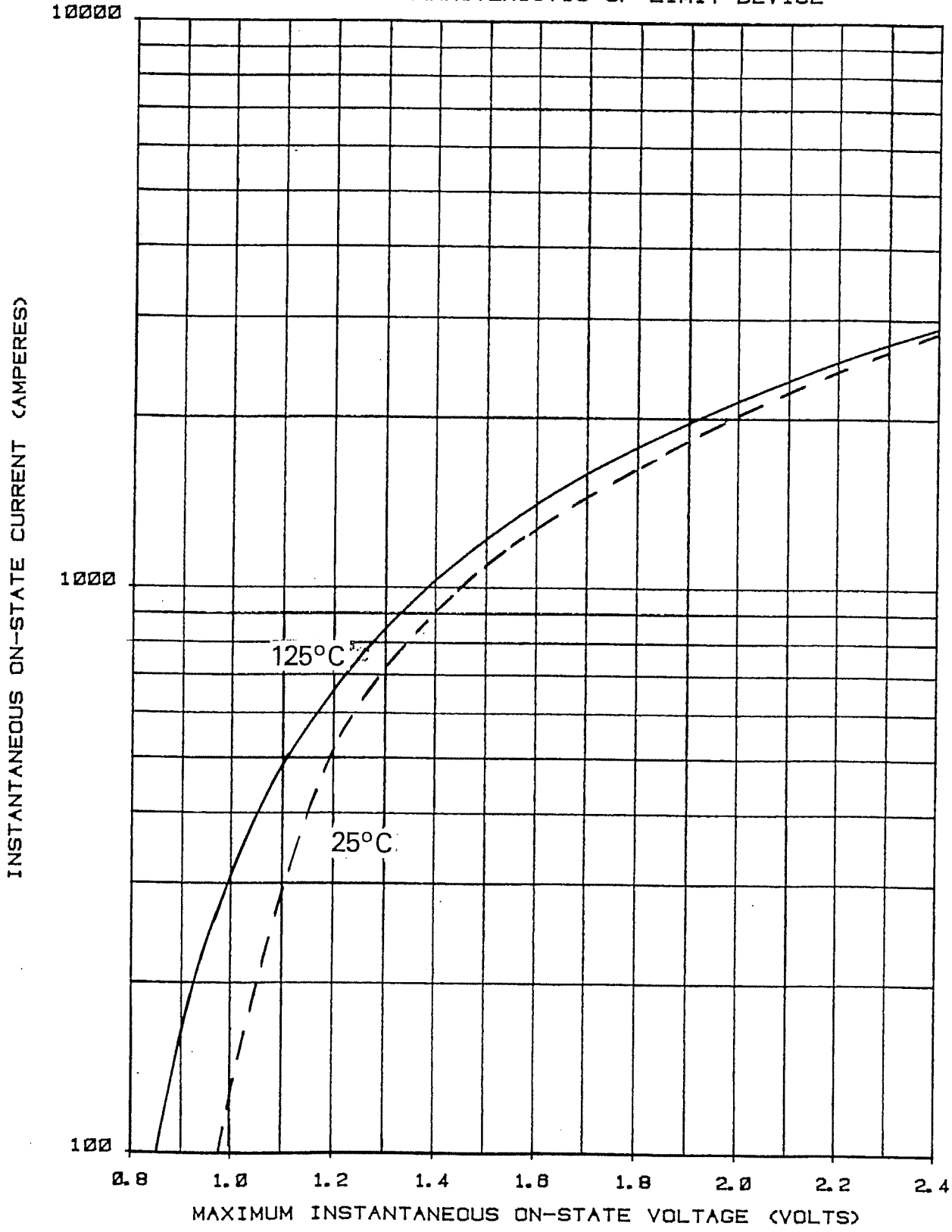
SINE WAVE



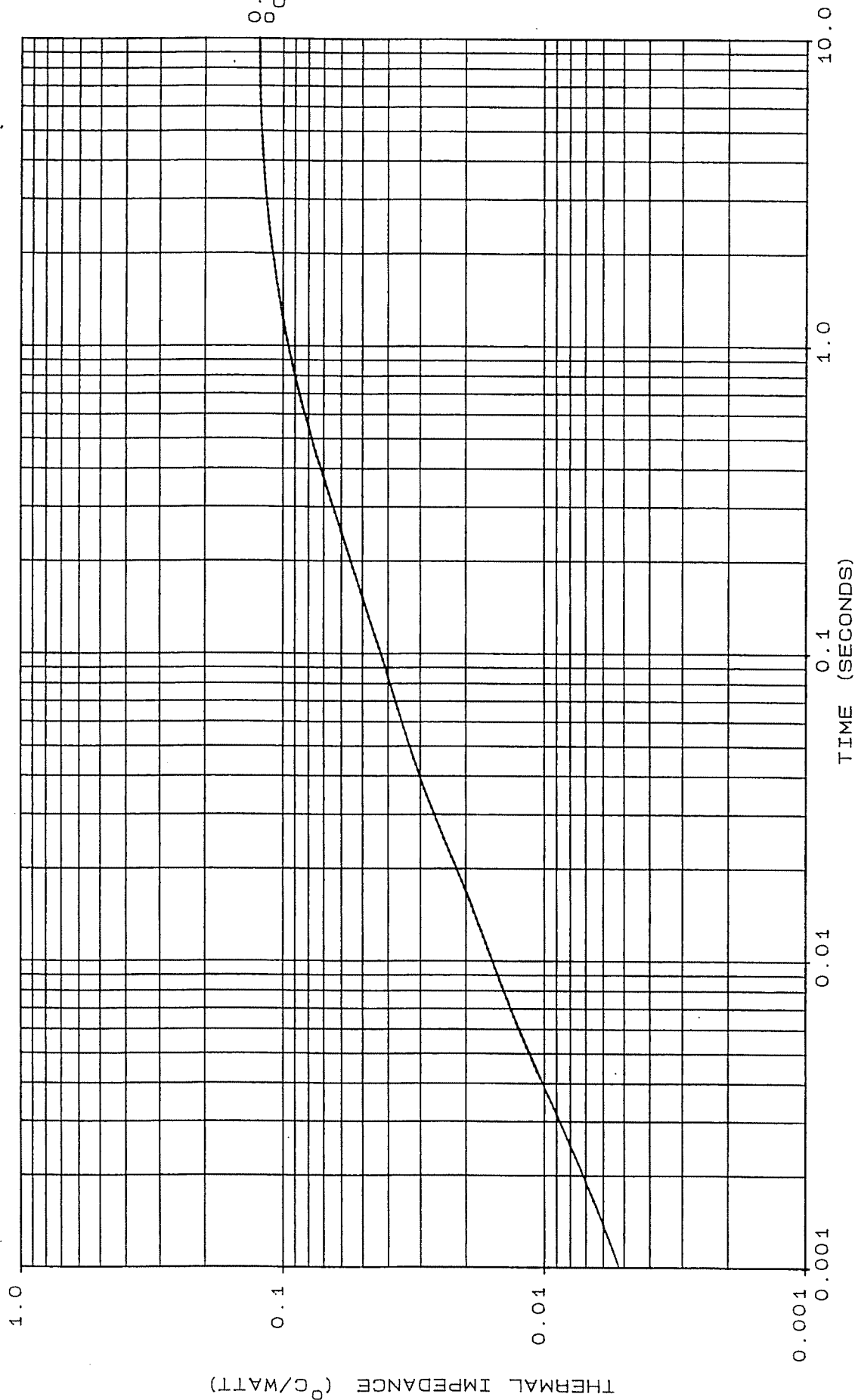
SQUARE WAVE



ON-STATE CHARACTERISTIC OF LIMIT DEVICE

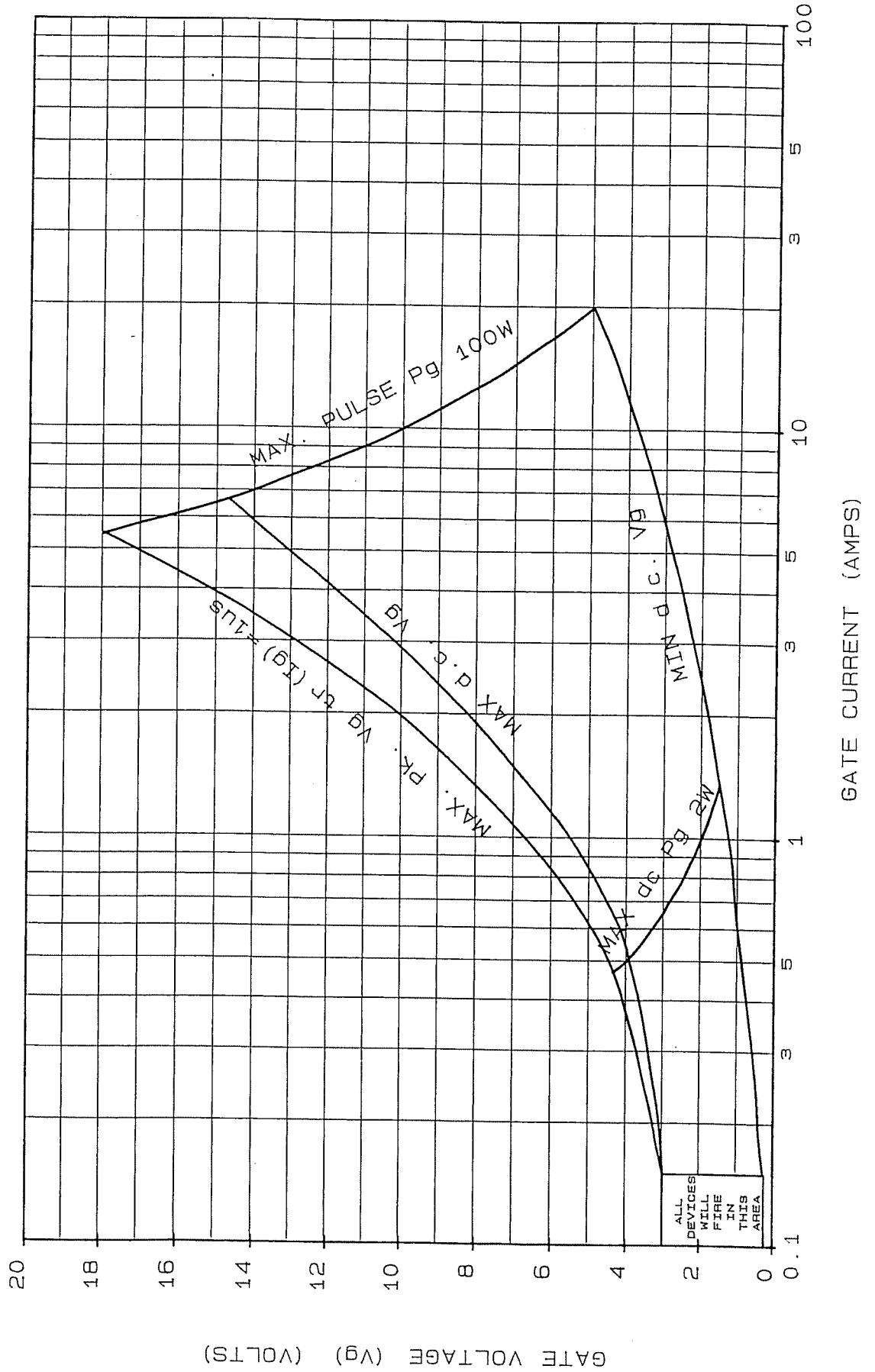


JUNCTION TO CASE THERMAL IMPEDANCE

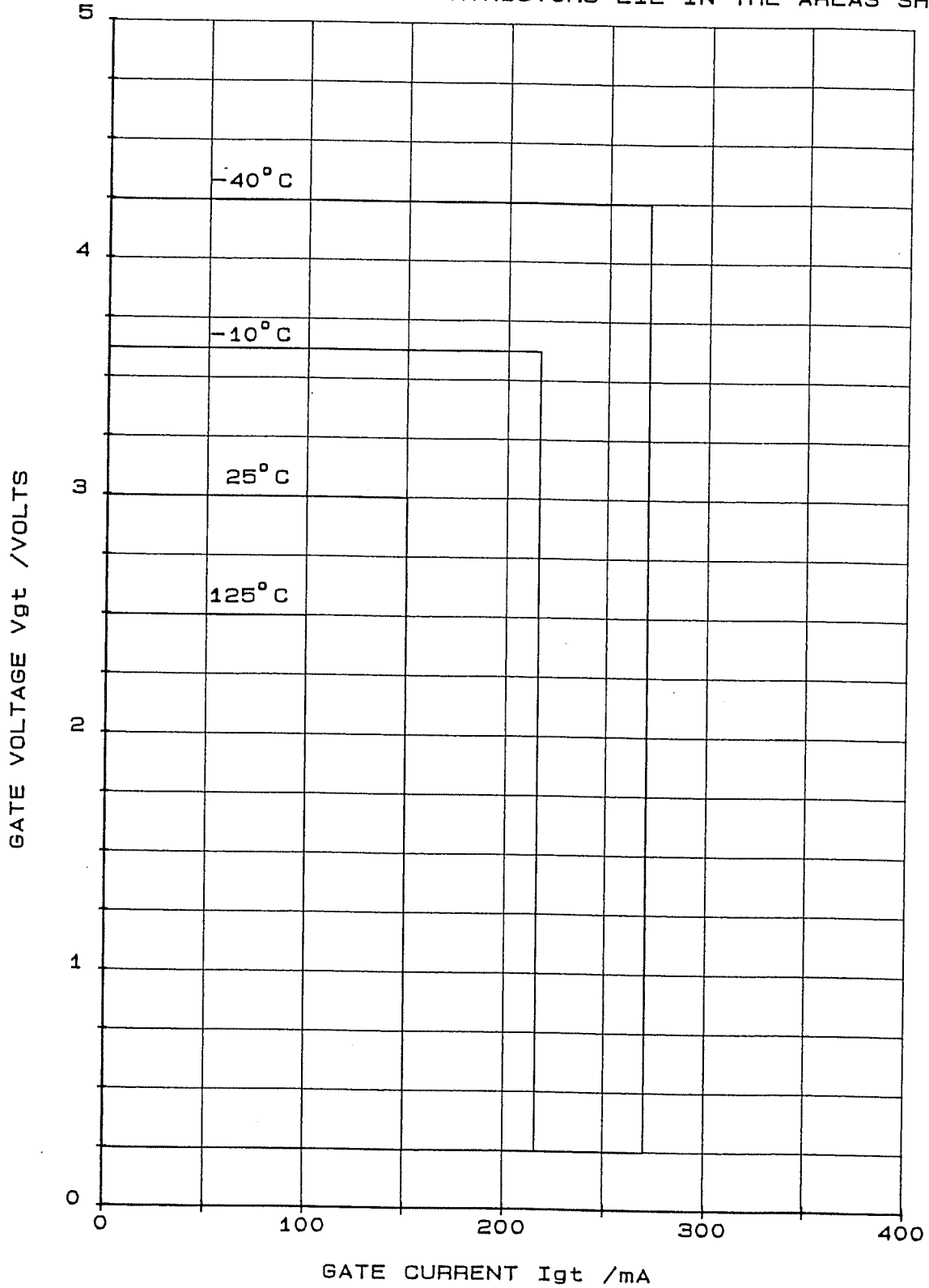


0.120
°C/W

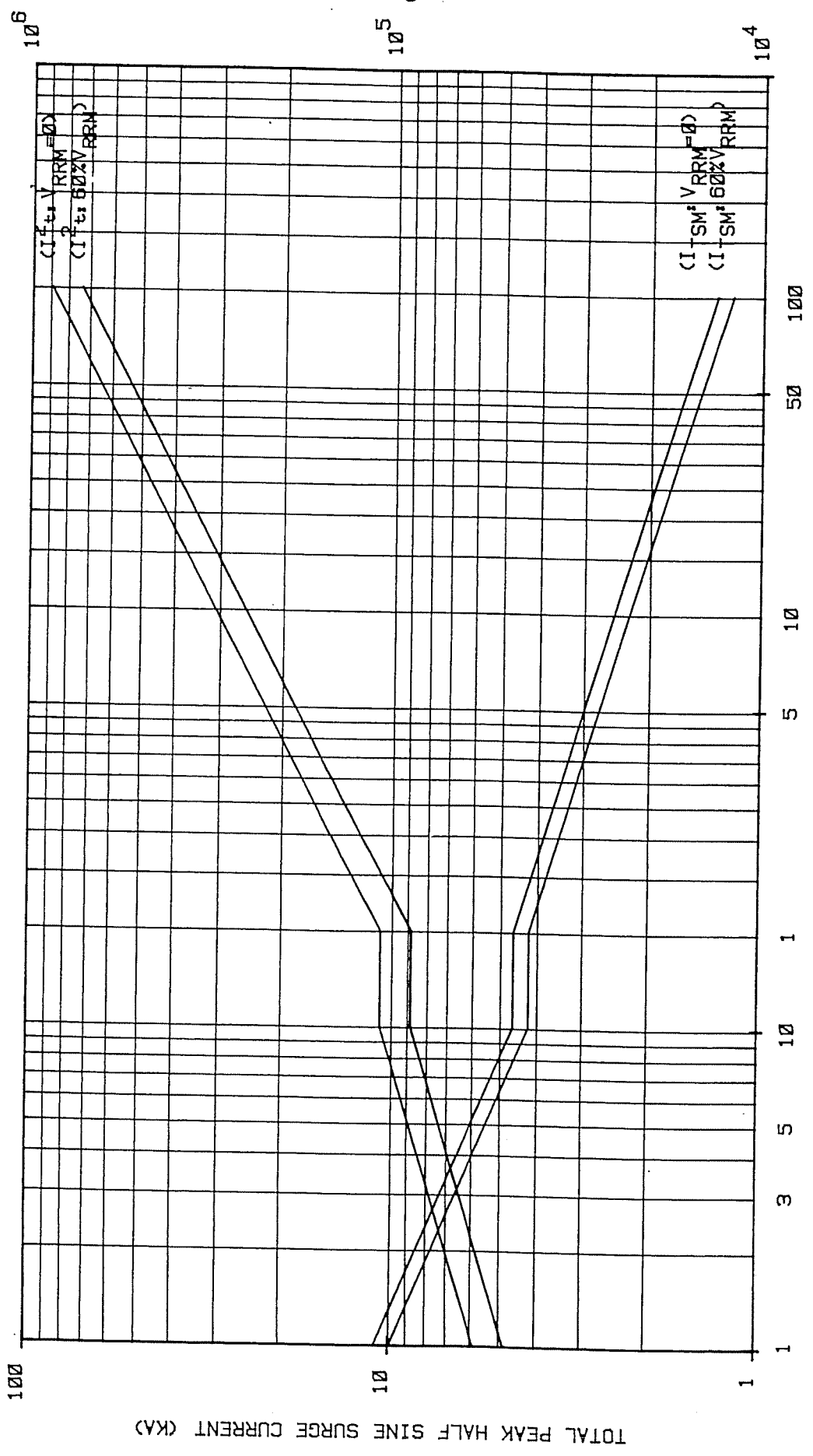
GATE CHARACTERISTICS AT 25°C JUNCTION TEMPERATURE



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]



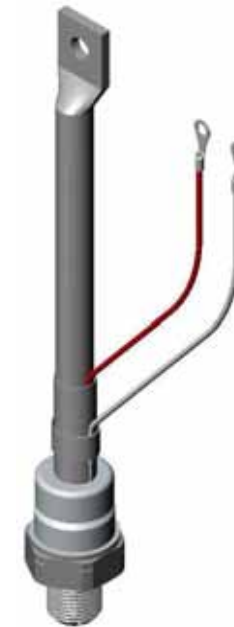
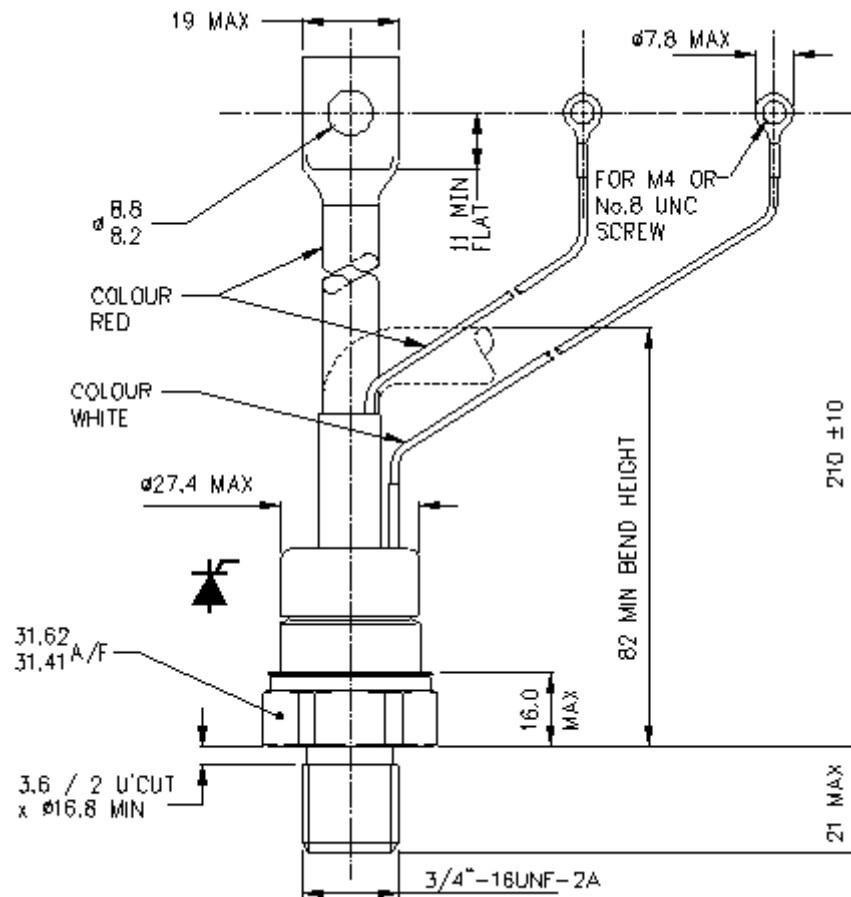
DURATION OF SURGE (me) | DURATION OF SURGE (cycles at 50 Hz)

TOTAL PEAK HALF SINE SURGE CURRENT (KA)

MAXIMUM I²t (AMPS² SECS)

Drawing Number – W18
Outline Number – 101A225

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Weight 280g