

Provisional Data

Anode Shorted Gate Turn-Off Thyristor Types G2000HF250

Absolute Maximum Ratings

	VOLTAGE RATINGS	MAXIMUM LIMITS	UNITS
V_{DRM}	Repetitive peak off-state voltage, (note 1)	2500	V
V_{RSM}	Non-repetitive peak off-state voltage, (note 1)	2500	V
$V_{DC-link}$	Maximum continuous DC-link voltage	1250	V
V_{RRM}	Repetitive peak reverse voltage	18	V
V_{RSM}	Non-repetitive peak reverse voltage	18	V

	RATINGS	MAXIMUM LIMITS	UNITS
I_{TGQ}	Peak turn-off current, (note 2)	2000	A
L_s	Snubber loop inductance, $I_{TM}=I_{TGQ}$, (note 2)	200	nH
$I_{T(AV)M}$	Mean on-state current, $T_{sink}=55^{\circ}C$ (note 3)	1030	A
$I_{T(RMS)}$	Nominal RMS on-state current, $25^{\circ}C$ (note 3)	2050	A
I_{TSM}	Peak non-repetitive surge current $t_p=10ms$, (Note 4)	16	kA
I_{TSM2}	Peak non-repetitive surge current $t_p=2ms$, (Note 4)	28	kA
I^2t	I^2t capacity for fusing $t_p=10ms$	1.28×10^6	A^2s
di/dt_{cr}	Critical rate of rise of on-state current, (note 5)	500	$A/\mu s$
P_{FGM}	Peak forward gate power	120	W
P_{RGM}	Peak reverse gate power	12	kW
I_{FGM}	Peak forward gate current	60	A
V_{RGM}	Peak reverse gate voltage (note 6).	18	V
$T_{j op}$	Operating temperature range	-40 to +125	$^{\circ}C$
T_{stg}	Storage temperature range	-40 to +125	$^{\circ}C$

Notes:-

- 1) $V_{GK}=-2Volts$.
- 2) $T_j=125^{\circ}C$, $V_D=1250V$, $V_{DM} \leq 2500V$ $di_{GQ}/dt=30A/\mu s$, $I_{TGQ}=2500A$ and $C_S=4\mu F$.
- 3) Double-side cooled, single phase, 50Hz, 180° half-sinewave.
- 4) $T_{j(initial)}=125^{\circ}C$, single phase, 180° sinewave, re-applied voltage $V_D=V_R \leq 10V$.
- 5) $I_T=2000A$ repetitive, $I_{GM}=25A$, $di_{GM}/dt=20A/\mu s$. For $di/dt > 500A/\mu s$ please consult the factory.
- 6) May exceed this value during turn-off avalanche period.

Characteristics

	Parameter	MIN	TYP	MAX	TEST CONDITIONS	UNITS
V_{TM}	Maximum peak on-state voltage	-	-	2.8	$I_G=5A, I_T=2000A$	V
I_L	Latching current	-	40	-	$T_j=25^\circ C$	A
I_H	Holding current.	-	40	-	$T_j=25^\circ C$	A
dv/dt_{cr}	Critical rate of rise of off-state voltage	1000	-	-	$V_D=3000V, V_{GR}=-2V$	V/ μs
I_{DRM}	Peak off state current	-	-	60	Rated $V_{DRM}, V_{GR}=-2V$	mA
I_{RRM}	Peak reverse current	-	-	20	$V_{RR}=18V$	mA
I_{GKM}	Peak negative gate leakage current	-	-	20	$V_{GR}=-18V$	mA
V_{GT}	Gate trigger voltage	-	1.0	-	$T_j=-40^\circ C$	V
		-	0.8	1.0	$T_j=25^\circ C, V_D=25V, R_L=25m\Omega$	V
		-	0.6	-	$T_j=125^\circ C$	V
I_{GT}	Gate trigger current	-	8	-	$T_j=-40^\circ C$	A
		-	-	5	$T_j=25^\circ C, V_D=25V, R_L=25m\Omega$	A
		0.05	-	1	$T_j=125^\circ C$	A
t_d	Delay time	-	0.7	2	$V_D=1250V, I_{TQG}=2000A, di_T/dt=200A/\mu s, I_{GM}=30A, di_G/dt=20A/\mu s, C_S=4\mu F, R_S=5\Omega$	μs
t_{gt}	Turn-on time	-	3	5		μs
E_{on}	Turn-on energy	-	-	0.4		J
t_f	Fall time	-	1.5	-	$V_{DM}=2500V, I_{TQG}=2000A, di_{GQ}/dt=30A/\mu s, V_{GR}=-16V, C_S=4\mu F$	μs
t_s	Storage time	-	-	26		μs
t_{gq}	Turn-off time	-	-	30		μs
I_{GQM}	Peak turn-off gate current	-	600	-		A
Q_{GQ}	Turn-off gate charge	-	8	-		mC
t_{tail}	Tail time	-	8.5	-		μs
E_{off}	Turn-off energy	-	-	2.5		J
R_{thJK}	Thermal resistance junction to sink	-	-	22		Double side cooled
		-	-	48	Cathode side cooled	K/kW
		-	-	42	Anode side cooled	K/kW
F	Mounting force	21	-	26	(see note 2)	kN
W_t	Weight	-	0.8	-		kg

Notes:-

- 1) Unless otherwise indicated $T_j=125^\circ C$.
- 2) For other clamping forces, consult factory.

Curves

Figure 1 - On-state characteristics of Limit device

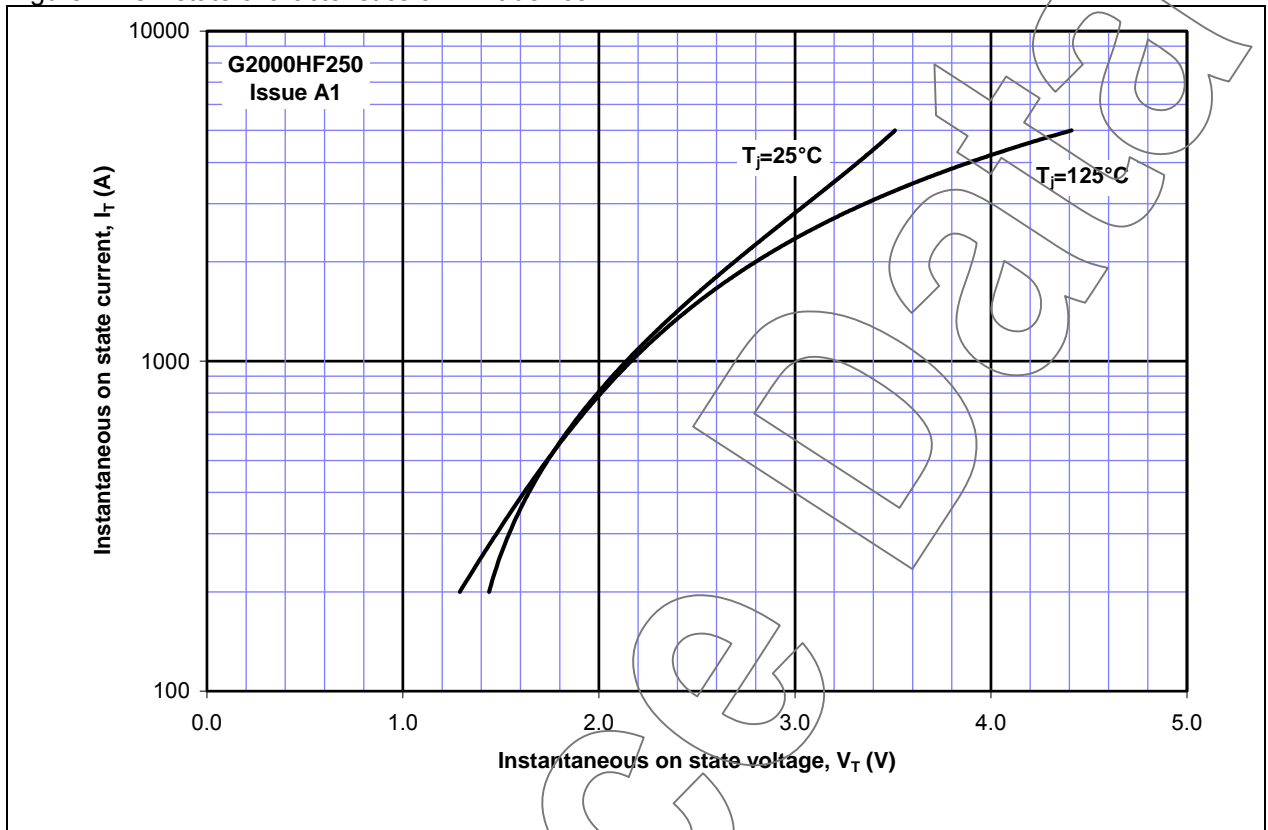
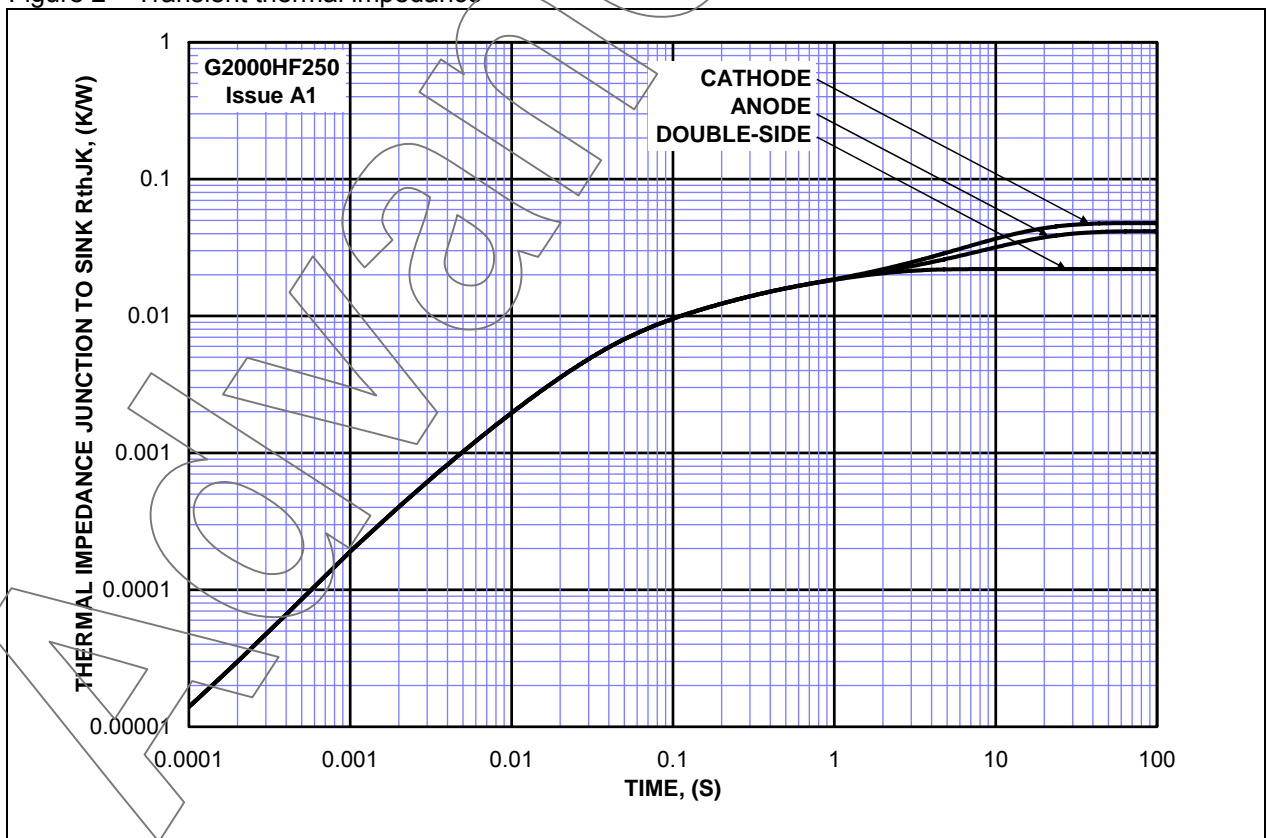
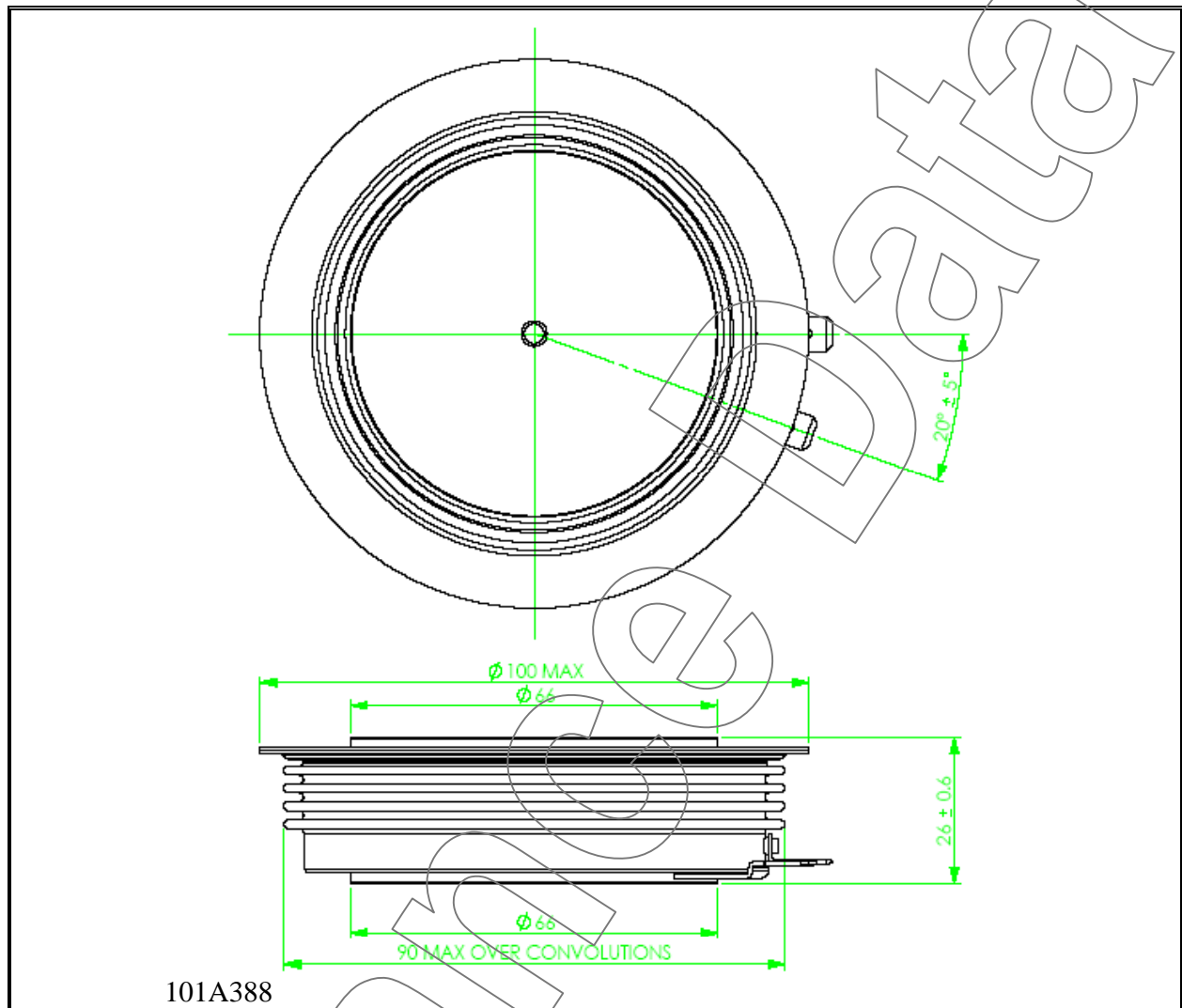


Figure 2 – Transient thermal impedance



Outline Drawing & Ordering Information



ORDERING INFORMATION (Please quote 10 digit code as below)			
G2000 Fixed Type code	HF Outline code	25 Voltage code $V_{DRM}/100$	0 Fixed code

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
1590 Buckeye Dr.
Milpitas CA 95035 -7418 USA
Tel: +1 (408) 457-9000
Fax: +1 (408) 496 0670
E-mail: sales@ixys.net

www.westcode.com

IXYS Long Beach, Inc
2500 Mira Mar Avenue
Long Beach CA 90815 USA
Tel: +1 (562) 296 6584
Fax: +1 (562) 296 6585
E-mail: service@ixyslongbeach.com

The information contained herein is confidential and is protected by Copyright. The information may not be used or disclosed except with the written permission of and in the manner permitted by the proprietors Westcode Semiconductors Ltd. © Westcode Semiconductors Ltd.

In the interest of product improvement, Westcode reserves the right to change specifications at any time without prior notice.