

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:-

- $V_{GK}=-2$ Volts.
- $T_j=125^{\circ}C$, $V_D=1250V$, $V_{DM} \leq 2500V$ $di_{GQ}/dt=30A/\mu s$, $I_{TGQ}=2500A$ and $C_S=4\mu F$.
- Double-side cooled, single phase; 50Hz, 180° half-sinewave.
- $T_{j(initial)}=125^{\circ}C$, single phase, 180° sinewave, re-applied voltage $V_D=V_R \leq 10V$.
- $I_T=2000A$ repetitive, $I_{GM}=25A$, $di_{GM}/dt=20A/\mu s$. For $di/dt > 500A/\mu s$ please consult the factory.
- 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°C	A
I _H	Holding current.	-	40	-	T _J =25°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°C	V
		-	0.8	1.0	T _J =25°C V _D =25V, R _L =25mΩ	V
		-	0.6	-	T _J =125°C	V
I _{GT}	Gate trigger current	-	8	-	T _J =-40°C	A
		-	-	5	T _J =25°C V _D =25V, R _L =25mΩ	A
		0.05	-	1	T _J =125°C	A
t _d	Delay time	-	0.7	2	V _D =1250V, I _{TGQ} =2000A, di _T /dt=200A/μs, I _{GM} =30A, di _G /dt=20A/μs, C _S =4μF, R _S =5Ω	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 _{TGQ} =2000A, di _{GQ} /dt=30A/μs, V _{GR} =-16V, C _S =4μF	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	K/kW
		-	-	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°C.
- 2) For other clamping forces, consult factory.

Curves

Figure 1 - On-state characteristics of Limit device

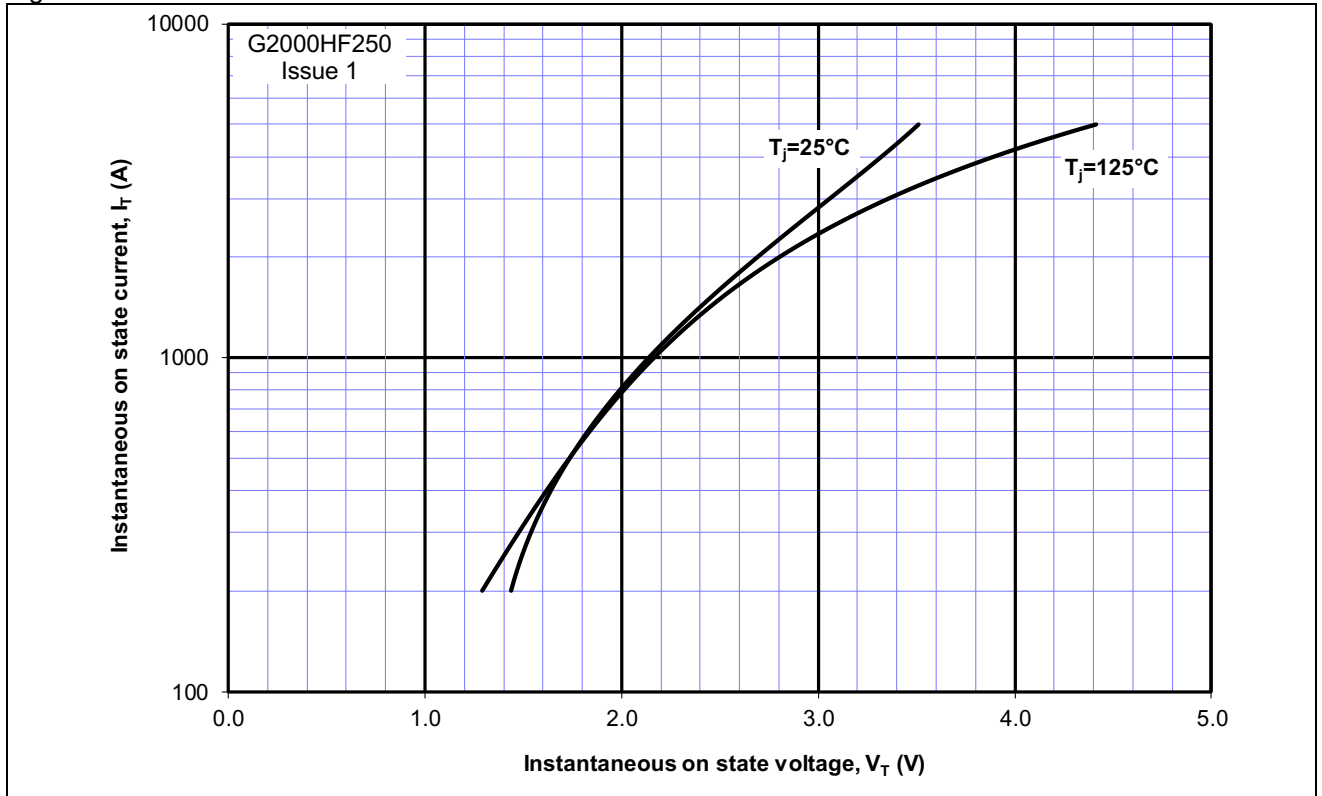
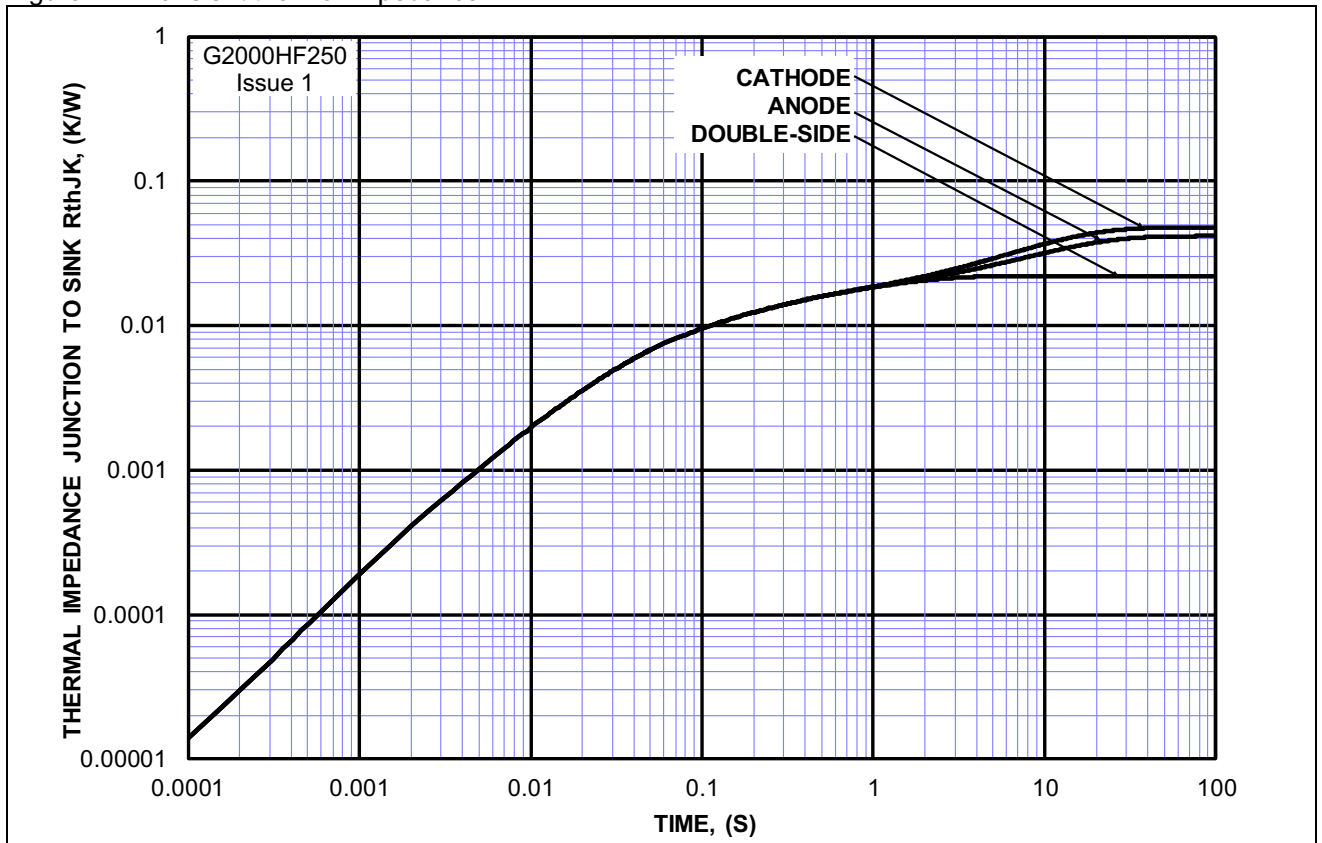
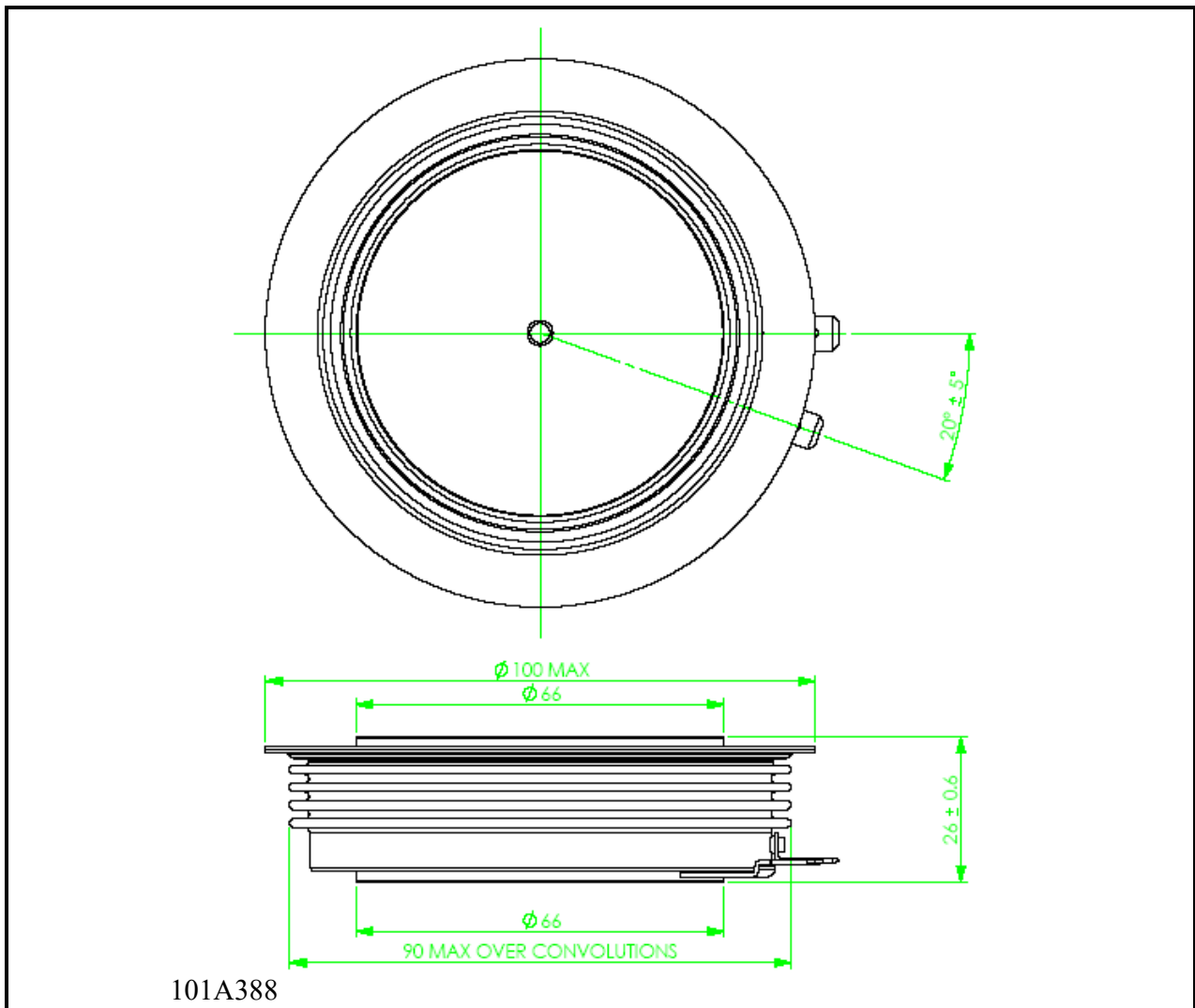


Figure 2 – Transient thermal impedance



Outline Drawing & Ordering Information


101A388

ORDERING INFORMATION

(Please quote 10-digit code as below)

G2000	HF	25	0
Fixed Type code	Outline code	Voltage code $V_{DRM}/100$	Fixed code

Order code - G2000HF250

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



Westcode Semiconductors Ltd
 Langley Park Way, Langley Park,
 Chippenham, Wiltshire, SN15 1GE.
 Tel: +44 (0)1249 444524
 E-mail: sales@ixysuk.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
www.ixys.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

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