

Phase Control Thyristor

Types N0465WN140 to N0465WN160

Absolute Maximum Ratings

	VOLTAGE RATINGS	MAXIMUM LIMITS	UNITS
V_{DRM}	Repetitive peak off-state voltage, (note 1)	1400-1600	V
V_{DSM}	Non-repetitive peak off-state voltage, (note 1)	1500-1700	V
V_{RRM}	Repetitive peak reverse voltage, (note 1)	1400-1600	V
V_{RSM}	Non-repetitive peak reverse voltage, (note 1)	1500-1700	V

	OTHER RATINGS	MAXIMUM LIMITS	UNITS
$I_{T(AV)M}$	Maximum average on-state current, $T_{sink}=55^{\circ}C$, (note 2)	465	A
$I_{T(AV)M}$	Maximum average on-state current. $T_{sink}=85^{\circ}C$, (note 2)	315	A
$I_{T(AV)M}$	Maximum average on-state current. $T_{sink}=85^{\circ}C$, (note 3)	180	A
$I_{T(RMS)M}$	Nominal RMS on-state current, $T_{sink}=25^{\circ}C$, (note 2)	920	A
$I_{T(d.c.)}$	D.C. on-state current, $T_{sink}=25^{\circ}C$, (note 4)	790	A
I_{TSM}	Peak non-repetitive surge $t_p=10ms$, $V_{rm}=60\%V_{RRM}$, (note 5)	4500	A
I_{TSM2}	Peak non-repetitive surge $t_p=10ms$, $V_{rm}\leq 10V$, (note 5)	5000	A
I^2t	I^2t capacity for fusing $t_p=10ms$, $V_{rm}=60\%V_{RRM}$, (note 5)	101×10^3	A^2s
I^2t	I^2t capacity for fusing $t_p=10ms$, $V_{rm}\leq 10V$, (note 5)	125×10^3	A^2s
$(di/dt)_{cr}$	Critical rate of rise of on-state current (note 6)	(continuous, 50Hz)	75
		(repetitive, 50Hz, 60s)	125
		(non-repetitive)	250
V_{RGM}	Peak reverse gate voltage	5	V
$P_{G(AV)}$	Mean forward gate power	3	W
P_{GM}	Peak forward gate power	30	W
$T_{j op}$	Operating temperature range	-60 to +125	$^{\circ}C$
T_{stg}	Storage temperature range	-60 to +125	$^{\circ}C$

Notes:-

- 1) De-rating factor of 0.13% per $^{\circ}C$ is applicable for T_j below $25^{\circ}C$.
- 2) Double side cooled, single phase; 50Hz, 180° half-sinewave.
- 3) Anode side cooled, single phase; 50Hz, 180° half-sinewave.
- 4) Double side cooled.
- 5) Half-sinewave, $125^{\circ}C$ T_j initial.
- 6) $V_D=67\% V_{DRM}$, $I_{TM}=600A$, $I_{FG}=2A$, $t_r\leq 0.5\mu s$, $T_{case}=125^{\circ}C$.

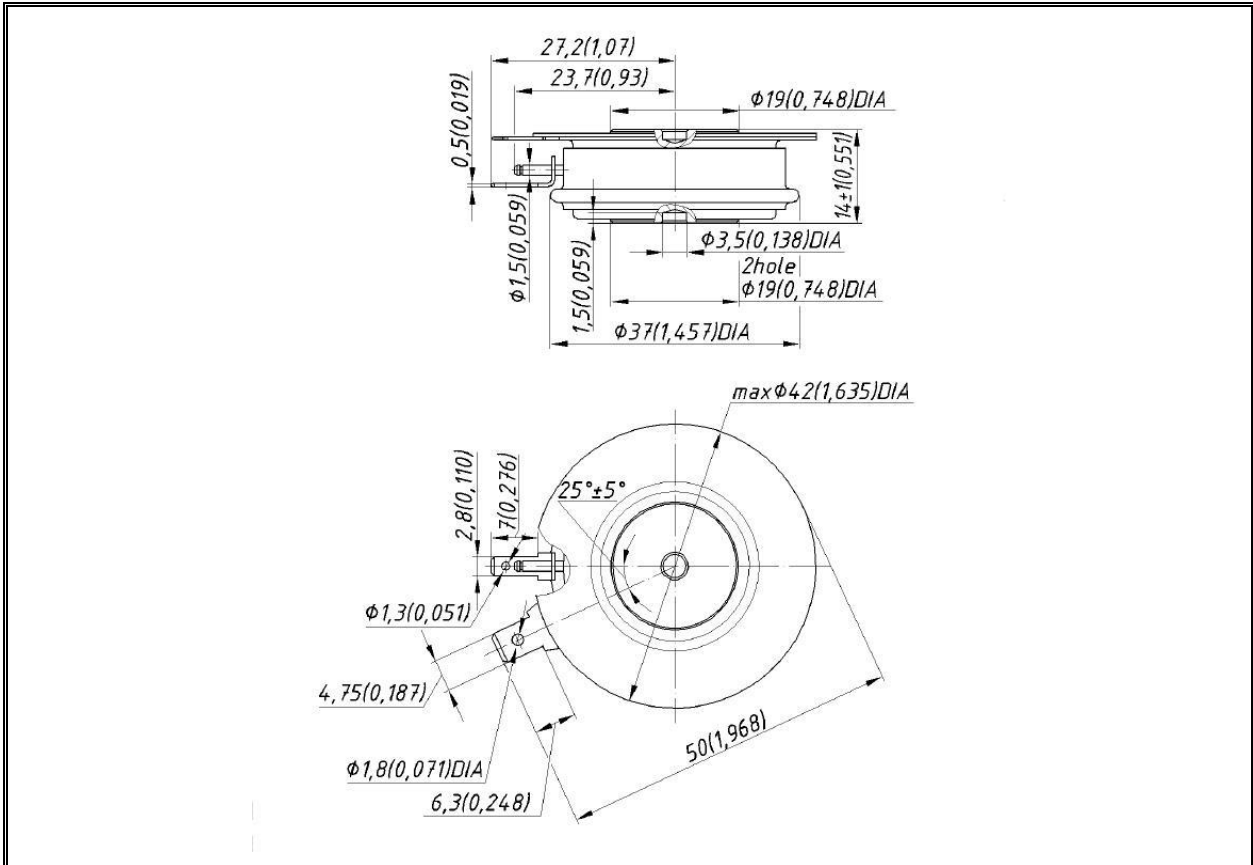
Characteristics

	PARAMETER	MIN.	TYP.	MAX.	TEST CONDITIONS (Note 1)	UNITS
V_{TM}	Maximum peak on-state voltage	-	-	1.30	$I_{TM}=465A$	V
V_{T0}	Threshold voltage	-	-	0.90		V
r_T	Slope resistance	-	-	0.85		$m\Omega$
$(dv/dt)_{cr}$	Critical rate of rise of off-state voltage	1000	-	-	$V_D=67\% V_{DRM}$, linear ramp, gate o/c	$V/\mu s$
I_{DRM}	Peak off-state current	-	-	50	Rated V_{DRM}	mA
I_{RRM}	Peak reverse current	-	-	50	Rated V_{RRM}	mA
V_{GT}	Gate trigger voltage	-	-	2.50	$T_j=25^\circ C$ $V_D=10V$, $I_T=3A$	V
I_{GT}	Gate trigger current	-	-	250		mA
V_{GD}	Gate non-trigger voltage	-	-	0.25	Rated V_{DRM}	V
I_H	Holding current	-	-	250	$T_j=25^\circ C$	mA
t_{gd}	Gate-controlled turn-on delay time	-	-	2.0	$V_D=67\% V_{DRM}$, $I_T=300A$, $di/dt=10A/\mu s$, $I_{FG}=2A$, $t_r=0.5\mu s$, $T_j=25^\circ C$	μs
t_q	Turn-off time	-	-	125	$I_{TM}=300A$, $t_p=500\mu s$, $di/dt=10A/\mu s$, $V_r=100V$, $V_{dr}=67\%V_{DRM}$, $dV_{dr}/dt=50V/\mu s$	μs
R_{thJK}	Thermal resistance, junction to heatsink	-	-	0.080	Double side cooled	K/W
		-	-	0.174	Anode side cooled	K/W
		-	-	0.146	Cathode side cooled	K/W
F	Mounting force	5	-	7	Note 2.	kN
W_t	Weight	-	70	-		g

Notes:-

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

Outline Drawing & Ordering Information



ORDERING INFORMATION

(Please quote 10 digit code as below)

N0465	WN	◆◆	0
Fixed Type Code	Fixed outline code	Voltage code $V_{DRM}/100$ 14-16	Fixed turn-off time code

Order code: N0465WN160 – 1600V V_{DRM} , V_{RRM} , 14mm clamp height capsule.

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



IXYS UK Westcode Ltd
Langley Park Way, Langley Park,
Chippenham, Wiltshire, SN15 1GE.
Tel: +44 (0)1249 444524
Fax: +44 (0)1249 659448
E-mail: sales@ixysuk.com

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

www.ixysuk.com

www.ixys.com

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

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