



**Key Parameters**

$V_{DRM} / V_{RRM}$	= 4500V
$I_{T(AV)}$	= 1650A
$I_{TSM}$	= 41kA
$V_{T(TO)}$	= 1.033V
$r_T$	= 0.358mΩ

**Features**

- Full blocking capability over wide temperature range
- High Surge current capability
- Hermetic metal case with ceramic insulator

**Applications**

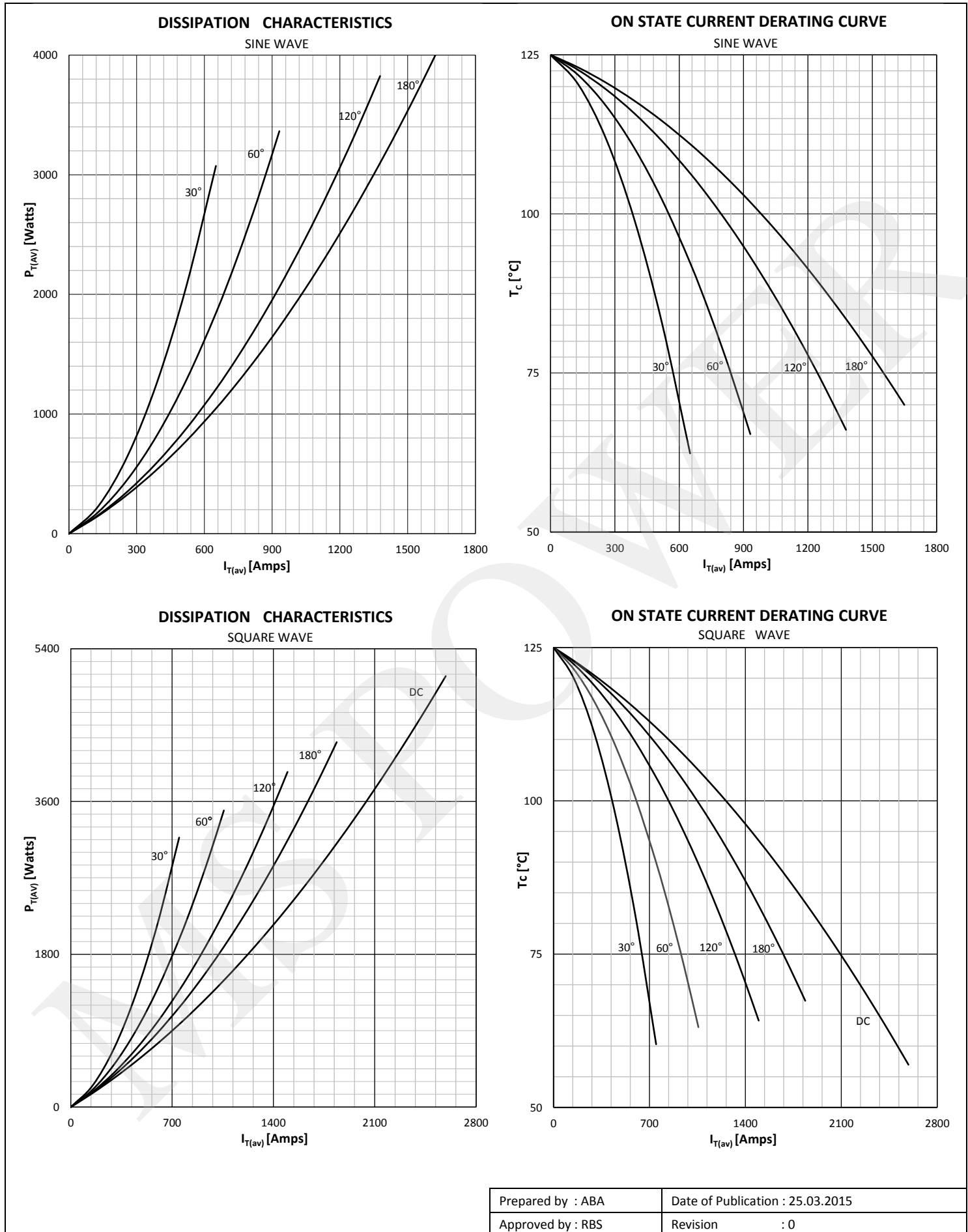
- Battery Chargers
- Medical Equipment
- UPS
- Power Supplies
- Motor control
- Controlled Rectifiers
- Transportation
- Induction Heating
- Welding

**Ordering Information**

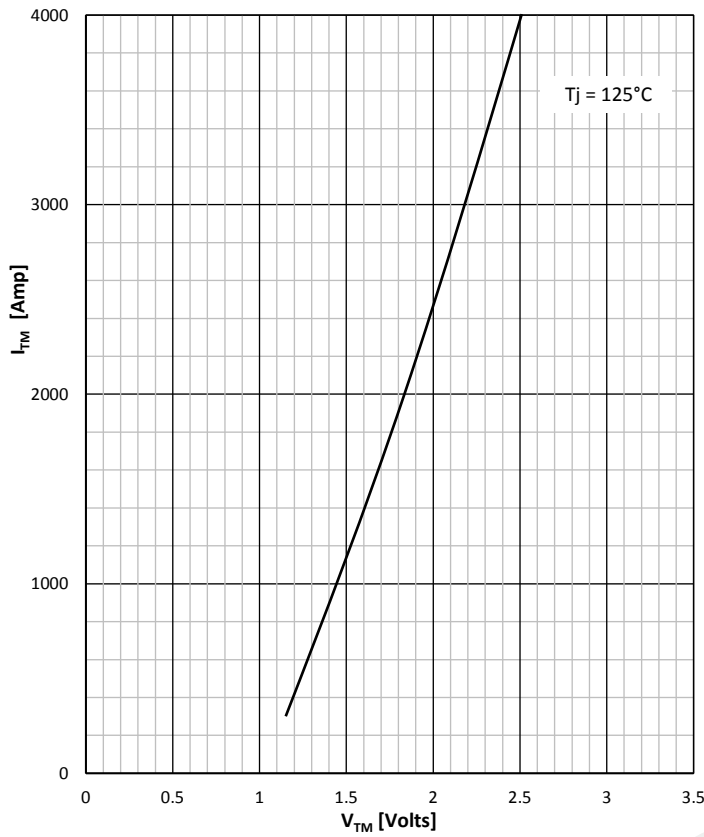
MS T	1651	C	XX
Phase Control Thyristor	Current Code	C - Capsule package with Alloyed silicon technology	Voltage Code Code X 100 = $V_{DRM}/V_{RRM}$
Order Code MS T1651C45 : 4500V $V_{DRM}, V_{RRM}$ , 37mm clamp height capsule thyristor			

Prepared by : ABA	Date of Publication : 25.03.2015
Approved by : RBS	Revision : 0

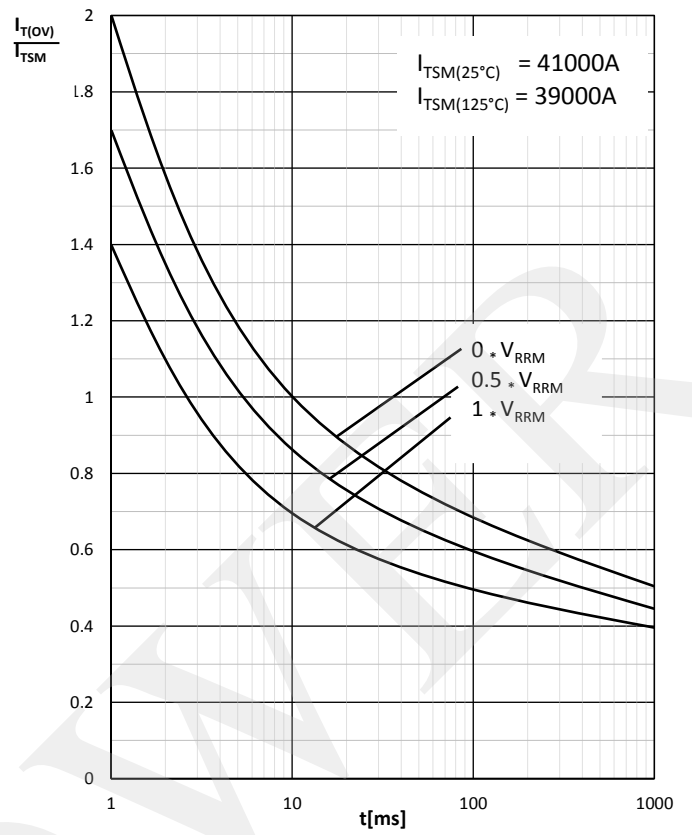
Symbol	Characteristic	Conditions	T <sub>j</sub> [°C]	Value	Unit
<b>BLOCKING</b>					
V <sub>RRM</sub>	Repetitive peak reverse voltage		125	3600 - 4500	V
V <sub>RSM</sub>	Non-repetitive peak reverse voltage		125	3700 - 4600	V
V <sub>DRM</sub>	Repetitive peak off-state voltage		125	3600 - 4500	V
I <sub>RRM</sub>	Repetitive peak reverse current	V = V <sub>RRM</sub>	125	200	mA
I <sub>DRM</sub>	Repetitive peak off-state current	V = V <sub>DRM</sub>	125	200	mA
<b>CONDUCTING</b>					
I <sub>T(AV)</sub>	Mean on state current	180° sin ,50 Hz, T <sub>c</sub> =70°C, Double side cooled		1650	A
I <sub>RMS</sub>	RMS on-state current	T <sub>c</sub> =70°C, Double side cooled		2590	A
I <sub>TSM</sub>	Surge on-state current	Sine wave, 10 ms Without reverse voltage	25	41000	A
			125	39000	A
I <sup>2</sup> t	I <sup>2</sup> t	Sine wave, 10 ms Without reverse voltage	25	8405 x 10 <sup>3</sup>	A <sup>2</sup> s
			125	7605 x 10 <sup>3</sup>	A <sup>2</sup> s
V <sub>T</sub>	On-state voltage	On-state current = 2000A	125	1.85	V
V <sub>T(TO)</sub>	Threshold voltage		125	1.033	V
r <sub>T</sub>	On-state slope resistance		125	0.358	mΩ
<b>SWITCHING</b>					
di/dt	Critical rate of rise of on-state current		125	150	A/μs
dv/dt	Critical rate of rise of off-state voltage	V <sub>DR</sub> = 67%V <sub>DRM</sub>	125	1000	V/μs
<b>GATE</b>					
I <sub>gt</sub>	Gate trigger current	V <sub>D</sub> =6V	25	250	mA
V <sub>gt</sub>	Gate trigger voltage	V <sub>D</sub> =6V	25	3.0	V
I <sub>H</sub>	Holding current	V <sub>D</sub> =6V, gate open circuit	25	800	mA
I <sub>L</sub>	Latching current	V <sub>D</sub> =6V	25	1000	mA
<b>MOUNTING</b>					
R <sub>th(j-c)</sub>	Thermal impedance, sin 180°	Junction to case, Double side cooled		0.012	°C/W
R <sub>th(j-c)</sub>	Thermal impedance, rec120°	Junction to case, Double side cooled		0.014	°C/W
R <sub>th(c-h)</sub>	Thermal impedance	Case to heatsink, Double side cooled		0.002	°C/W
T <sub>j</sub>	Max. junction temperature			125	°C
T <sub>stg</sub>	Storage temperature			-40 .... 125	°C
M	Clamping Force			27 - 45	kN
W	Weight (Approx.)			1600	gm
			Prepared by : ABA	Date of Publication : 25.03.2015	
			Approved by : RBS	Revision : 0	



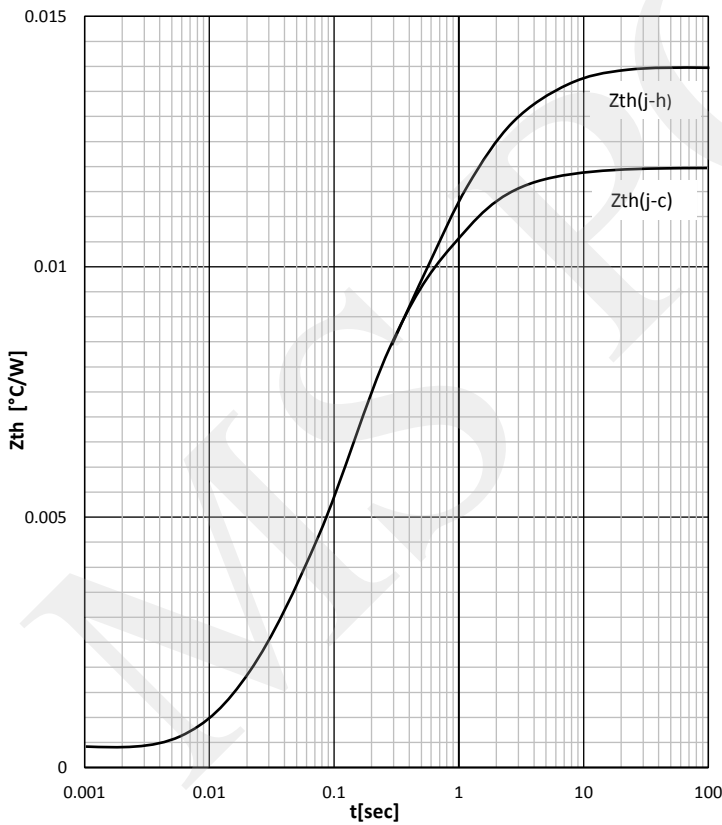
ON STATE CHARACTERISTIC



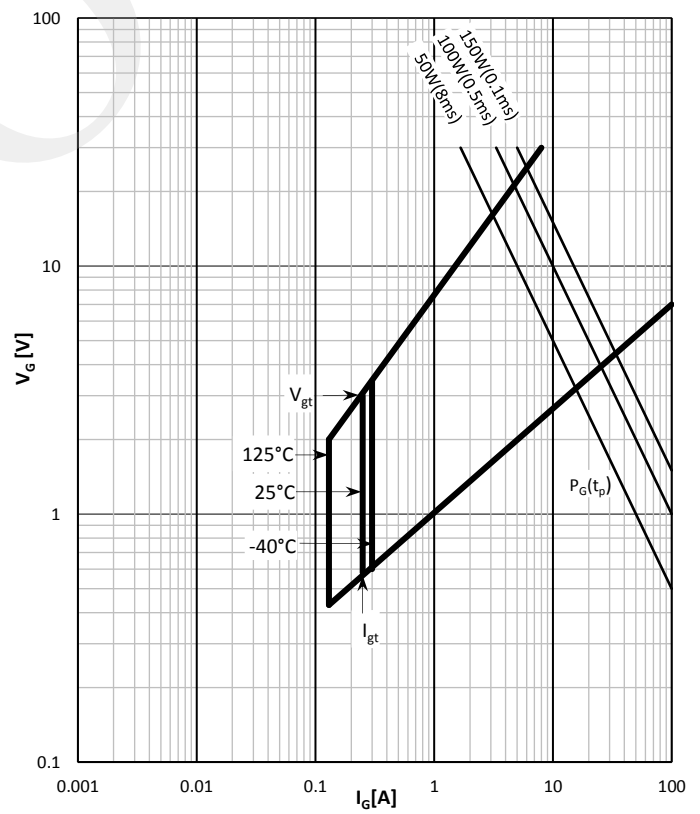
SURGE CHARACTERISTICS



TRANSIENT THERMAL IMPEDANCE



GATE TRIGGER CHARACTERISTICS



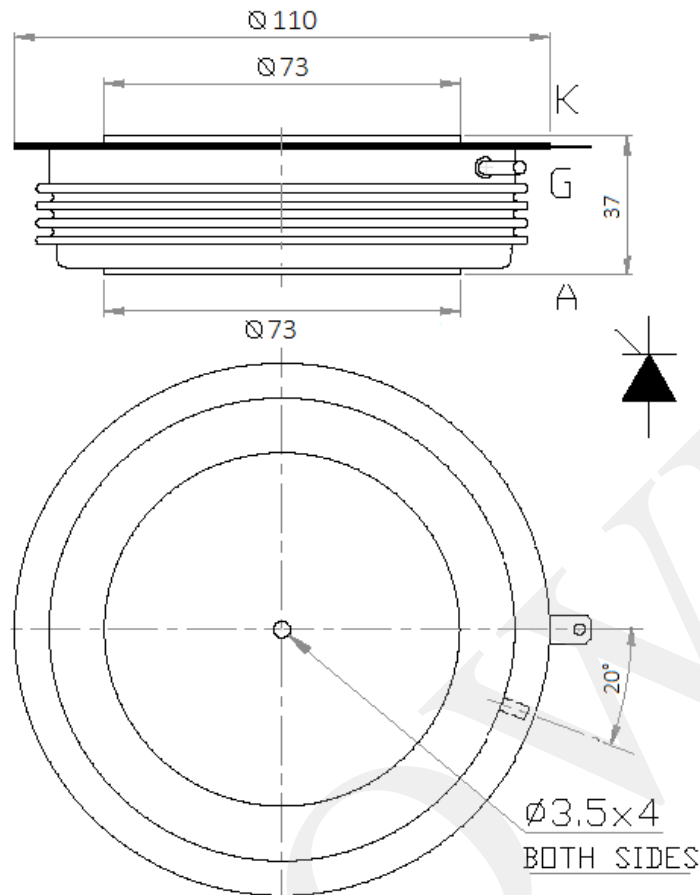
Prepared by : ABA

Date of Publication : 25.03.2015

Approved by : RBS

Revision : 0

Outline



**MS Power GmbH**

Mergenthalerallee 79-81  
65760 Eschborn, Germany  
Web: [www.mspowergroup.com](http://www.mspowergroup.com)  
Mail: [info@mspowergroup.de](mailto:info@mspowergroup.de)

**Sales & Enquiry:**

[sales@mspowergroup.de](mailto:sales@mspowergroup.de)

**Technical Support:**

[solution@mspowergroup.de](mailto:solution@mspowergroup.de)

**After sales Service:**

[service@mspowergroup.de](mailto:service@mspowergroup.de)

Phone: +49 (0) 6196/7768 666

Fax: +49 (0) 6196/7757 888



Prepared by : ABA

Date of Publication : 25.03.2015

Approved by : RBS

Revision : 0

**Terms & Conditions of usage :**

The data contained in this product datasheet is exclusively Intended for technically trained staff. You and your technical departments will have to evaluate the suitability of the product for the intended application and the completeness of the product data with respect to such application. This product datasheet is describing the characteristics of this product for which a warranty is granted. Any such warranty is granted exclusively pursuant the terms and conditions of the supply agreement. There will be no guarantee of any kind for the product and its characteristics. The information in the valid application-and assembly notes of the device must be considered.

Should you require product information in excess of the data given in this product datasheet or which concerns the specific application of our product, please contact the sales office, which is responsible for you (see [www.mspowergroup.com](http://www.mspowergroup.com)). For those that are specifically interested we may provide application notes.

Due to technical requirements our product may contain dangerous substances. For information on the types in question please contact the sales office, which is responsible for you.

Should you intend to use the Product in aviation applications, in health or live endangering or life support applications, please notify. Please note, that for any such applications we urgently recommend

- to perform joint Risk and Quality Assessments;
- the conclusion of Quality Agreements;
- to establish joint measures of an ongoing product survey, and that we may make delivery depended on the realization of any such measures.

If and to the extent necessary, please forward equivalent notices to your customers.

Changes of this product datasheet are reserved.

Prepared by : ABA	Date of Publication : 25.03.2015
Approved by : RBS	Revision : 0