

### Key Parameters

$V_{DRM} / V_{RRM}$	= 6500V
$I_{T(AV)}$	= 356A
$I_{TSM}$	= 7.5kA
$V_{T(TO)}$	= 1.3V
$r_T$	= 1.9mΩ

### Features

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

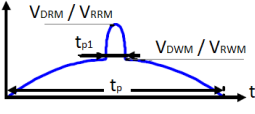
### Applications

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

### Ordering Information

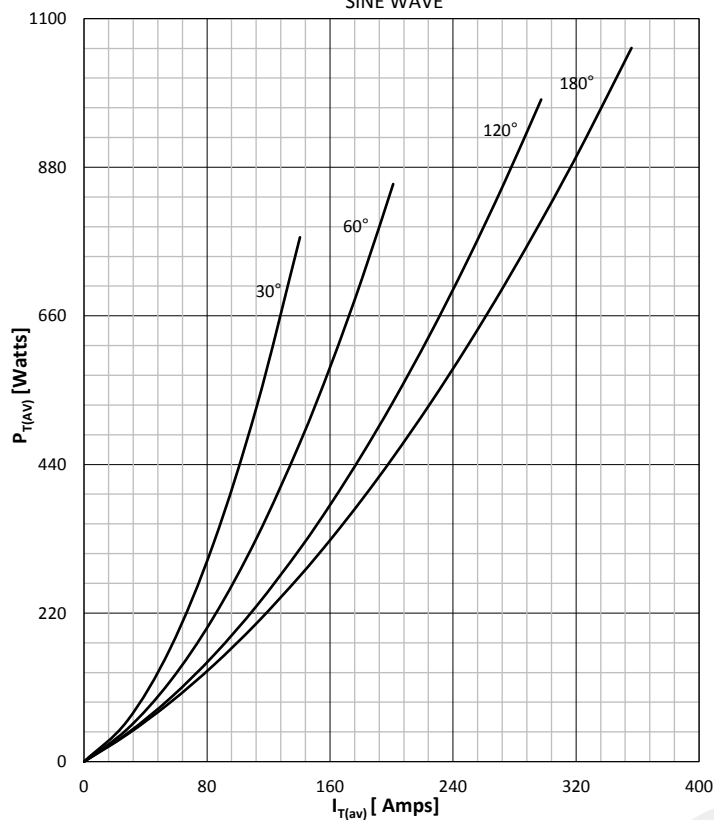
MS TB	356	CZ	X X
Bi-Directional Control Thyristor	Current Code	CZ - Capsule package with Free floating silicon Technology	Voltage Code Code X 100 = $V_{DRM}/V_{RRM}$
Order Code MS TB356CZ65 : 6500V $V_{DRM}, V_{RRM}$ , 35mm clamp height capsule thyristor			

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Symbol	Characteristic	Conditions	T <sub>j</sub> [°C]	Value	Unit
<b>BLOCKING</b>					
V <sub>DSM</sub>	Maximum surge peak off-state voltage	f= 5Hz, t <sub>p</sub> =10msec	125	6500	V
V <sub>RSM</sub>	Maximum surge peak reverse voltage		125	6500	V
V <sub>DRM</sub>	Maximum repetitive peak off-state voltage	f= 50Hz, t <sub>p</sub> =10msec, t <sub>p1</sub> = 250μs 	125	6500	V
V <sub>RRM</sub>	Maximum repetitive peak reverse voltage		125	6500	V
V <sub>DWM</sub>	Maximum crest working forward voltage		125	5600	V
V <sub>RWM</sub>	Maximum crest working reverse voltage		125	5600	V
I <sub>RRM</sub>	Repetitive peak reverse current	V= V <sub>RRM</sub>	125	100	mA
I <sub>DRM</sub>	Repetitive peak off-state current	V= V <sub>DRM</sub>	125	100	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		356	A
I <sub>RMS</sub>	RMS on-state current	T <sub>c</sub> =70°C, Double side cooled		559	A
I <sub>TSM</sub>	Surge on-state current	Sine wave, 10 ms Without reverse voltage	25	7500	A
			125	6700	A
I <sup>2</sup> t	I <sup>2</sup> t	Sine wave, 10 ms Without reverse voltage	25	281250	A <sup>2</sup> s
			125	224450	A <sup>2</sup> s
V <sub>T</sub>	On-state voltage	On-state current = 500A	125	2.25	V
V <sub>T(TO)</sub>	Threshold voltage		125	1.3	V
r <sub>T</sub>	On-state slope resistance		125	1.9	mΩ
<b>SWITCHING</b>					
di/dt	Critical rate of rise of on-state current	V <sub>D</sub> ≤ 67%V <sub>DRM</sub> , f=50Hz, I <sub>TRM</sub> ≤900A, I <sub>FG</sub> =2.0A, t <sub>r</sub> =0.5μs	90	100	A/μs
dv/dt	Critical rate of rise of off-state voltage	V <sub>DR</sub> = 67%V <sub>DRM</sub>	125	2000	V/μs
<b>GATE</b>					
I <sub>gt</sub>	Gate trigger current	V <sub>D</sub> =6V	25	300	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	150	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		0.052	°C/W
R <sub>th(j-c)</sub>	Thermal impedance, rec120°	Junction to case, Double side cooled		0.059	°C/W
R <sub>th(c-h)</sub>	Thermal impedance	Case to heatsink, Double side cooled		0.008	°C/W
T <sub>j</sub>	Max. junction temperature			125	°C
T <sub>stg</sub>	Storage temperature			-40 .... 150	°C
M	Clamping Force			22 -24	kN
W	Weight (Approx.)			500	gm
Note : The electrical and thermal data are valid for one -thyristor-half of device					
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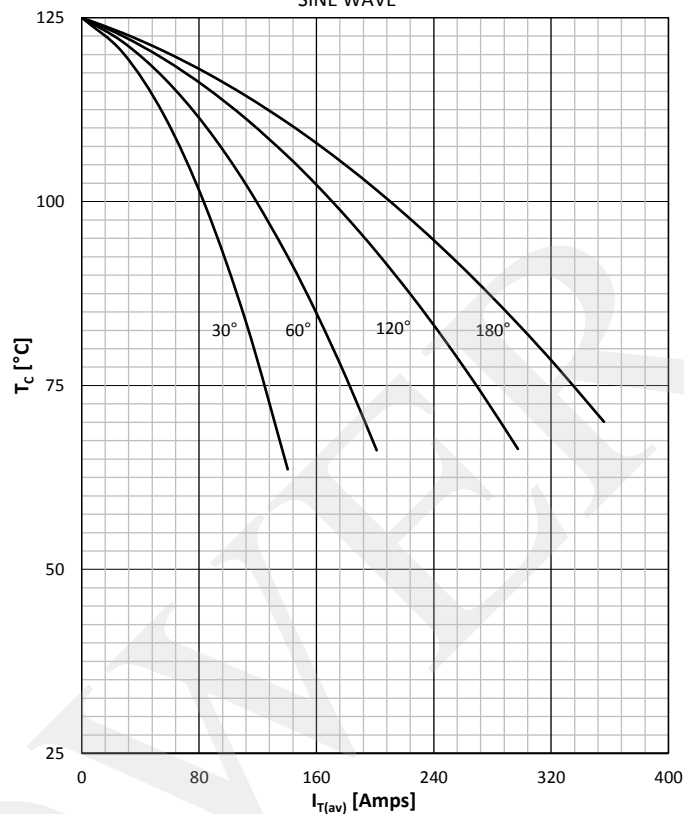
DISSIPATION CHARACTERISTICS

SINE WAVE



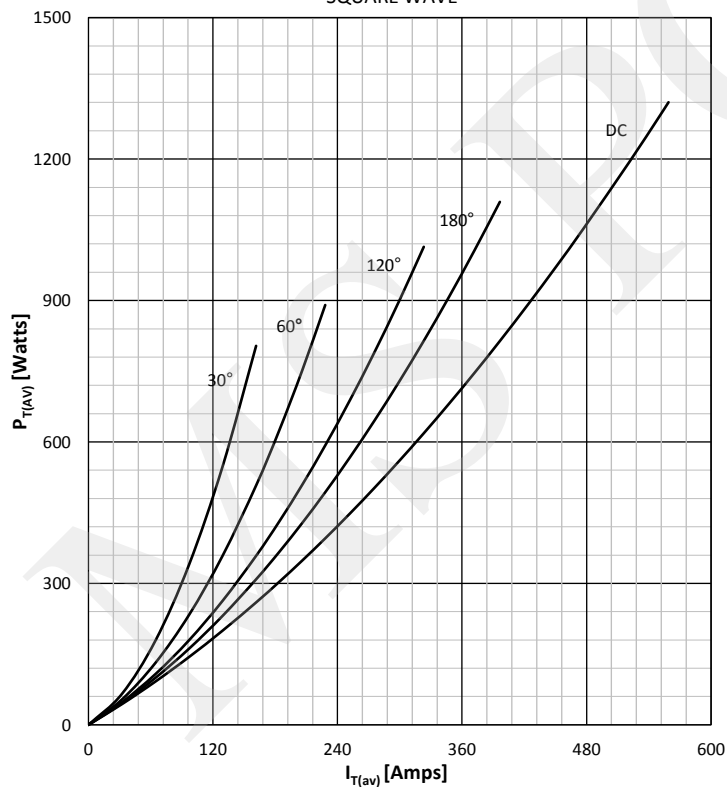
ON STATE CURRENT DERATING CURVE

SINE WAVE



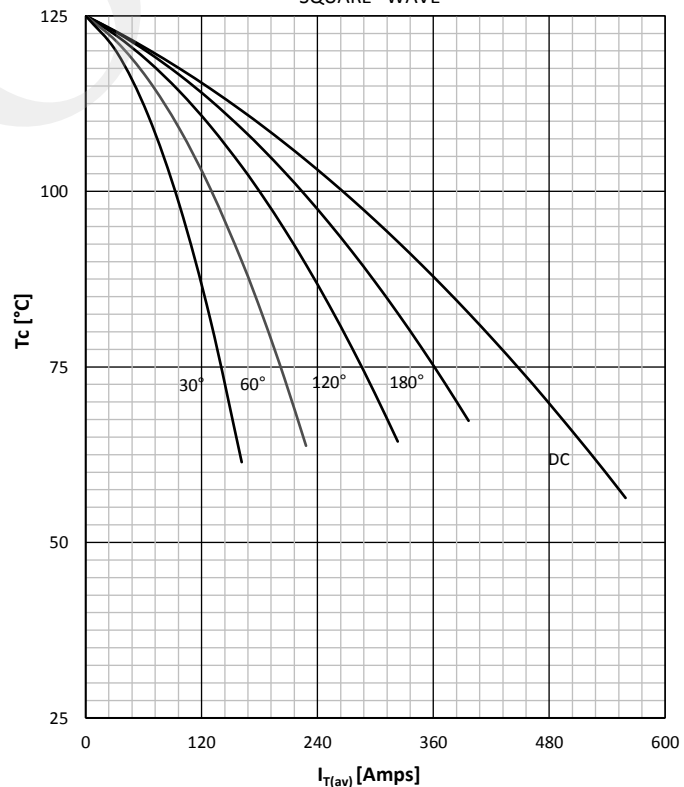
DISSIPATION CHARACTERISTICS

SQUARE WAVE



ON STATE CURRENT DERATING CURVE

SQUARE WAVE

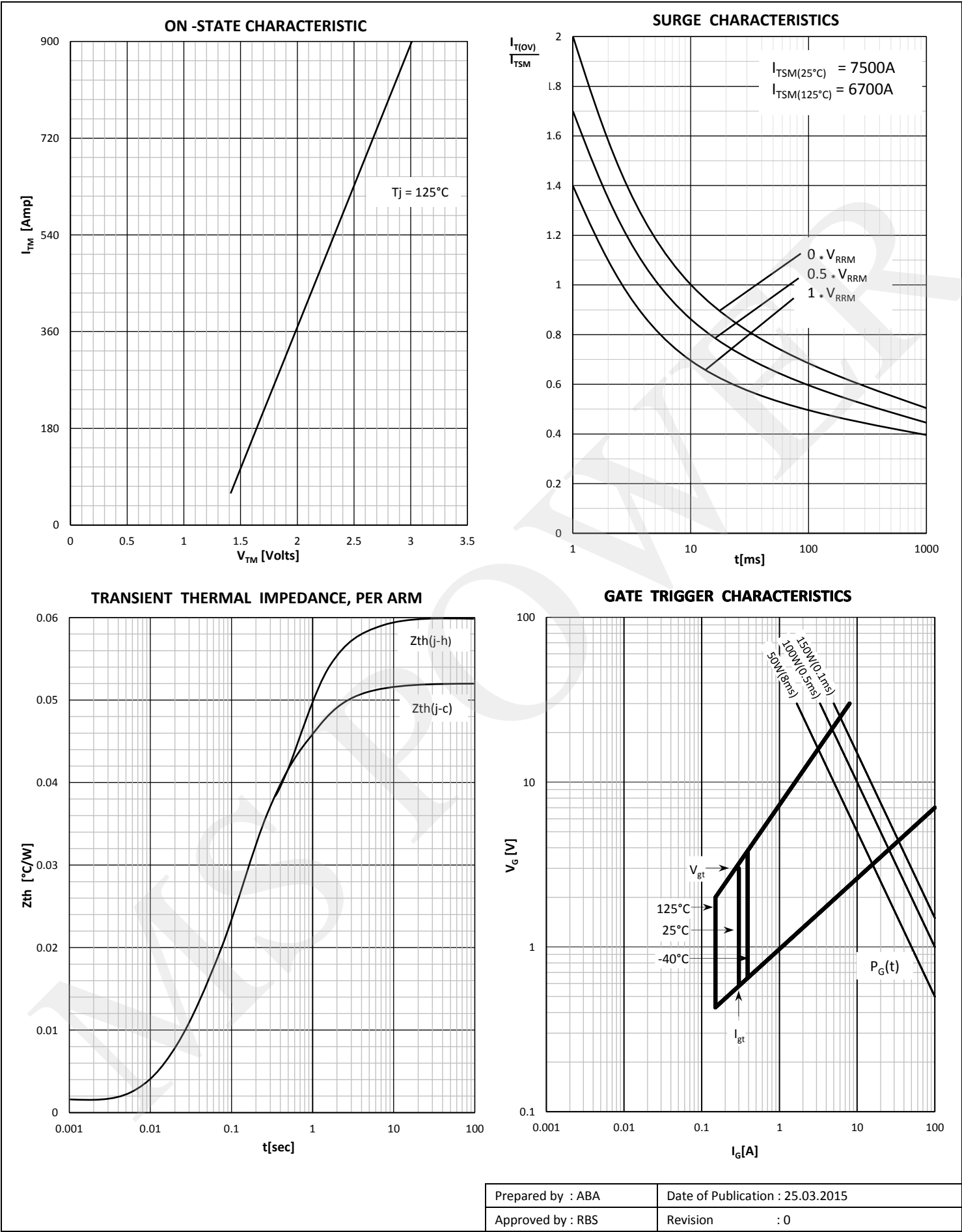


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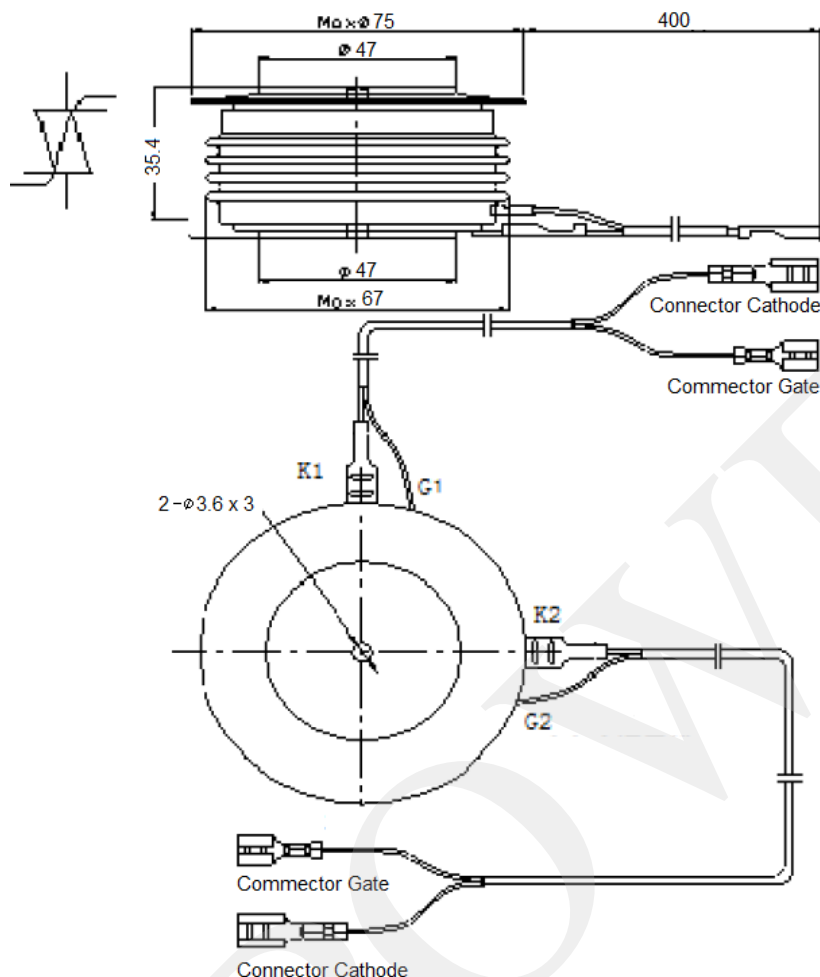
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## Outline



### 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



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