



**Key Parameters**

$V_{RRM}$	= 4500V
$I_{F(AV)}$	= 385A
$I_{FSM}$	= 6500A
$V_{F(TO)}$	= 1.71V
$r_F$	= 1.53mΩ

**Features**

- Full blocking capability over wide temperature range
- Fast recovery characteristics
- Hermetically sealed ceramic package
- High case non-rupture current

**Applications**

- Power Supplies
- Uncontrolled Rectifiers
- Freewheeling / Snubber
- Induction Heating / Melting

**Ordering Information**

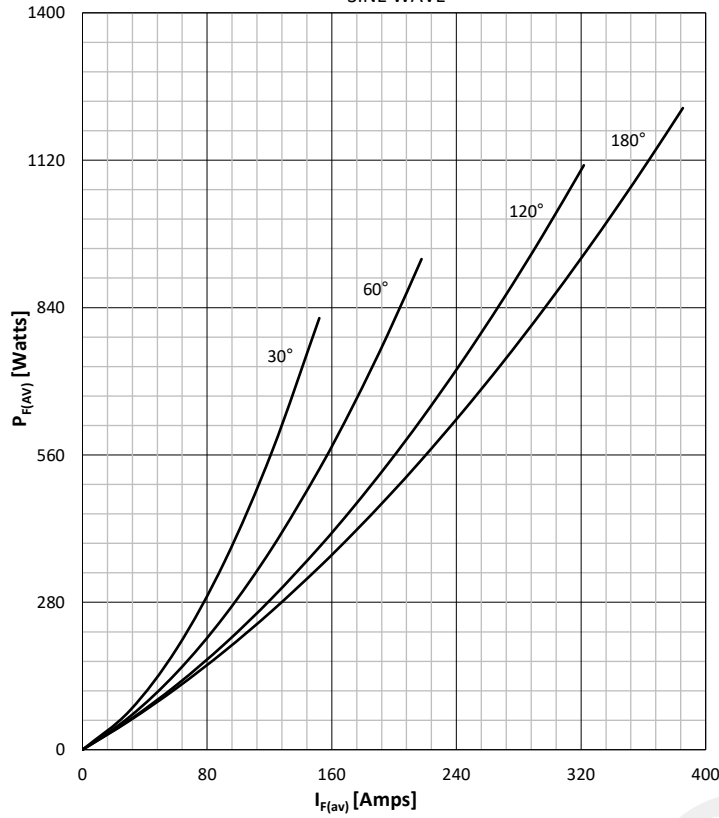
MS DF	385	C	XX
Fast Recovery Diode	Current code	C - Capsule package with Alloyed silicon technology	Voltage Code Code X 100 = $V_{RRM}$
Order Code MS DF385C45 : 4500V $V_{RRM}$ , fast recovery capsule Diode			

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	3000 - 4500	V
V <sub>RSM</sub>	Non-repetitive peak reverse voltage		125	3100 - 4600	V
I <sub>RRM</sub>	Repetitive peak reverse current	V = V <sub>RRM</sub>	125	50	mA
<b>CONDUCTING</b>					
I <sub>F(AV)</sub>	Mean forward current	180° sin, 50 Hz, T <sub>c</sub> =70°C, double side cooled		385	A
I <sub>FRMS</sub>	RMS current	T <sub>c</sub> =70°C, double side cooled		605	A
I <sub>FSM</sub>	Surge forward current	Sine wave, 10 ms Without reverse voltage	25	6500	A
			125	5500	A
I <sup>2</sup> t	I <sup>2</sup> t	Sine wave, 10 ms Without reverse voltage	25	211 x 10 <sup>3</sup>	A <sup>2</sup> s
			125	151 x 10 <sup>3</sup>	A <sup>2</sup> s
V <sub>F</sub>	Forward voltage	On-state current = 1000A	125	3.24	V
V <sub>F(TO)</sub>	Threshold voltage		125	1.71	V
r <sub>F</sub>	Forward slope resistance		125	1.53	mΩ
<b>SWITCHING</b>					
Q <sub>rr</sub>	Recovered Charge (typical)	I <sub>FM</sub> =1000A, -di <sub>F</sub> /dt = 100A/μs, V <sub>r</sub> = 50V, t <sub>p</sub> =1000 μs, 50% chord.	125	680	μC
I <sub>rm</sub>	Reverse recovery current (typical)		125	240	A
T <sub>rr</sub>	Reverse recovery time, 50% chord (typical)		125	4.5	μs
<b>MOUNTING</b>					
R <sub>th(j-c)</sub>	Thermal impedance, sin 180°	Junction to case, double side cooled		0.045	°C/W
R <sub>th(c-h)</sub>	Thermal impedance	Case to heatsink, double side cooled		0.005	°C/W
T <sub>j</sub>	Max. junction temperature			125	°C
T <sub>stg</sub>	Storage temperature			-40 .... 125	°C
M	Clamping force			16 - 18	NM
W	Weight (Approx.)			230	gm
			Prepared by : ABA	Date of Publication : 25.03.2015	
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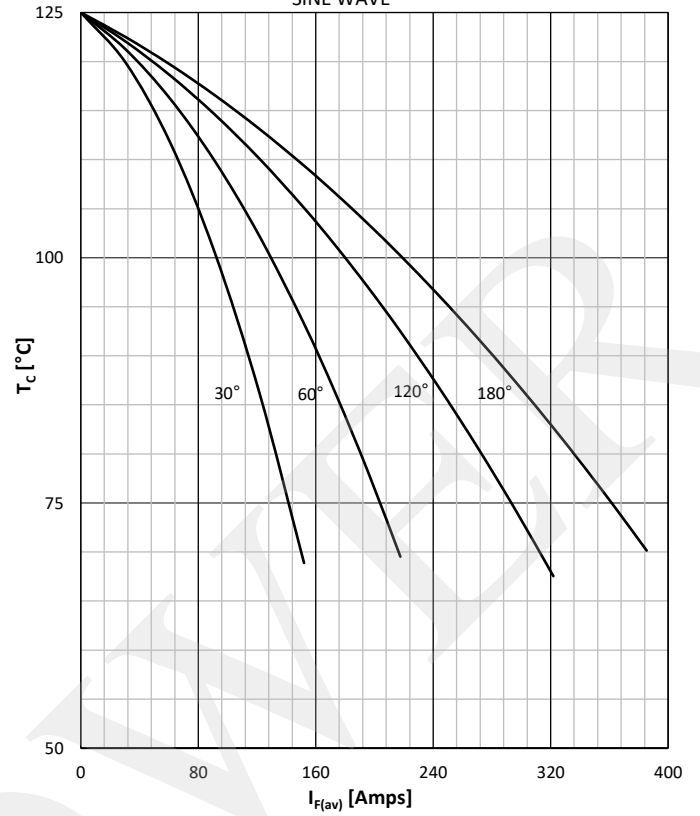
DISSIPATION CHARACTERISTICS

SINE WAVE



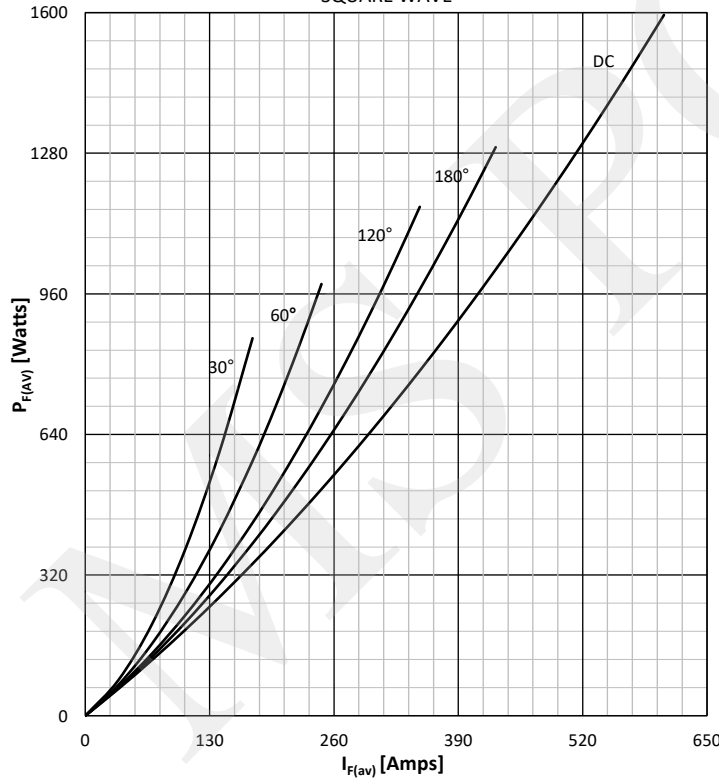
FORWARD CURRENT DERATING CURVE

SINE WAVE



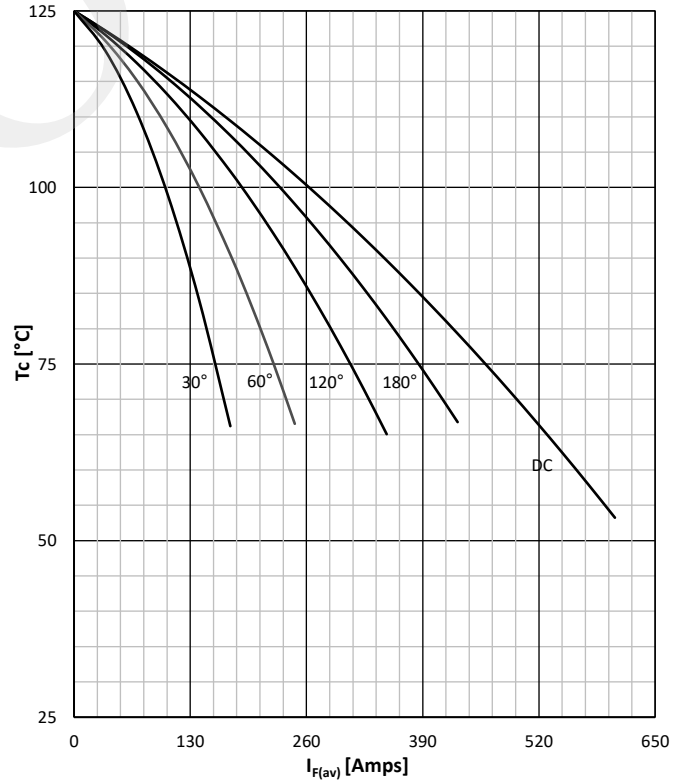
DISSIPATION CHARACTERISTICS

SQUARE WAVE



FORWARD CURRENT DERATING CURVE

SQUARE WAVE



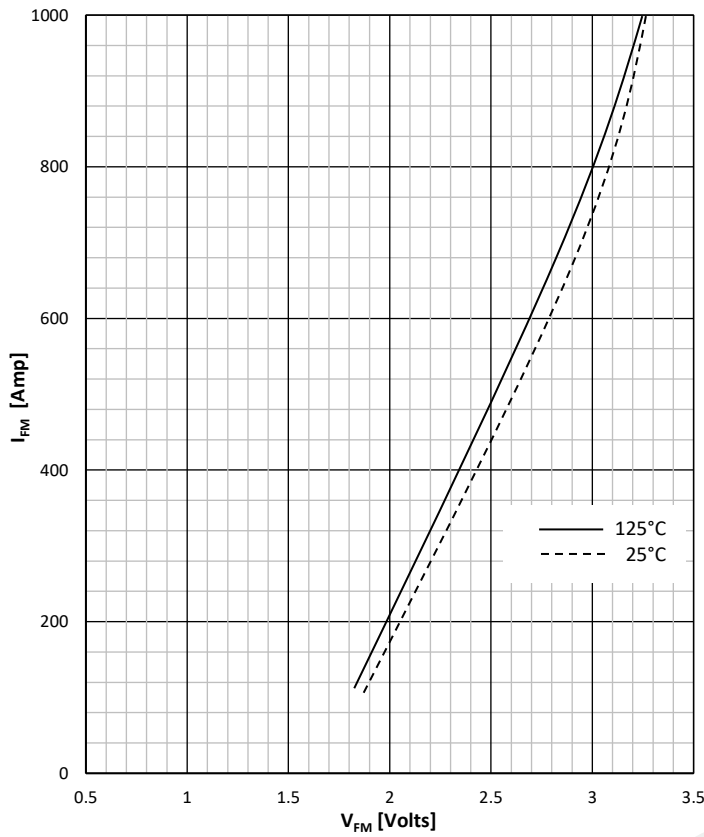
Prepared by : ABA

Date of Publication : 25.03.2015

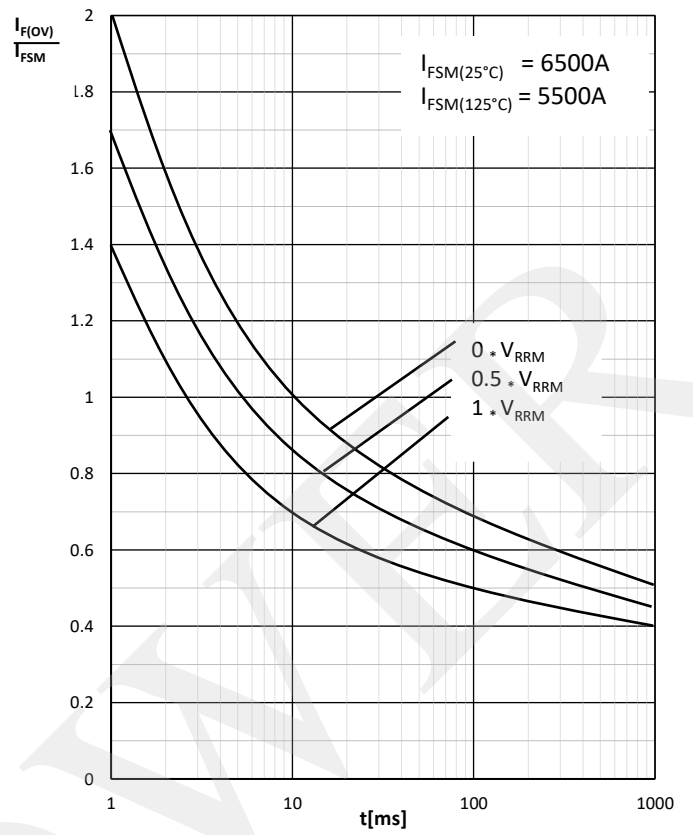
Approved by : RBS

Revision : 0

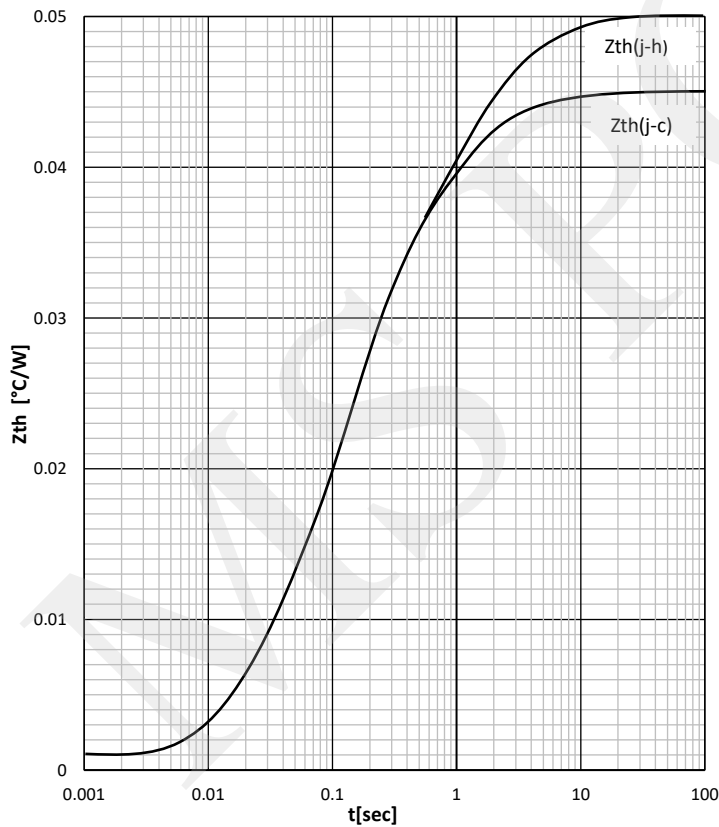
FORWARD CHARACTERISTIC



SURGE CHARACTERISTICS



TRANSIENT THERMAL IMPEDANCE, DSC



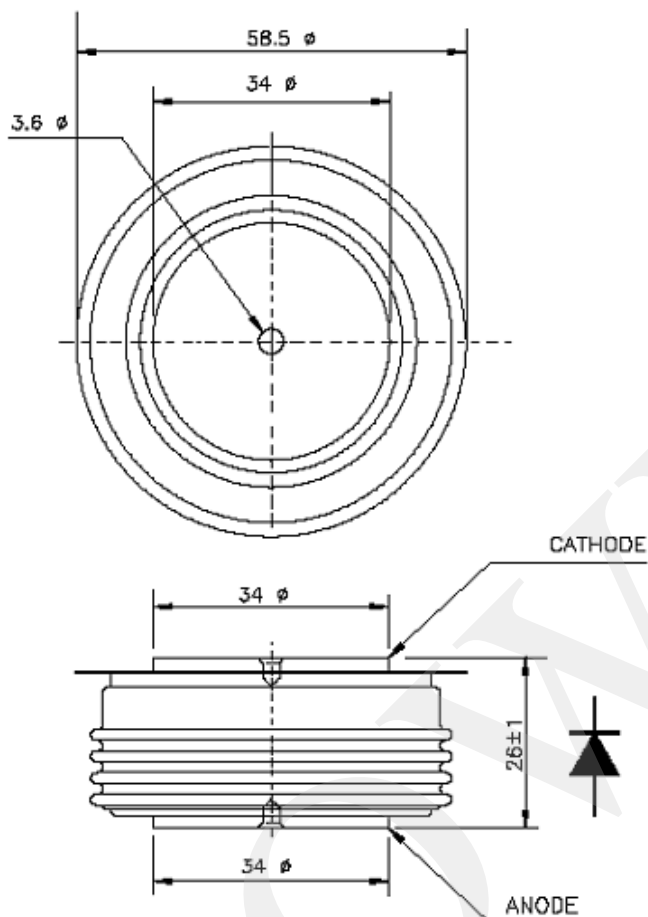
Prepared by : ABA

Date of Publication : 25.03.2015

Approved by : RBS

Revision : 0

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