



**Key Parameters**

$V_{RRM}$	= 8500V
$I_{F(AV)}$	= 563A
$I_{FSM}$	= 10000A
$V_{F(TO)}$	= 0.95V
$r_F$	= 1.25mΩ

**Features**

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

**Applications**

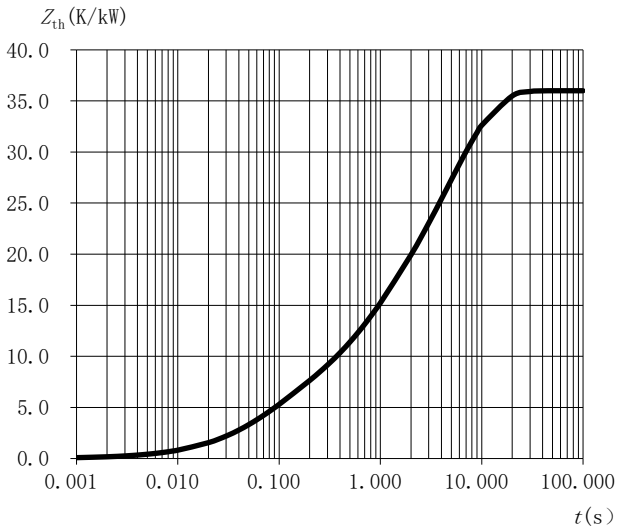
- Traction Rectifiers
- Uncontrolled Rectifiers
- Induction Heating / Melting

**Ordering Information**

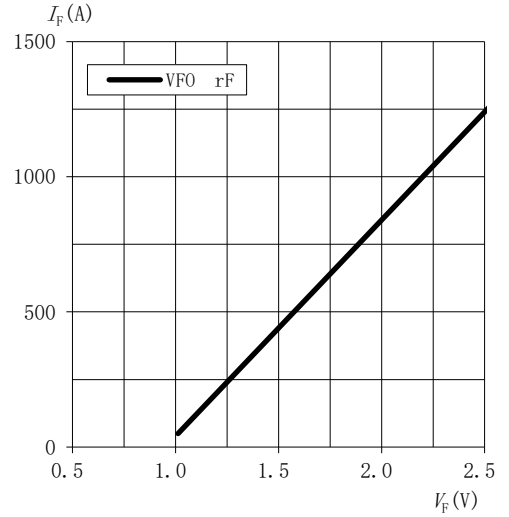
<b>MS PERI</b>	<b>D</b>	<b>563</b>	<b>CZ</b>	<b>X X</b>
Fixed Code	Rectifier Diode	Current code	CZ - Capsule package with Free floating silicon Technology	Voltage Code Code X 100 = $V_{RRM}$
Order Code MS PERI D563CZ85 : 8500V $V_{RRM}$ , Capsule Diode				

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Symbol	Characteristic	Conditions	T <sub>j</sub> [°C]	Value	Unit
<b>BLOCKING</b>					
V <sub>RRM</sub>	Repetitive peak reverse voltage		160	8500	V
V <sub>RSM</sub>	Non-repetitive peak reverse voltage		160	8600	V
I <sub>RRM</sub>	Repetitive peak reverse current	V = V <sub>RRM</sub>	160	50	mA
<b>CONDUCTING</b>					
I <sub>F(AV)</sub>	Mean forward current	180° sin, 50 Hz, T <sub>c</sub> =100°C, double side cooled		563	A
I <sub>FRMS</sub>	RMS current			883	A
I <sub>FSM1</sub>	Surge forward current	Sine wave, 10 ms Without reverse voltage	160	10000	A
I <sup>2</sup> t	I <sup>2</sup> t		160	500 x 10 <sup>3</sup>	A <sup>2</sup> s
V <sub>F</sub>	Forward voltage	On-state current = 1200A	160	2.45	V
V <sub>F(TO)</sub>	Threshold voltage		160	0.95	V
r <sub>F</sub>	Forward slope resistance		160	1.25	mΩ
<b>SWITCHING</b>					
Q <sub>rr</sub>	Reverse recovery charge	I <sub>FM</sub> =1000A, -di <sub>F</sub> /dt = 10A/μs, V <sub>R</sub> = 100V, t <sub>p</sub> =2000μs	160	6200	μC
<b>THERMAL</b>					
R <sub>th(j-c)</sub>	Thermal impedance, sin 180°	Junction to case, double side cooled		0.036	°C/W
R <sub>th(c-h)</sub>	Thermal impedance	Case to heatsink, double side cooled		0.0075	°C/W
T <sub>j</sub>	Max. junction temperature			160	°C
T <sub>stg</sub>	Storage temperature			-40 .... 160	°C
<b>MECHANICAL</b>					
M	Clamping force			8 - 12	KN
W	Weight (Approx.)			260	gm
D <sub>s</sub>	Surface creepage distance			25	mm
D <sub>a</sub>	Air strike distance			14	mm
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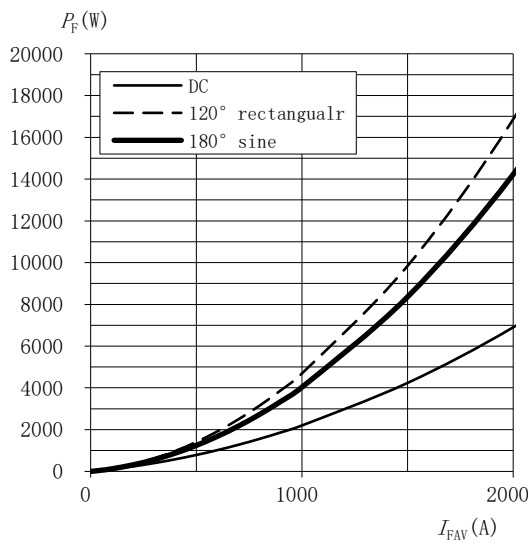
**Fig.1 : Transient thermal impedance (junction-to-case) vs. time**



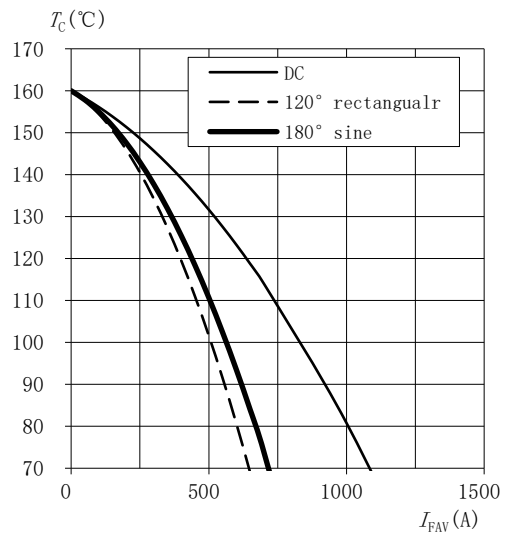
**Fig.2 : On-state V-I characteristics**

$$Z_{th(j-c)}(t) = \sum_{i=1}^n R_i(1 - e^{-t/\tau_i})$$

<i>i</i>	1	2	3	4
<i>R<sub>i</sub></i> (K/kW)	22.3579	5.8105	4.4211	3.4105
<i>τ<sub>i</sub></i> (s)	5.2926	0.9707	0.0663	0.3385

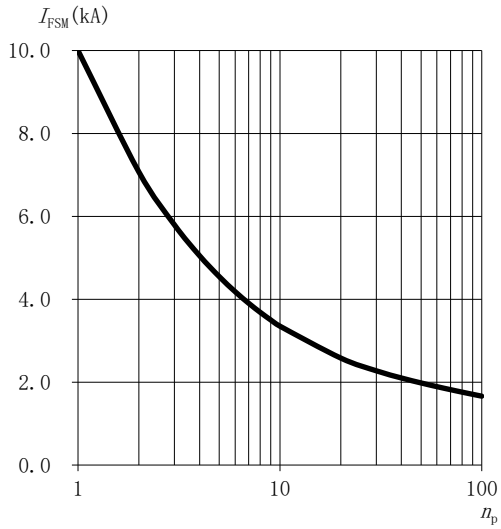


**Fig. 3 : On-state power loss (*P<sub>F</sub>*) vs. average on-state Current (*I<sub>FAV</sub>*)**

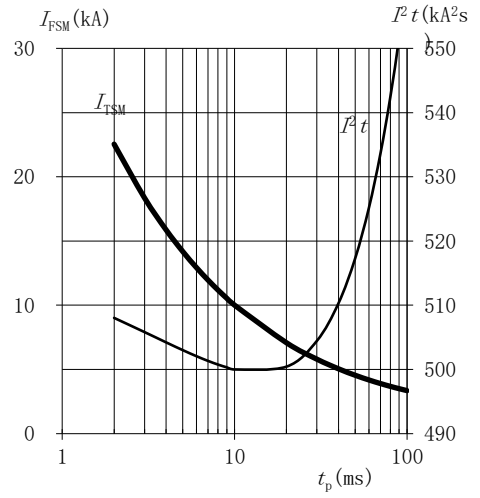


**Fig.4 : Max. permissible case temperature(*T<sub>c</sub>*) vs. average on-state current(*I<sub>FAV</sub>*)**

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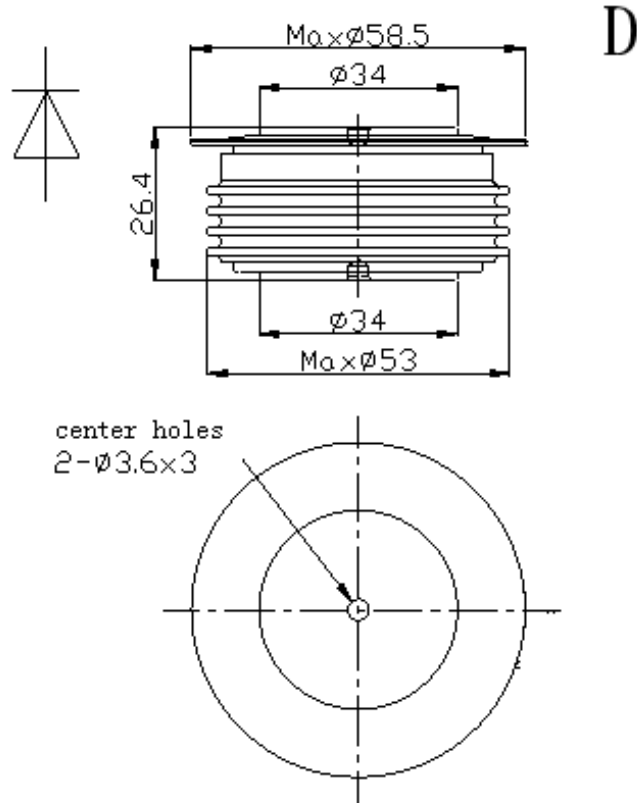


**Fig.5: Surge on-state current ( $I_{FSM}$ ) vs. number of pulses ( $n_p$ )**



**Fig.6: Surge on-state current ( $I_{FSM}$ ) and surge current Integral ( $I^2 t$ ) vs. pulse length ( $t_p$ )**

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