Key Parameters

V_{RRM}	= 8500V
$I_{F(AV)}$	= 1000A
I_{FSM}	= 17000A
$V_{F(TO)}$	= 0.95V
r_F	= 0.62mΩ

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

MS PERI	D	1001	CZ	X X
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 D1001CZ85 : 8500V V_{RRM}, Capsule Diode				

Prepared by : ABA	Date of Publication : 28.08.2018
Approved by :	Revision : 0

Symbol	Characteristic	Conditions	Tj [°C]	Value	Unit
BLOCKING					
V_{RRM}	Repetitive peak reverse voltage		160	8500	V
V_{RSM}	Non-repetitive peak reverse voltage		160	8600	V
I_{RRM}	Repetitive peak reverse current	V= V_{RRM}	160	100	mA
CONDUCTING					
$I_{F(AV)}$	Mean forward current	180° sin,50 Hz, T_c=100°C , double side cooled		1000	A
I_{FRMS}	RMS current			1570	A
I_{FSM1}	Surge forward current	Sine wave, 10 ms Without reverse voltage	160	17000	A
I^2t	I^2t		160	1445×10^3	A^2s
V_F	Forward voltage	On-state current = 2000A	160	2.2	V
$V_{F(TO)}$	Threshold voltage		160	0.95	V
r_F	Forward slope resistance		160	0.62	mΩ
SWITCHING					
Q_{rr}	Reverse recovery charge	I_{FM}=2000A, $-di_F/dt$ = 10A/µs, V_R = 100V,t_p=2000µs	160	10000	µC
THERMAL					
$R_{th(j-c)}$	Thermal impedance, sin 180°	Junction to case, double side cooled		0.022	°C/W
$R_{th(c-h)}$	Thermal impedance	Case to heatsink, double side cooled		0.004	°C/W
T_j	Max. junction temperature			160	°C
T_{stg}	Storage temperature			-40 160	°C
MECHANICAL					
M	Clamping force			18 - 26	KN
W	Weight (Approx.)			650	gm
D_S	Surface creepage distance			38	mm
D_a	Air strike distance			21	mm

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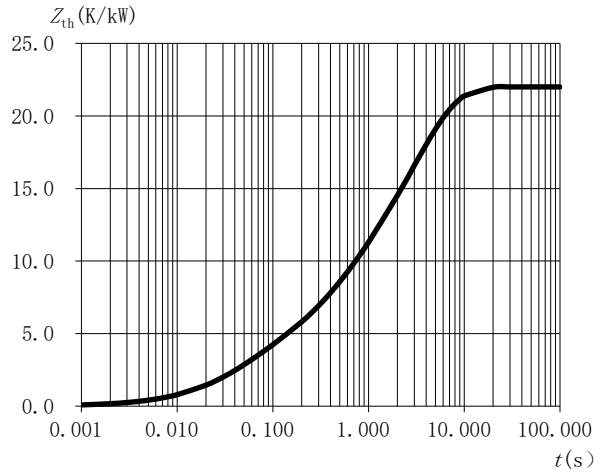

Fig.1 : Transient thermal impedance (junction-to-case) vs. time

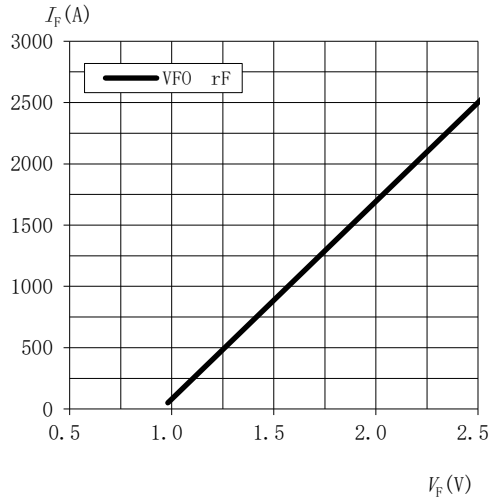

Fig.2 : On-state V-I characteristics

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

i	1	2	3	4
R_i(K/kW)	13.6631	3.55092	2.70172	2.08417
τ_i(s)	3.23438	0.59322	0.04050	0.20692

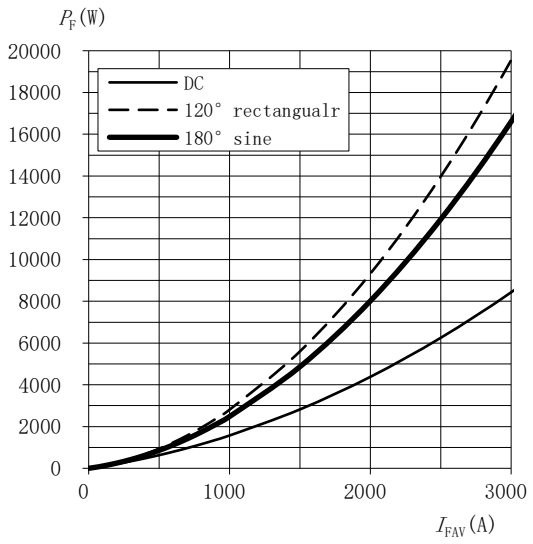

Fig. 3 : On-state power loss (P_F) vs. average on-state Current (I_{FAV})

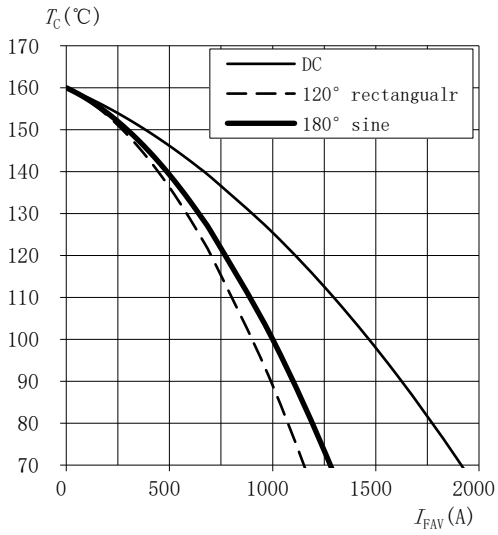

Fig.4 : Max. permissible case temperature(T_C) vs. average on-state current(I_{FAV})

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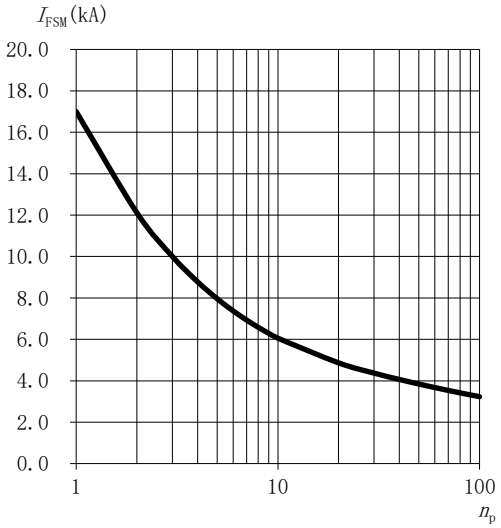

Fig.5: Surge on-state current (I_{FSM}) vs. number of pulses (n_p)

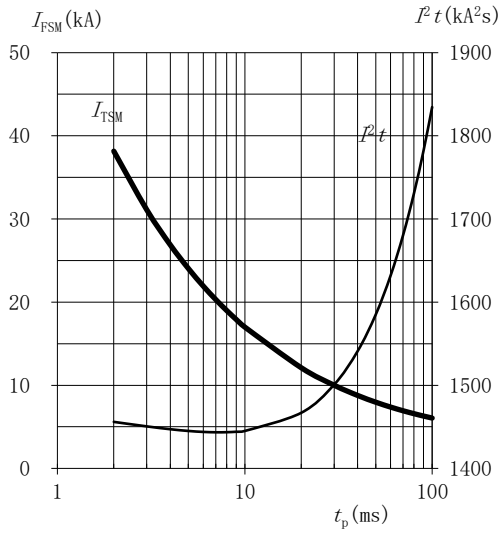

Fig.6: Surge on-state current (I_{FSM}) and surge current Integral (I^2t) vs. pulse length (t_p)

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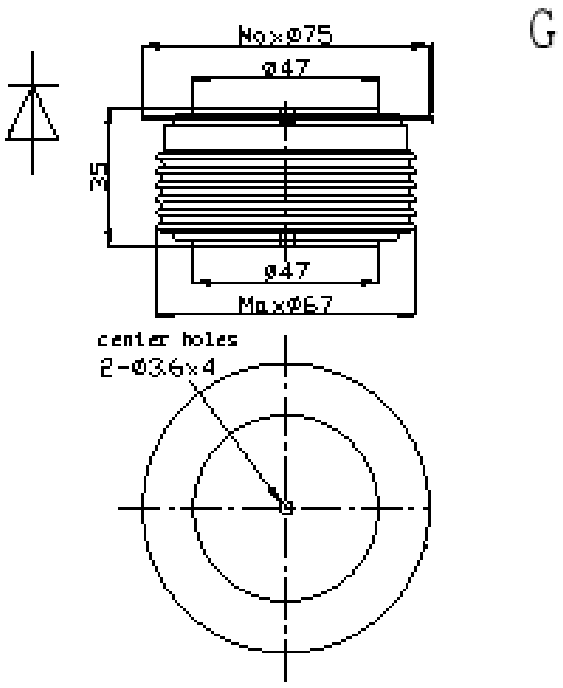
Outline :



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Approved by :	Revision : 0