

Ver: 0906B

Key Parameters

V_{RRM}	1600~2200	V
$I_{F(AV)}$	410	A
I_{FSM}	4.9	kA
V_{FO}	0.82	V
r_F	1.11	mW

Applications

High power drive
High voltage supplies
Motor control

Features

Double-side cooling
High mean current
High surge current

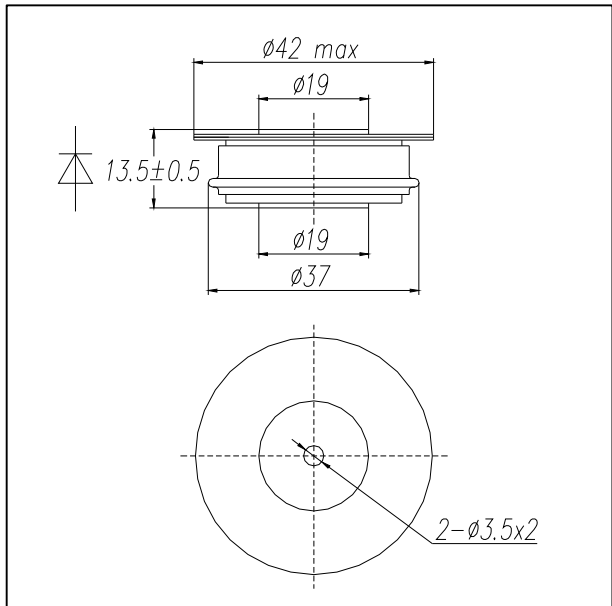
Thermal & Mechanical Data

Symb.	Parameter	Min	Type	Max	Unit
R_{thjc}	Thermal Resistance Junction to Case	-	-	0.08	K/W
R_{thcs}	Thermal Resistance Case to Heatsink	-	-	0.02	K/W
T_{vj}	Junction Temperature	-40	-	175	°C
T_{stg}	Storage Temperature	-40	-	175	°C
F	Mounting Force	-	5	-	kN
m	Weight	-	0.07	-	kg

Voltage Ratings

Device Type	$V_{RRM}(V)$	Test Conditions
ZP ₆ 400-16	1600	$T_{vj} = 25, 175 \text{ } ^\circ\text{C}$ $I_{RRM} = 30 \text{ mA}$ $V_R = V_{RRM}$ $t_p = 10\text{ms}$ $V_{RSM} = V_{RRM} + 100 \text{ V}$
ZP ₆ 400-18	1800	
ZP ₆ 400-20	2000	
ZP ₆ 400-22	2200	

Outline



Current Ratings

Symb.	Parameter	Test Conditions	Min	Type	Max	Unit
$I_{F(AV)}$	Mean Forward Current	Half Sine Wave, $T_C = 100 \text{ } ^\circ\text{C}$	-	-	410	A
$I_{F(RMS)}$	RMS Forward Current	$T_C = 100 \text{ } ^\circ\text{C}$	-	-	644	A
I_{FSM}	Surge (non-repetitive) Current	10ms, Half Sine Wave, $T_{vj} = 175 \text{ } ^\circ\text{C}$, $V_R = 0$	-	-	4.9	kA
I^2t	Limiting load integral	Sine Wave, 10ms	-	-	12	$10^4 \text{ A}^2\text{s}$

Characteristics

Symb.	Parameter	Test Conditions	Min	Type	Max	Unit
V_{FM}	Peak Forward Voltage	$I_{FM} = 800 \text{ A}$, $T_{vj} = 25 \text{ }^\circ\text{C}$	-	-	1.85	V
I_{RRM}	Reverse Repetitive Peak Current	$T_{vj} = 175 \text{ }^\circ\text{C}$, V_{RRM}	-	-	30	mA
V_{FO}	Threshold Voltage	$T_{vj} = 175 \text{ }^\circ\text{C}$	-	-	0.82	V
r_F	Slope Resistance	$T_{vj} = 175 \text{ }^\circ\text{C}$	-	-	1.11	m Ω
Q_r	Reverse Recovery Charge	$T_{vj} = 175 \text{ }^\circ\text{C}$	-	1500	-	μC

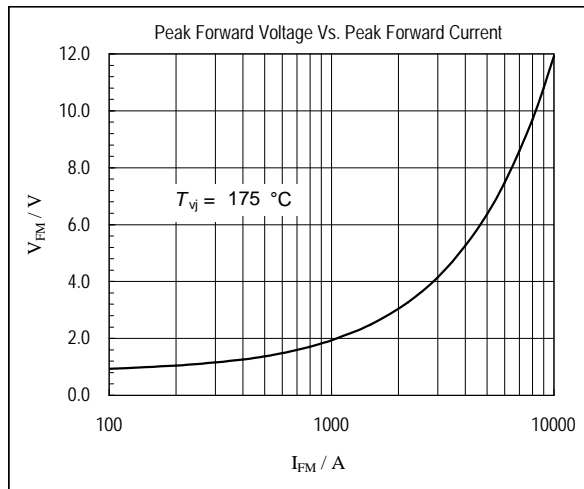


Fig1. Peak Forward Voltage Vs. Peak Forward Current

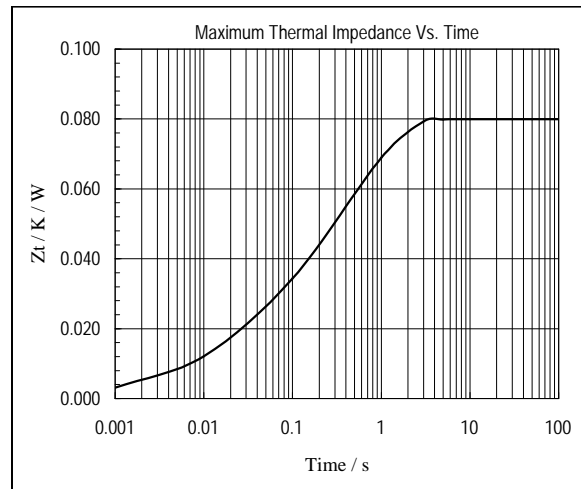


Fig2. Maximum Thermal Impedance Vs. Time

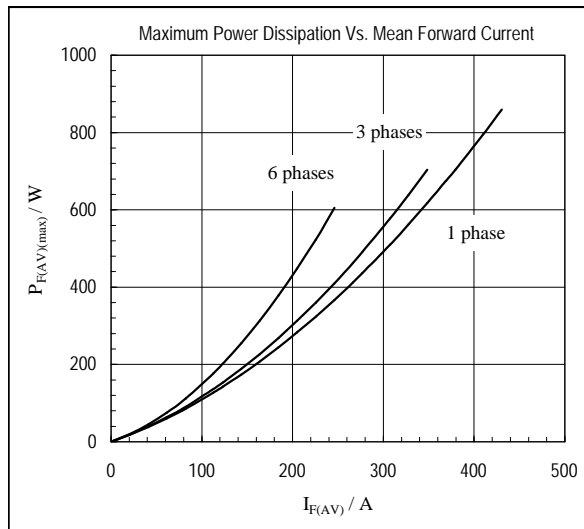


Fig3. Maximum Power Dissipation Vs. Mean Forward Current

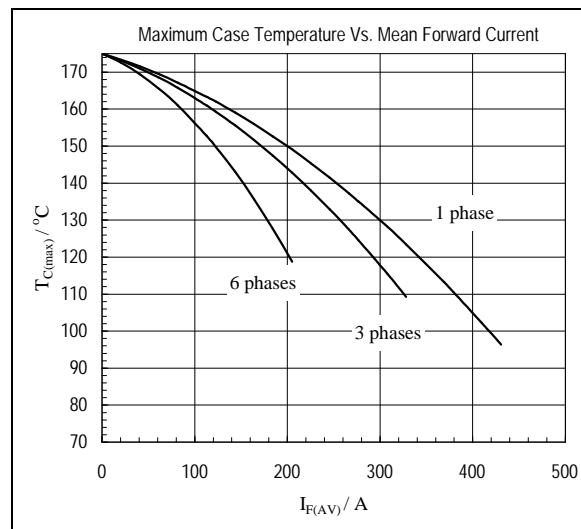


Fig4. Maximum Case Temperature Vs. Mean Forward Current

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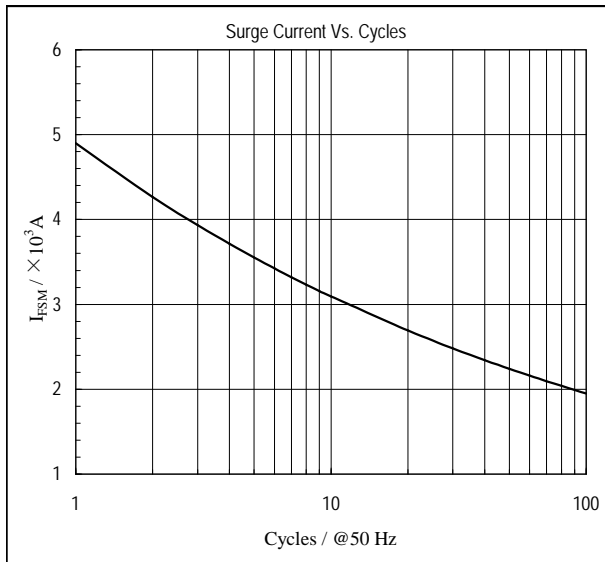


Fig5. Surge Current Vs. Cycles

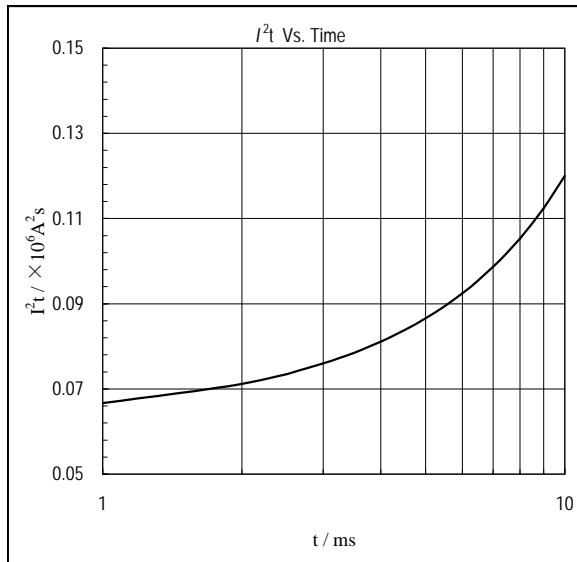


Fig6. I²t Vs. Time

Power Electronics Business Unit, Zhuzhou CSR Times Electric Co., LTD

Address Tianxin, ZhuZhou City, Hunan Province, China
 Zipcode 412001
 Telephone 0731 - 28498268, 28498238, 28493472
 Fax 0731 - 28498851, 28498494
 Email zesem@teg.cn
 Web Site <http://www.zesem.com>

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