MS TF2100

Key Parameters

V_{DRM} / V_{RRM}	= 2000V
$I_{T(AV)}$	= 2100A
I_{TSM}	= 34kA
$V_{T(TO)}$	= 1.271V
r_T	= 0.255mΩ

Features

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

Applications

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

Ordering Information

MS TF	2100	C	X X	H	2N
Fast Switching Thyristor	Current Code	C - Capsule package with Alloyed silicon technology	Voltage Code Code X 100 = V_{DRM}/V_{RRM}	Reapplied dv/dt H =400V/µsec	Turn Off time code 2N = 60µsec 4J = 100µsec
Order Code MS TF2100C20H2N – 2000V V_{DRM},V_{RRM}, T_q=60µsec, 26mm clamp height capsule					

Prepared by : ABA	Date of Publication : 25.03.2015
Approved by : RBS	Revision : 0

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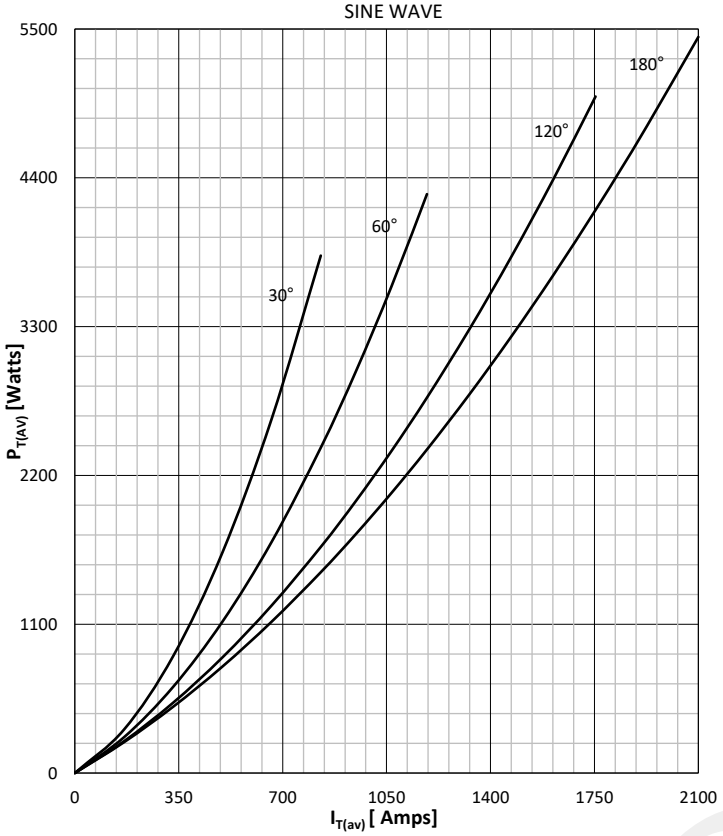
Symbol	Characteristic	Conditions	Tj [°C]	Value	Unit
BLOCKING					
V_{RRM}	Repetitive peak reverse voltage		125	1400 - 2000	V
V_{RSM}	Non-repetitive peak reverse voltage		125	1500 - 2100	V
V_{DRM}	Repetitive peak off-state voltage		125	1400 - 2000	V
I_{RRM}	Repetitive peak reverse current	V= V_{RRM}	125	150	mA
I_{DRM}	Repetitive peak off-state current	V= V_{DRM}	125	150	mA
CONDUCTING					
$I_{T(AV)}$	Mean on state current	180° sin ,50 Hz, T_c=70°C, Double side cooled		2100	A
I_{RMS}	RMS on-state current			3297	A
I_{TSM}	Surge on-state current	Sine wave, 10 ms Without reverse voltage	25	34000	A
			125	33000	A
I^2t	I^2t	Sine wave, 10 ms Without reverse voltage	25	5780 x 10^3	A^2s
			125	5445 x 10^3	A^2s
V_T	On-state voltage	On-state current = 2000A	125	2.04	V
$V_{T(TO)}$	Threshold voltage		125	1.271	V
r_T	On-state slope resistance		125	0.255	mΩ
SWITCHING					
di/dt	Critical rate of rise of on-state current	Repetitive	125	300	A/µs
dv/dt	Critical rate of rise of off-state voltage	V_{DR} = 67%V_{DRM}	125	1000	V/µs
Q_{RR}	Recovered Charge	I_{TM}=1000A, -di_F /dt = 50A/µs, V_R = 100V, t_p=1000µs	125	1370	µC
Tq	Circuit commutated turn off time	I_{TM}=1000A, -di_F /dt = 60A/µs, V_R = 100V,t_p=1000µs Reapplied dv/dt = 400V/µs, V_{DR} = 80%V_{DRM}	125	60 - 100	µs
GATE					
I_{gt}	Gate trigger current	V_D=6V	25	250	mA
V_{gt}	Gate trigger voltage	V_D=6V	25	3.0	V
I_H	Holding current	V_D=6V, gate open circuit	25	600	mA
I_L	Latching current	V_D=6V	25	1000	mA
MOUNTING					
$R_{th(j-c)}$	Thermal impedance, sin 180°	Junction to case, Double side cooled		0.010	°C/W
$R_{th(j-c)}$	Thermal impedance, rec120°	Junction to case, Double side cooled		0.012	°C/W
$R_{th(c-h)}$	Thermal impedance	Case to heatsink, Double side cooled		0.002	°C/W
T_j	Max. junction temperature			125	°C
T_{stg}	Storage temperature			-40 125	°C
M	Clamping Force			40 - 45	kN
W	Weight (Approx.)			1650	gm

Prepared by : ABA	Date of Publication : 25.03.2015
Approved by : RBS	Revision : 0

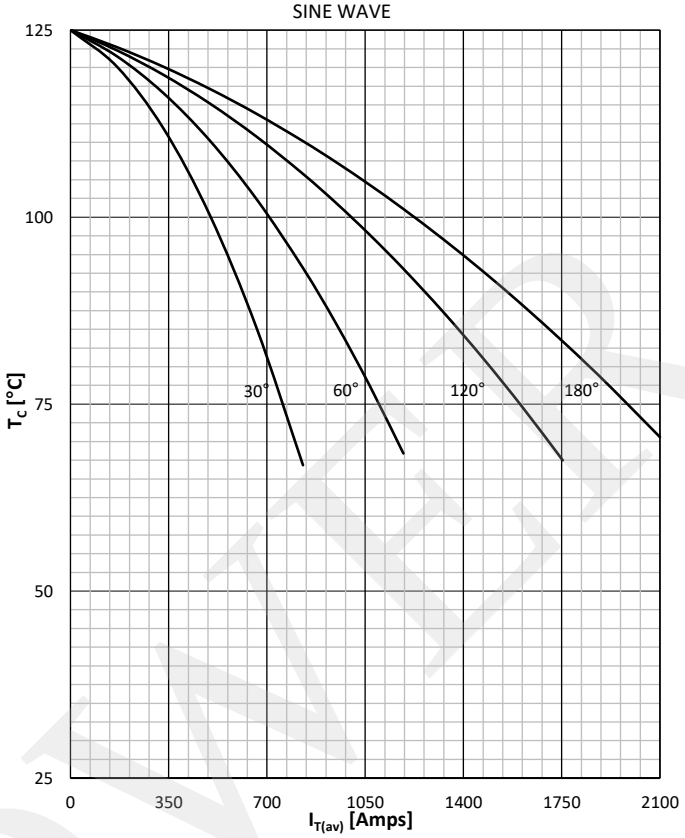
DISSIPATION CHARACTERISTICS

SINE WAVE



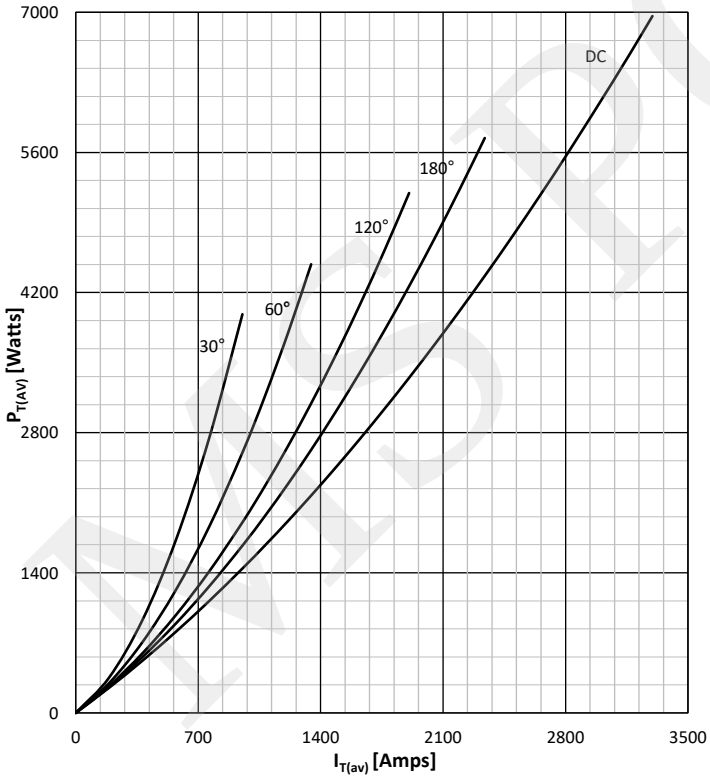
ON STATE CURRENT DERATING CURVE

SINE WAVE



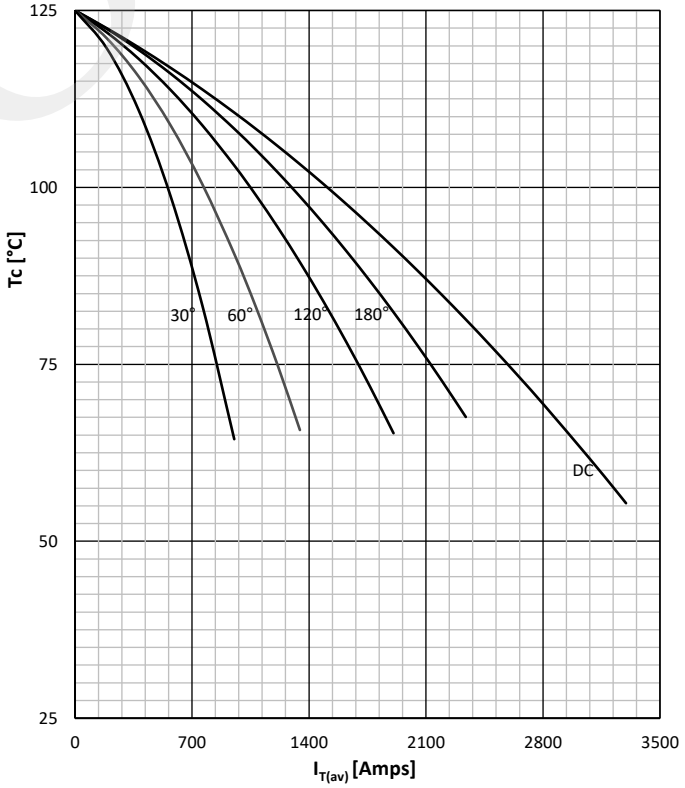
DISSIPATION CHARACTERISTICS

SQUARE WAVE



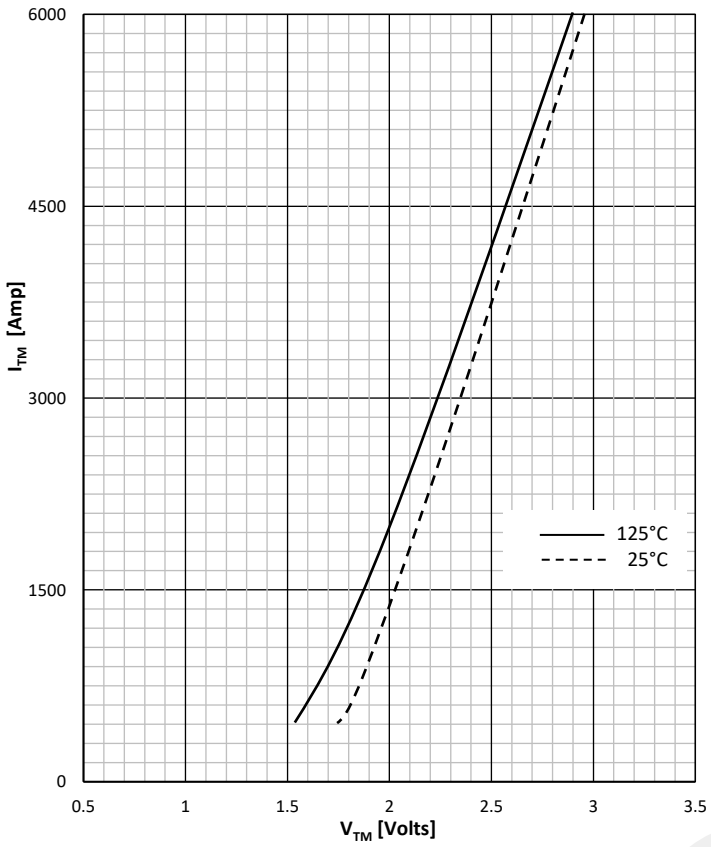
ON STATE CURRENT DERATING CURVE

SQUARE WAVE

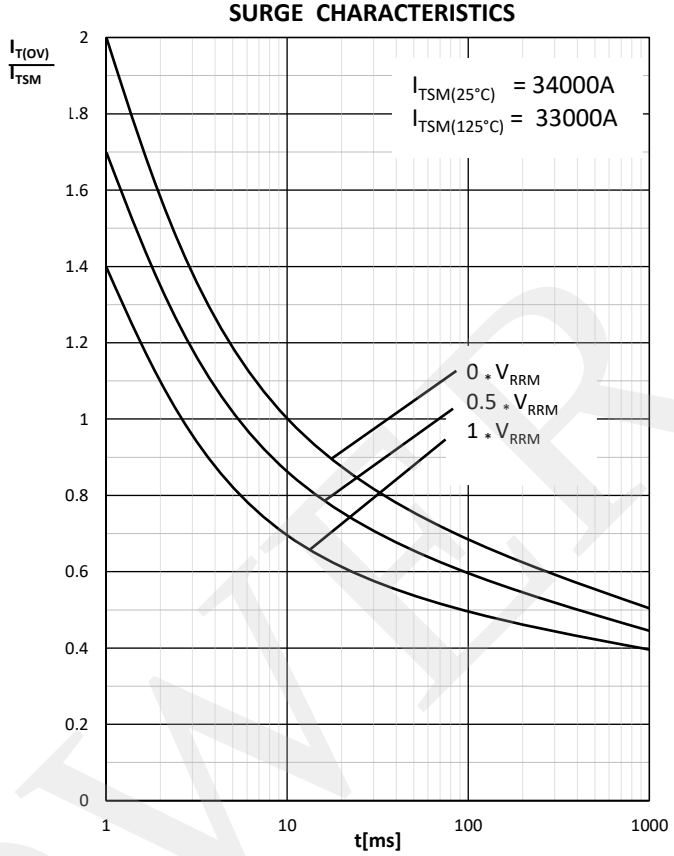


Prepared by : ABA	Date of Publication : 25.03.2015
Approved by : RBS	Revision : 0

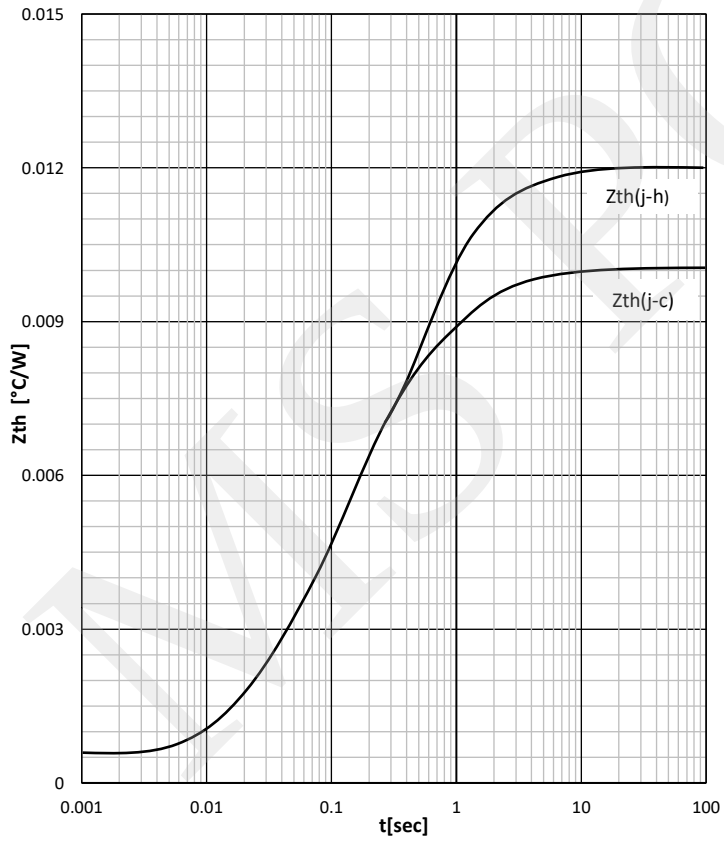
ON -STATE CHARACTERISTIC



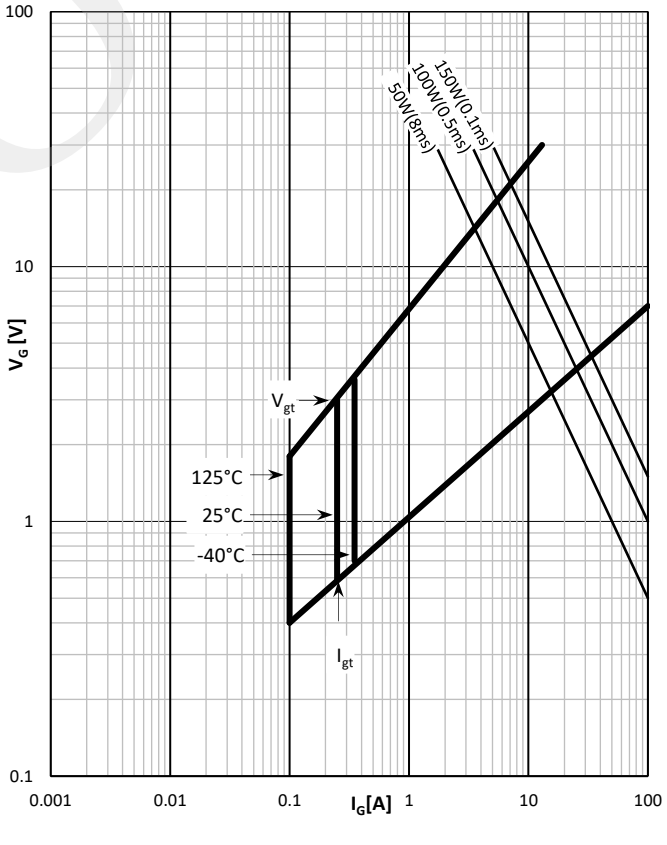
SURGE CHARACTERISTICS



TRANSIENT THERMAL IMPEDANCE, PER ARM



GATE TRIGGER CHARACTERISTICS



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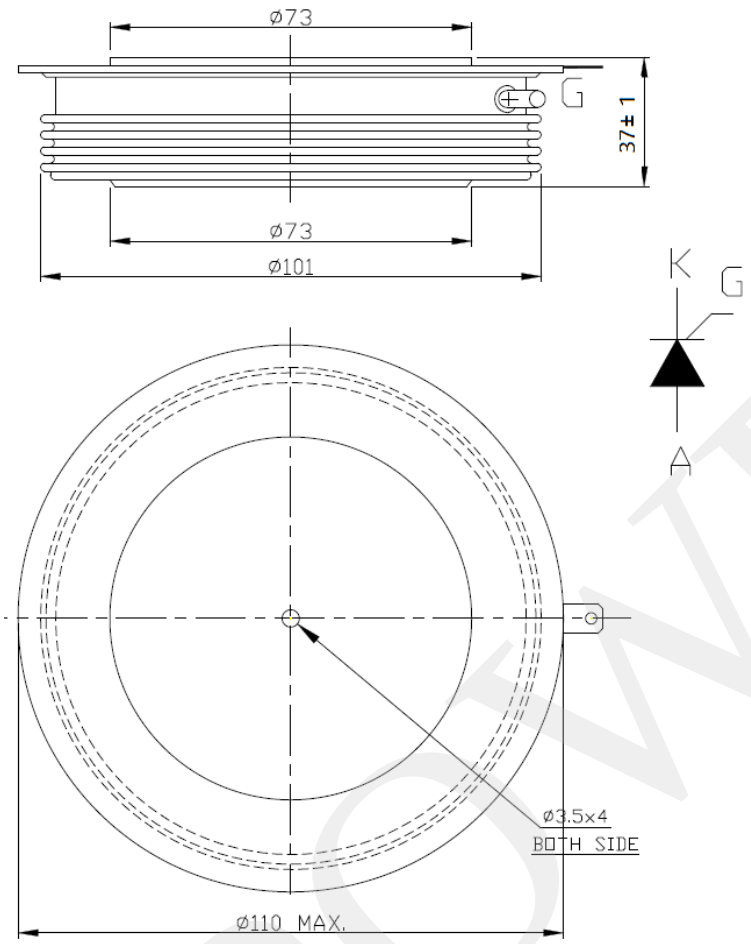
Outline



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Prepared by : ABA	Date of Publication : 25.03.2015
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