



**Key Parameters**

$V_{DRM} / V_{RRM}$	= 1200V
$I_{T(AV)}$	= 810A
$I_{TSM}$	= 10250A
$V_{T(TO)}$	= 1.90V
$r_T$	= 0.357m $\Omega$

**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	810	C	XX	F	A
Fast Switching Thyristor	Current Code	C - Capsule package with Alloyed silicon technology	Voltage Code Code X 100 = $V_{DRM}/V_{RRM}$	Reapplied dv/dt F = 200V/ $\mu$ sec	Turn Off time code A = 10 $\mu$ sec E = 15 $\mu$ sec

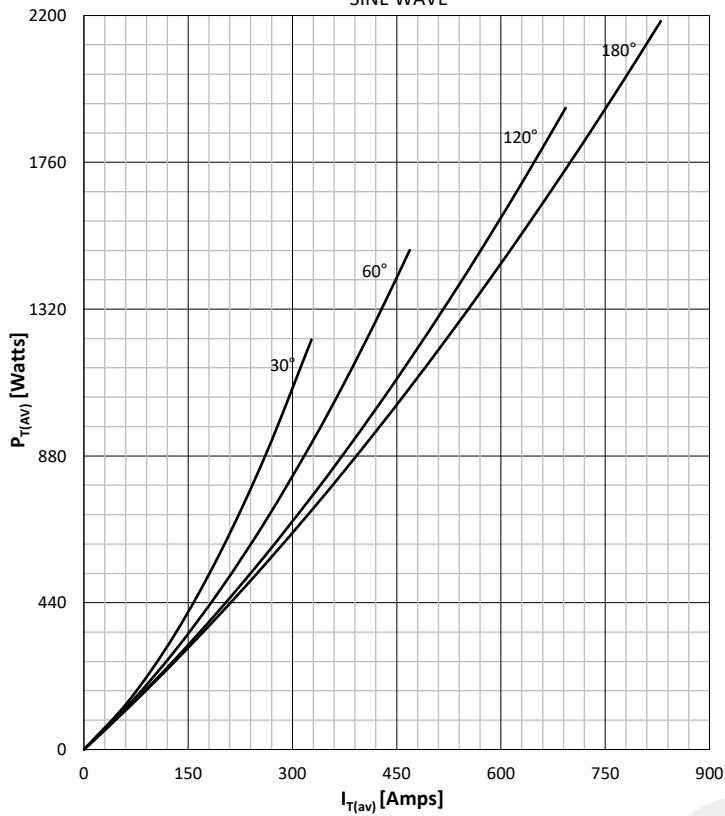
Order Code MS TF810C12FA – 1200V  $V_{DRM}, V_{RRM}$ ,  $T_q=10\mu$ sec, 26mm clamp height capsule

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	800 - 1200	V
V <sub>RSM</sub>	Non-repetitive peak reverse voltage		125	900 - 1300	V
V <sub>DRM</sub>	Repetitive peak off-state voltage		125	800 - 1200	V
I <sub>RRM</sub>	Repetitive peak reverse current	V = V <sub>RRM</sub>	125	70	mA
I <sub>DRM</sub>	Repetitive peak off-state current	V = V <sub>DRM</sub>	125	70	mA
<b>CONDUCTING</b>					
I <sub>T(AV)</sub>	Mean on state current	180° sin ,50 Hz, T <sub>c</sub> =70°C, Double side cooled 180° sin ,50 Hz, T <sub>c</sub> =68°C, Double side cooled		810 830	A
I <sub>RMS</sub>	RMS on-state current	T <sub>c</sub> =68°C, Double side cooled		1303	A
I <sub>TSM</sub>	Surge on-state current	Sine wave, 10 ms Without reverse voltage	25	10250	A
			125	9350	A
I <sup>2</sup> t	I <sup>2</sup> t	Sine wave, 10 ms Without reverse voltage	25	525 x 10 <sup>3</sup>	A <sup>2</sup> s
			125	437 x 10 <sup>3</sup>	A <sup>2</sup> s
V <sub>T</sub>	On-state voltage	On-state current = 1400A	125	2.40	V
V <sub>T(TO)</sub>	Threshold voltage		125	1.90	V
r <sub>T</sub>	On-state slope resistance		125	0.357	mΩ
<b>SWITCHING</b>					
di/dt	Critical rate of rise of on-state current	Repetitive	125	1000	A/μs
dv/dt	Critical rate of rise of off-state voltage	V <sub>DR</sub> = 80%V <sub>DRM</sub>	125	200	V/μs
T <sub>q</sub>	Circuit commutated turn off time	I <sub>TM</sub> =1000A, -di <sub>F</sub> /dt = 60A/μs, V <sub>R</sub> = 50V, t <sub>p</sub> =1000μs Reapplied dv/dt = 200V/μs, V <sub>DR</sub> = 33%V <sub>DRM</sub>	125	10 - 15	μs
<b>GATE</b>					
I <sub>gt</sub>	Gate trigger current	V <sub>D</sub> =6V	25	300	mA
V <sub>gt</sub>	Gate trigger voltage	V <sub>D</sub> =6V	25	3.0	V
I <sub>H</sub>	Holding current	V <sub>D</sub> =6V, gate open circuit	25	1000	mA
I <sub>L</sub>	Latching current	V <sub>D</sub> =6V	25	1200	mA
<b>MOUNTING</b>					
R <sub>th(j-c)</sub>	Thermal impedance, sin 180°	Junction to case, Double side cooled		0.026	°C/W
R <sub>th(j-c)</sub>	Thermal impedance, rec120°	Junction to case, Double side cooled		0.030	°C/W
R <sub>th(c-h)</sub>	Thermal impedance	Case to heatsink, Double side cooled		0.006	°C/W
T <sub>j</sub>	Max. junction temperature			125	°C
T <sub>stg</sub>	Storage temperature			-40 ... 125	°C
M	Clamping Force			10 - 20	kN
W	Weight (Approx.)			300	gm
			Prepared by : ABA	Date of Publication : 25.03.2015	
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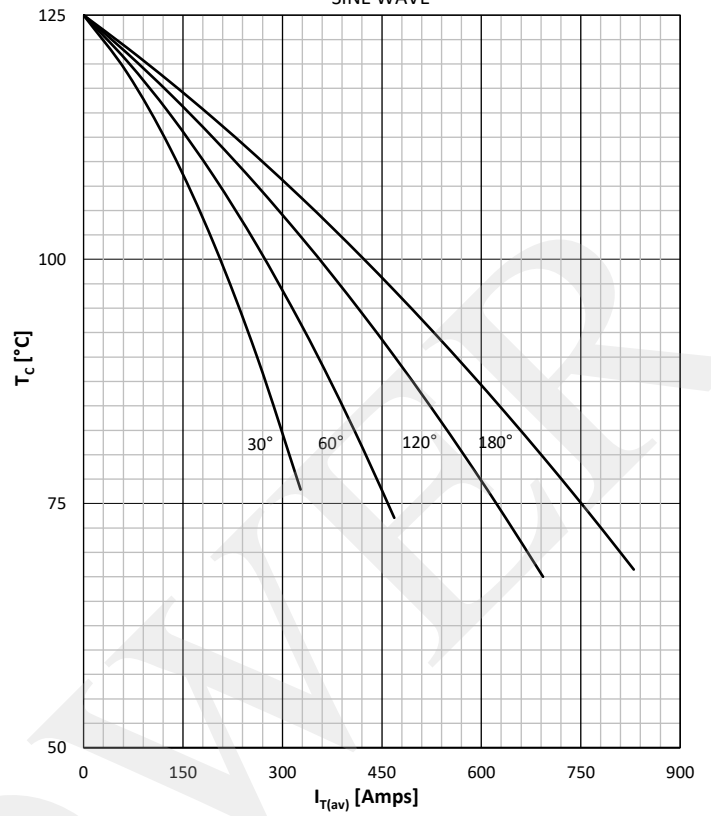
DISSIPATION CHARACTERISTICS

SINE WAVE



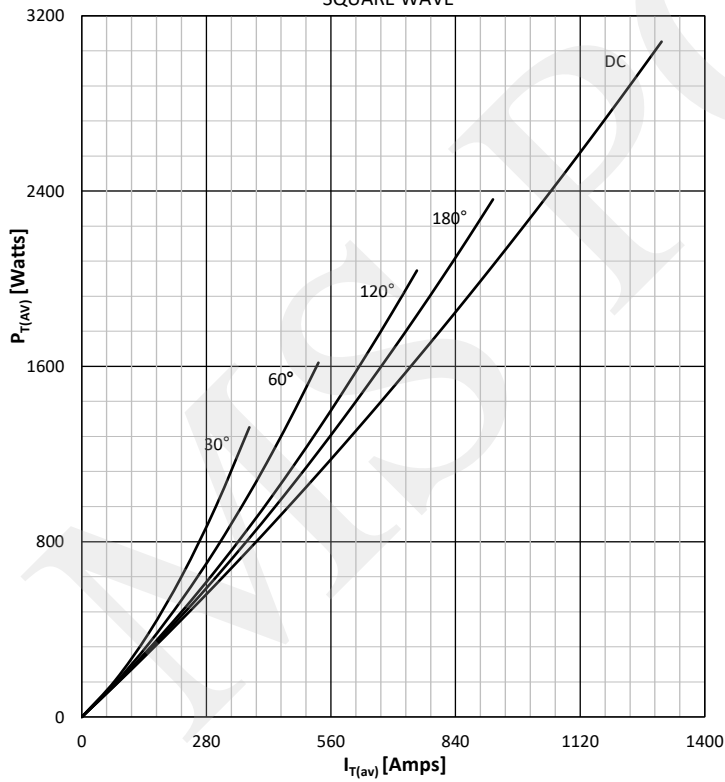
ON STATE CURRENT DERATING CURVE

SINE WAVE



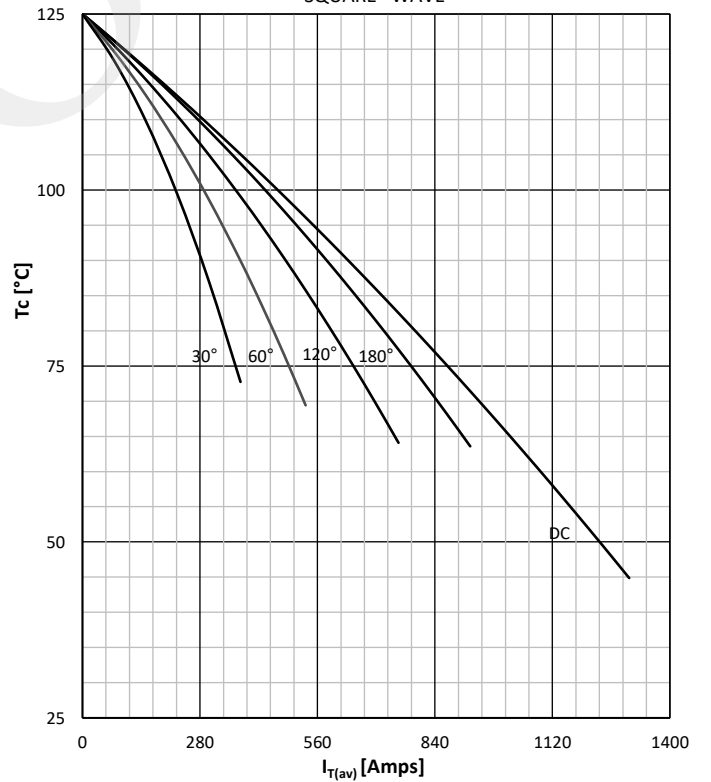
DISSIPATION CHARACTERISTICS

SQUARE WAVE



ON STATE CURRENT DERATING CURVE

SQUARE WAVE



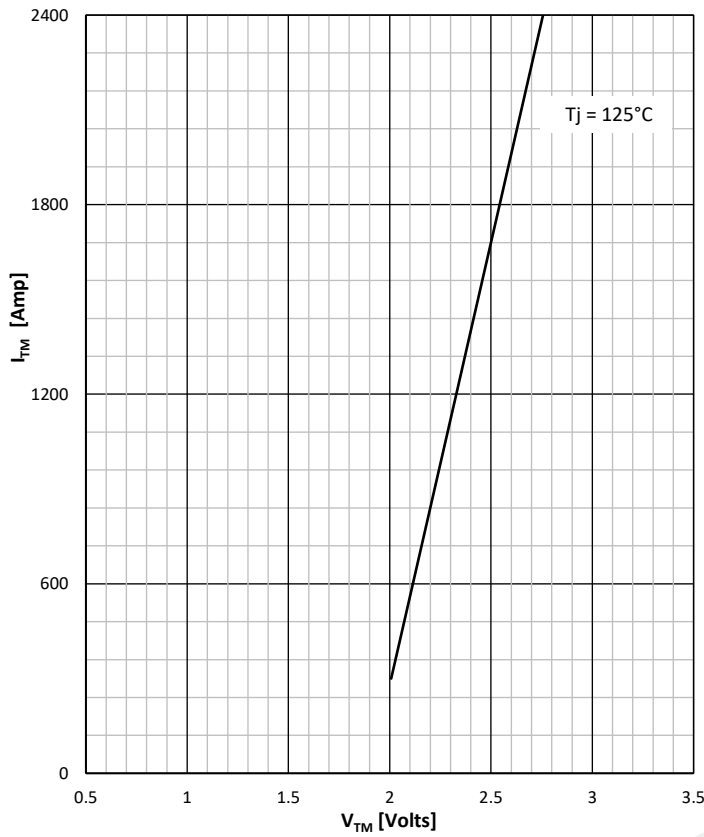
Prepared by : ABA

Date of Publication : 25.03.2015

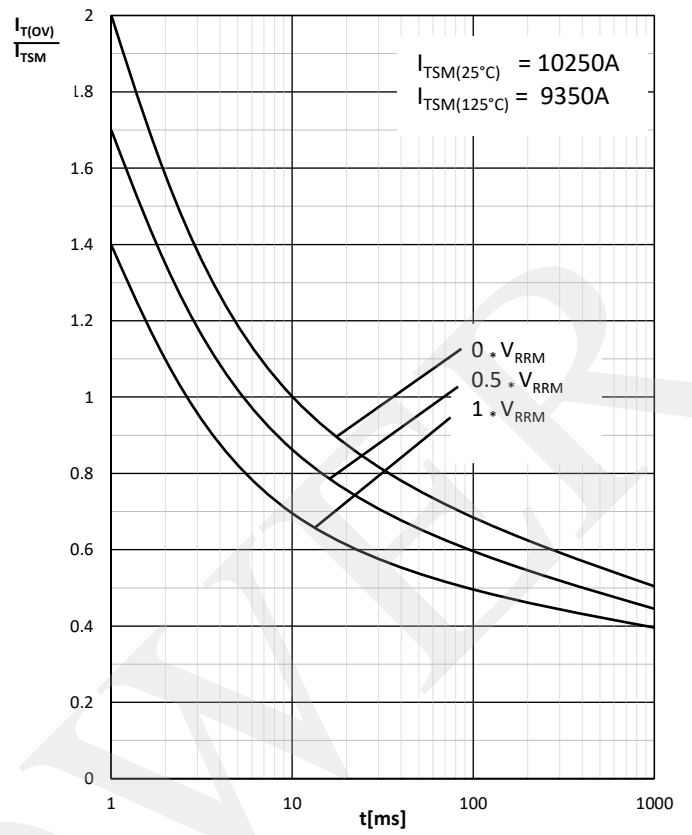
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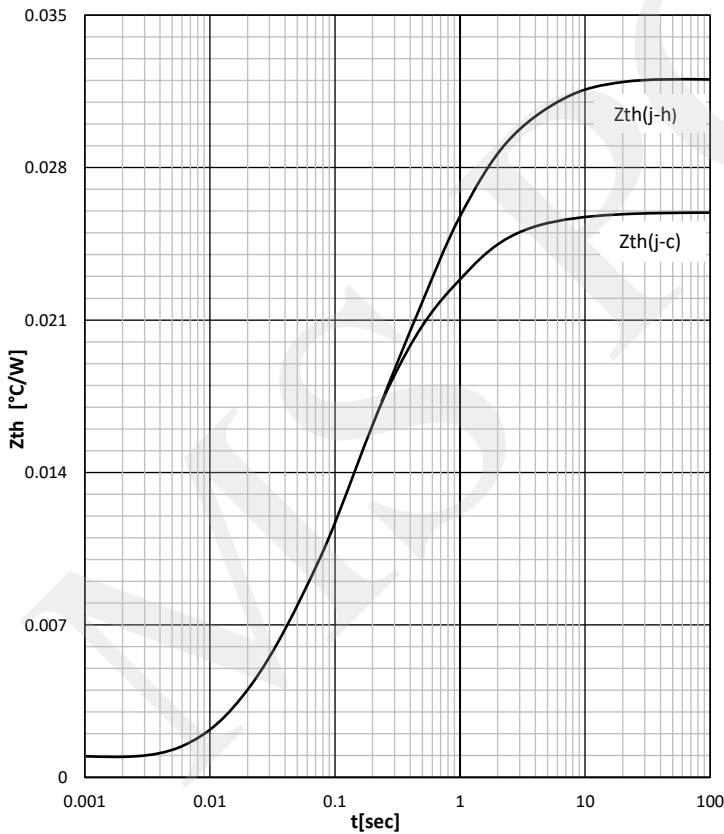
ON STATE CHARACTERISTIC



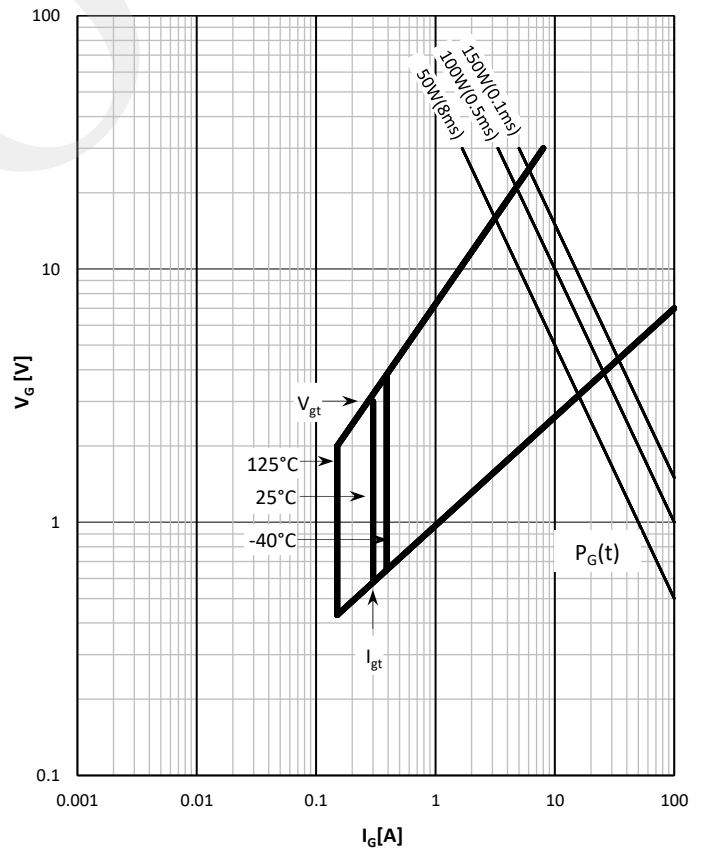
SURGE CHARACTERISTICS



TRANSIENT THERMAL IMPEDANCE



GATE TRIGGER CHARACTERISTICS



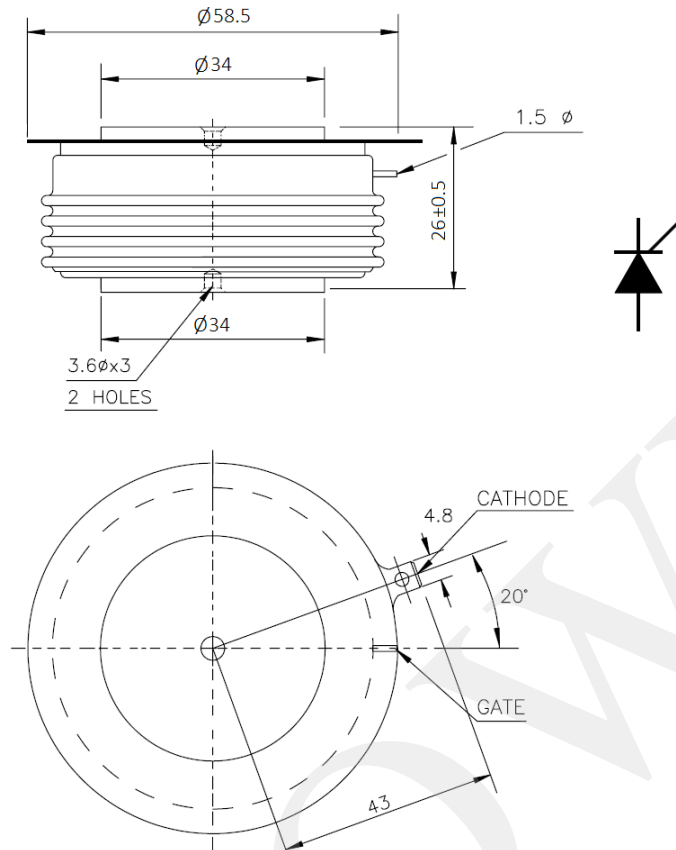
Prepared by : ABA

Date of Publication : 25.03.2015

Approved by : RBS

Revision : 0

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