



**Key Parameters**

$V_{DRM} / V_{RRM}$	= 1600V
$I_{T(AV)}$	= 45A
$I_{TSM}$	= 1000A
$V_{T(TO)}$	= 1.0V
$r_T$	= 5.0mΩ

**Features**

- Full blocking capability over wide temperature range
- Hard soldered joints for high reliability

**Applications**

- Power Supplies
- DC motor control
- Controlled Rectifiers
- AC switch

**Ordering Information**

MS T	46	S	XX	U	B
Phase Control Thyristor	Current Code	Stud / Flat Base Version	Voltage Code Code X 100 = $V_{DRM}/V_{RRM}$	Stud Threads U = 1/4" UNF M = M8 x 1.25	Technology B = Solder Bond Technology

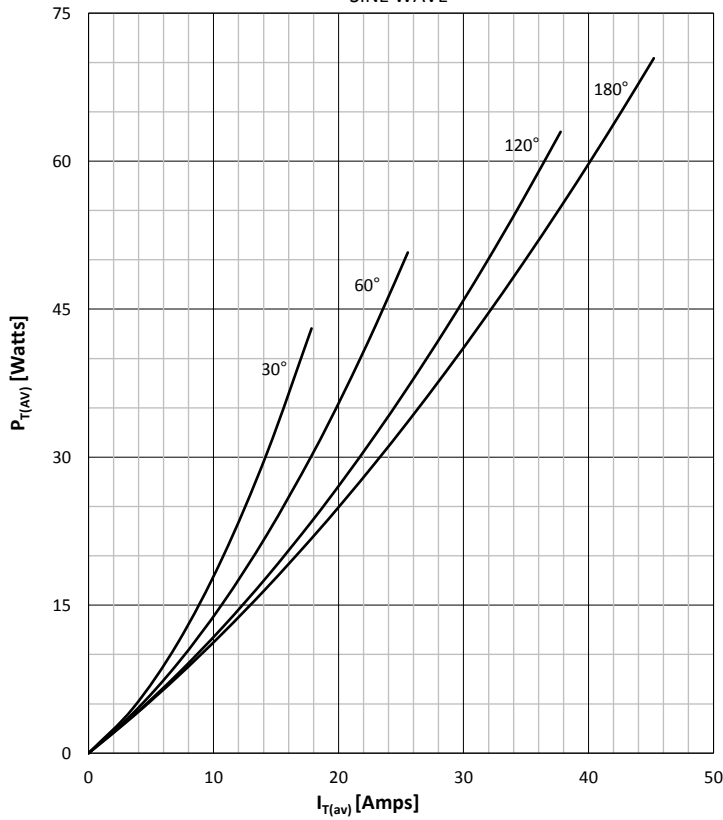
Order Code MS T46S16UB : 1600V  $V_{DRM}, V_{RRM}$ , Stud base Thyristor with 1/4" UNF threads

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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		125	200 - 1600	V
V <sub>RSM</sub>	Non-repetitive peak reverse voltage		125	300 - 1700	V
V <sub>DRM</sub>	Repetitive peak off-state voltage		125	200 - 1600	V
I <sub>RRM</sub>	Repetitive peak reverse current	V = V <sub>RRM</sub>	125	10	mA
I <sub>DRM</sub>	Repetitive peak off-state current	V = V <sub>DRM</sub>	125	10	mA
<b>CONDUCTING</b>					
I <sub>T(AV)</sub>	Mean on state current	180° sin ,50 Hz, T <sub>c</sub> =85°C		45	A
I <sub>RMS</sub>	RMS on-state current			71	A
I <sub>TSM</sub>	Surge on-state current	Sine wave, 10 ms Without reverse voltage	25	1000	A
			125	900	A
I <sup>2</sup> t	I <sup>2</sup> t	Sine wave, 10 ms Without reverse voltage	25	5000	A <sup>2</sup> s
			125	4050	A <sup>2</sup> s
V <sub>T</sub>	On-state voltage	On-state current = 140A	125	1.71	V
V <sub>T(TO)</sub>	Threshold voltage		125	1.0	V
r <sub>T</sub>	On-state slope resistance		125	5.0	mΩ
<b>SWITCHING</b>					
di/dt	Critical rate of rise of on-state current		125	100	A/μs
dv/dt	Critical rate of rise of off-state voltage	V <sub>DR</sub> = 67%V <sub>DRM</sub>	125	1000	V/μs
<b>GATE</b>					
I <sub>gt</sub>	Gate trigger current	V <sub>D</sub> =6V	25	150	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	200	mA
I <sub>L</sub>	Latching current	V <sub>D</sub> =6V	25	400	mA
<b>MOUNTING</b>					
R <sub>th(j-c)</sub>	Thermal impedance, sin 180°	Junction to case		0.56	°C/W
R <sub>th(j-c)</sub>	Thermal impedance, rec120°	Junction to case		0.64	°C/W
R <sub>th(c-h)</sub>	Thermal impedance	Case to heatsink		0.20	°C/W
T <sub>j</sub>	Max. junction temperature			125	°C
T <sub>stg</sub>	Storage temperature			-40 ... 125	°C
M	Mounting torque			4	NM
W	Weight (Approx.)			38	gm
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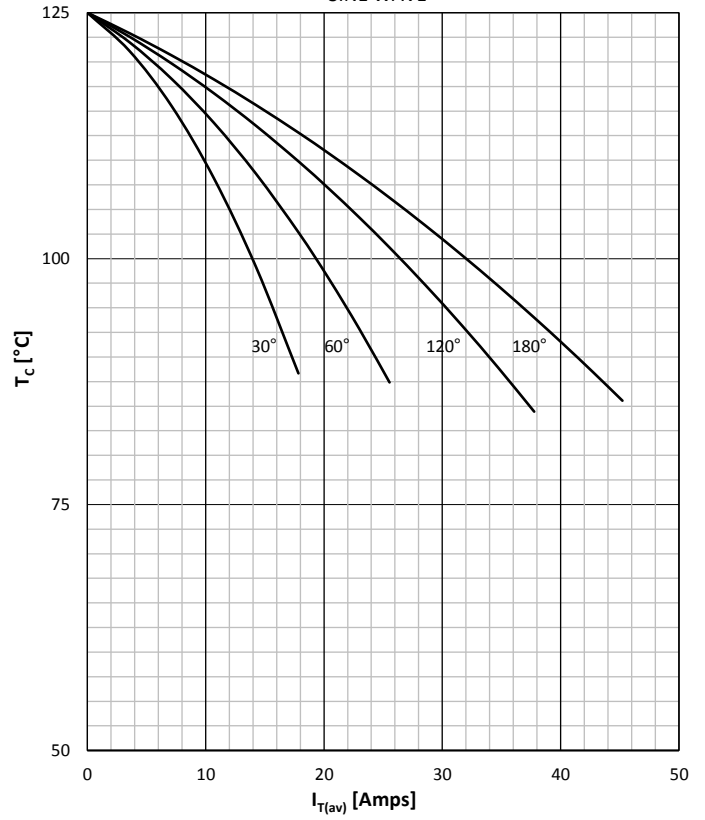
DISSIPATION CHARACTERISTICS

SINE WAVE



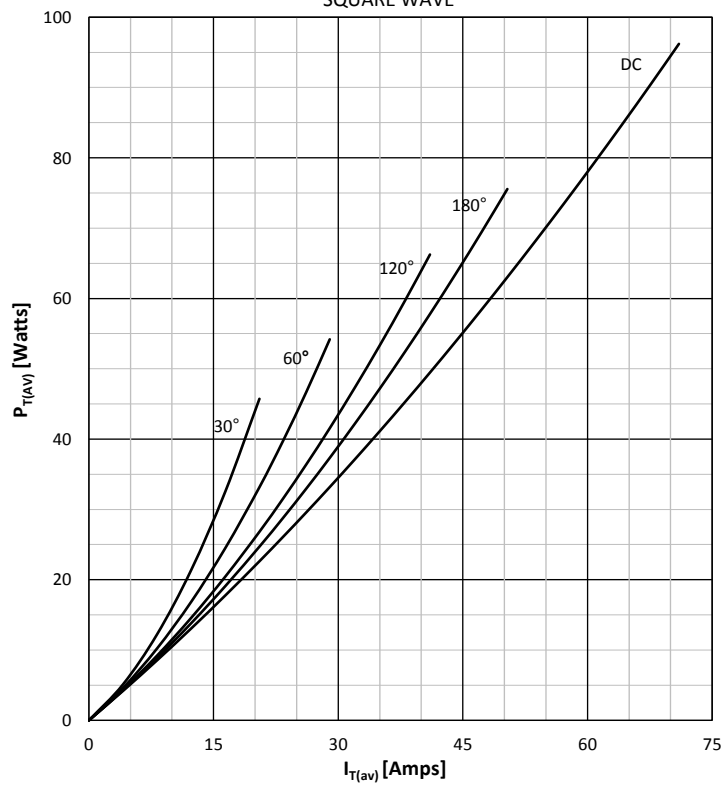
ON STATE CURRENT DERATING CURVE

SINE WAVE



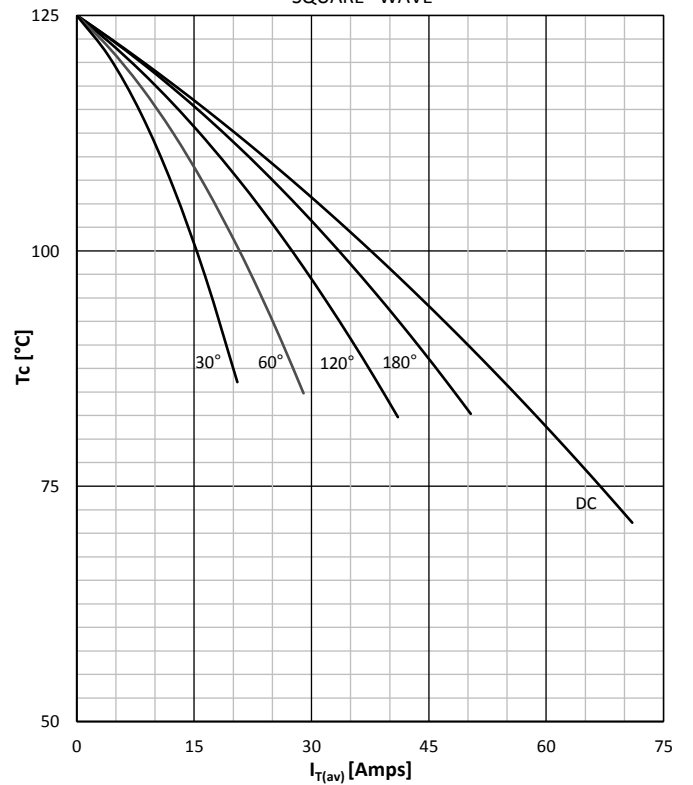
DISSIPATION CHARACTERISTICS

SQUARE WAVE



ON STATE CURRENT DERATING CURVE

SQUARE WAVE



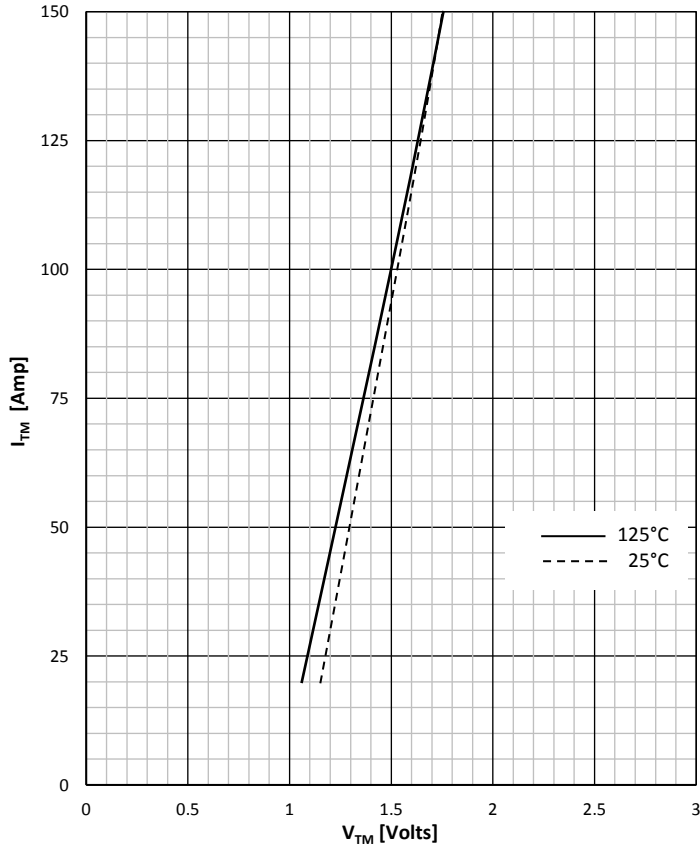
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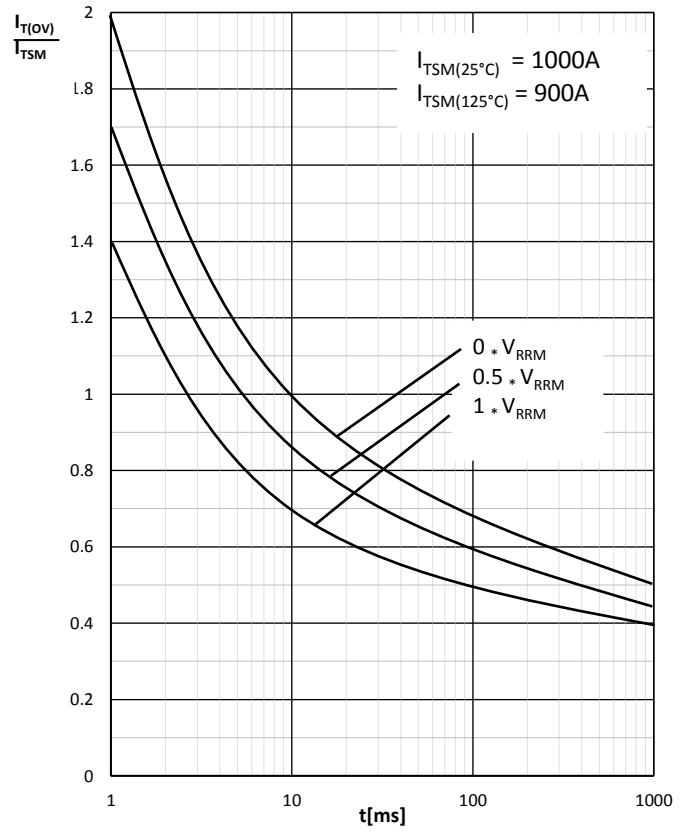
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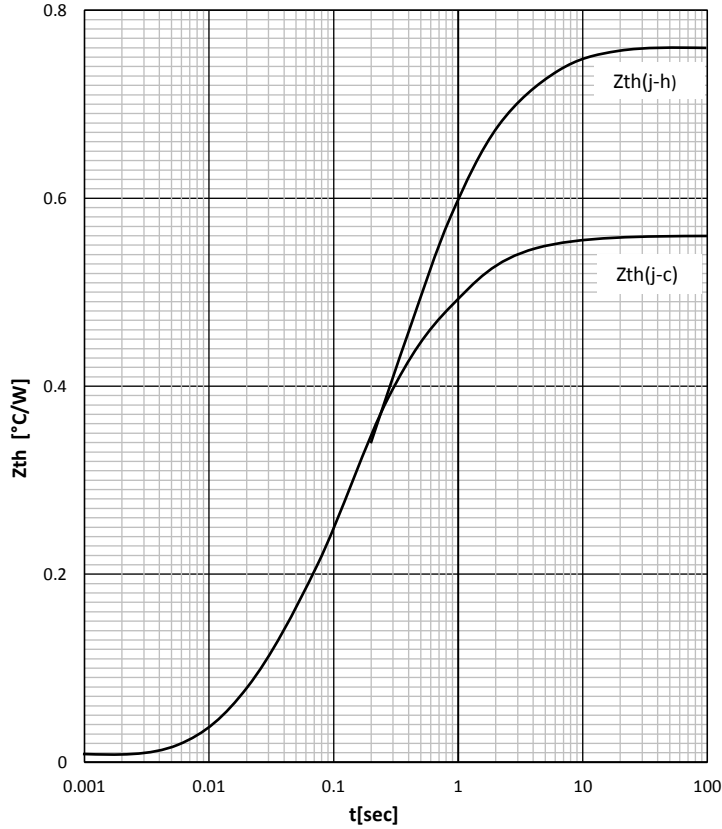
ON STATE CHARACTERISTIC



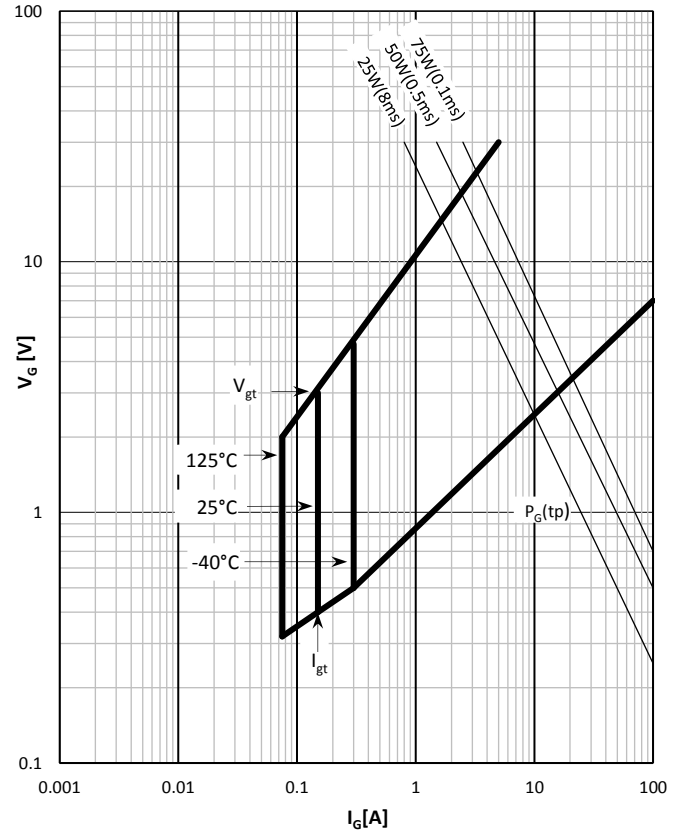
SURGE CHARACTERISTICS



TRANSIENT THERMAL IMPEDANCE



GATE TRIGGER CHARACTERISTICS



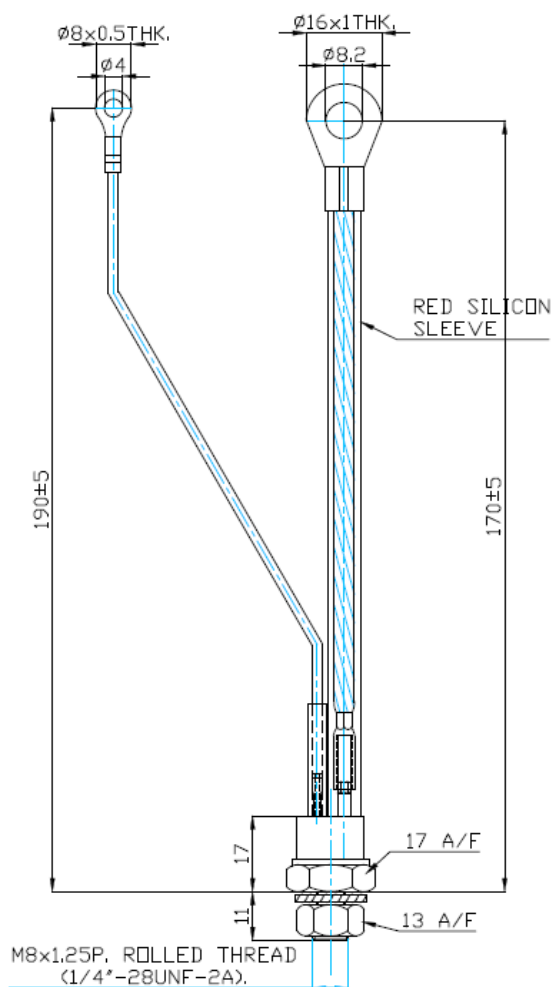
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