



### Key Parameters

$V_{DRM} / V_{RRM}$	= 1800V
$I_{T(AV)}$	= 320A
$I_{TSM}$	= 9200A
$V_{T(TO)}$	= 0.84V
$r_T$	= 0.45m $\Omega$

### Features

- Full blocking capability over wide temperature range
- Heat transfer through aluminium oxide ceramic isolated metal baseplate
- Pressure contacts technology for high reliability
- UL Recognized, file no. E505556

### Applications

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

### Ordering Information


MS	TD	320	K	18
Fixed code	TT- Thyristor- Diode Module	Current Code	Technology K = Pressure Contact Technology	Voltage Code Code X 100 = $V_{DRM}/V_{RRM}$
Order Code MS TD320K18: 1800V $V_{DRM}, V_{RRM}$ , Thyristor-Diode Module				

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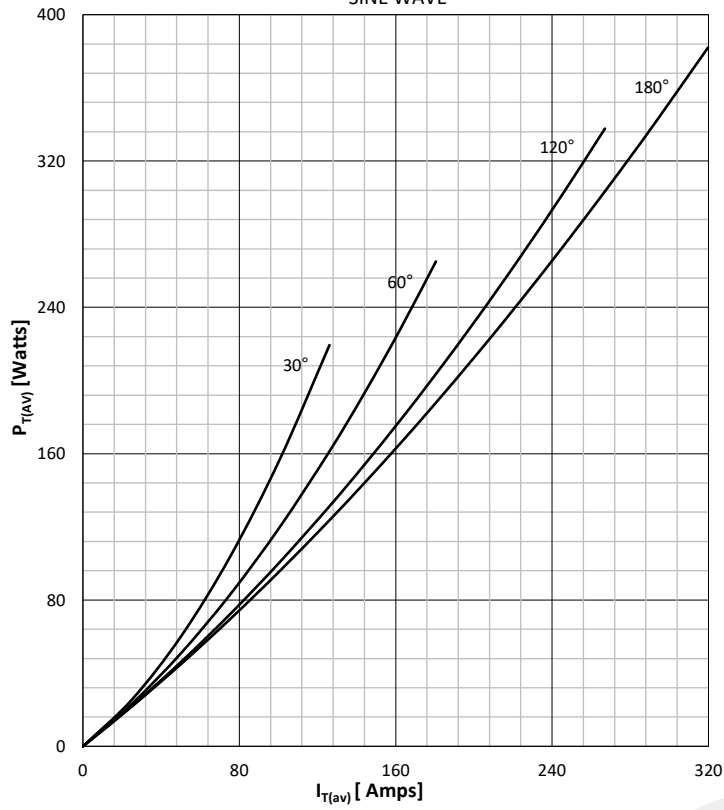
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Symbol	Characteristic	Conditions	T <sub>j</sub> [°C]	Value	Unit
<b>BLOCKING</b>					
V <sub>RRM</sub>	Repetitive peak reverse voltage		125	200 - 1800	V
V <sub>RSM</sub>	Non-repetitive peak reverse voltage		125	300 - 1900	V
V <sub>DRM</sub>	Repetitive peak off-state voltage		125	200 - 1800	V
I <sub>RRM</sub>	Repetitive peak reverse current	V = V <sub>RRM</sub>	125	80	mA
I <sub>DRM</sub>	Repetitive peak off-state current	V = V <sub>DRM</sub>	125	80	mA
<b>CONDUCTING</b>					
I <sub>T(AV)</sub>	Mean on state current	180° sin ,50 Hz, T <sub>c</sub> =85°C		320	A
I <sub>RMS</sub>	RMS on-state current			502	A
I <sub>TSM</sub>	Surge on-state current	Sine wave, 10 ms Without reverse voltage	25	9200	A
			125	8000	A
I <sup>2</sup> t	I <sup>2</sup> t	Sine wave, 10 ms Without reverse voltage	25	423000	A <sup>2</sup> s
			125	320000	A <sup>2</sup> s
V <sub>T</sub>	On-state voltage	On-state current = 600A	25	1.32	V
V <sub>T(TO)</sub>	Threshold voltage		125	0.84	V
r <sub>T</sub>	On-state slope resistance		125	0.45	mΩ
<b>SWITCHING</b>					
di/dt	Critical rate of rise of on-state current		125	250	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	200	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	600	mA
I <sub>L</sub>	Latching current	V <sub>D</sub> =6V	25	1000	mA
<b>MOUNTING</b>					
R <sub>th(j-c)</sub>	Thermal impedance, sin 180°	Junction to case, per arm per module		0.105 0.053	°C/W
R <sub>th(j-c)</sub>	Thermal impedance, rec120°	Junction to case, per arm per module		0.12 0.06	°C/W
R <sub>th(c-h)</sub>	Thermal impedance	Case to heatsink, per arm per module		0.04 0.02	°C/W
T <sub>j</sub>	Max. junction temperature			125	°C
T <sub>stg</sub>	Storage temperature			-40 ... 150	°C
V <sub>ISOL</sub>	Insulation test voltage,RMS	F=50Hz, 1min		3.0	KV
M1	Mounting torque			5 ± 15%	Nm
M2	Terminal connection torque			12 ± 15%	Nm
W	Weight (Approx.)			650	gm
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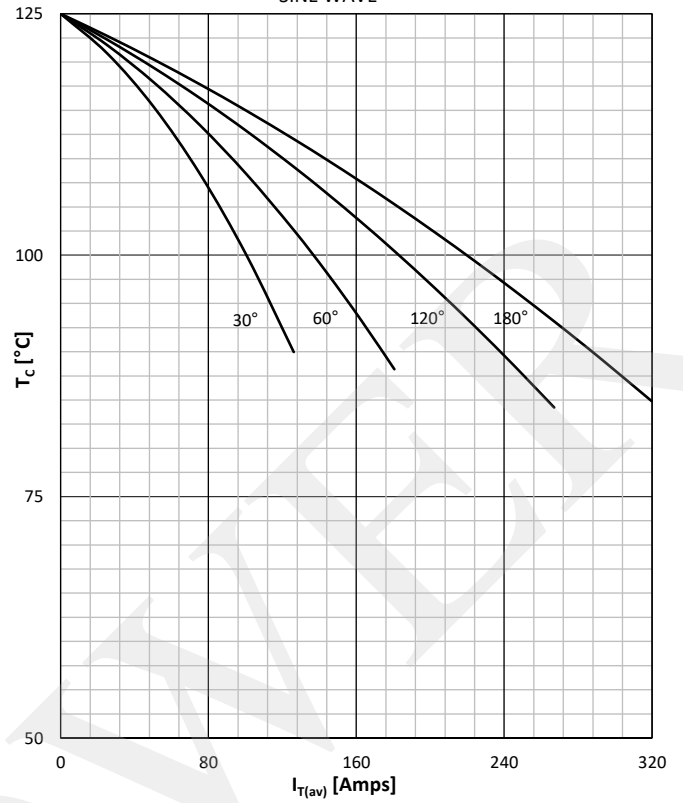
DISSIPATION CHARACTERISTICS

SINE WAVE



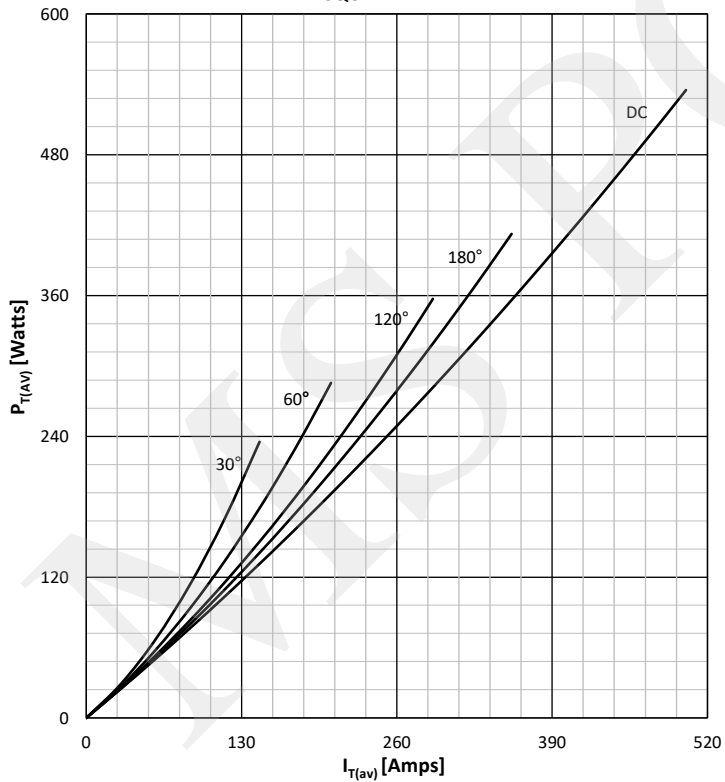
ON STATE CURRENT DERATING CURVE

SINE WAVE



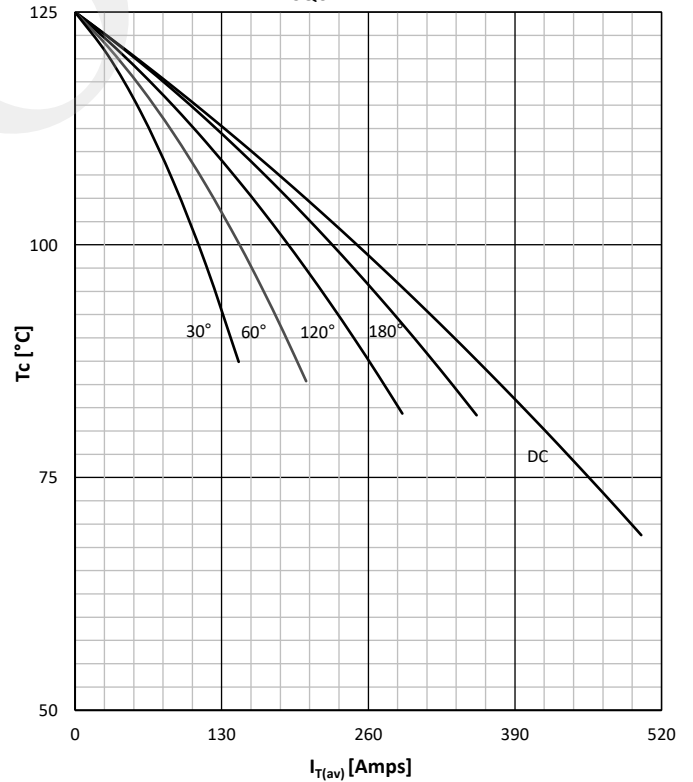
DISSIPATION CHARACTERISTICS

SQUARE WAVE



ON STATE CURRENT DERATING CURVE

SQUARE WAVE



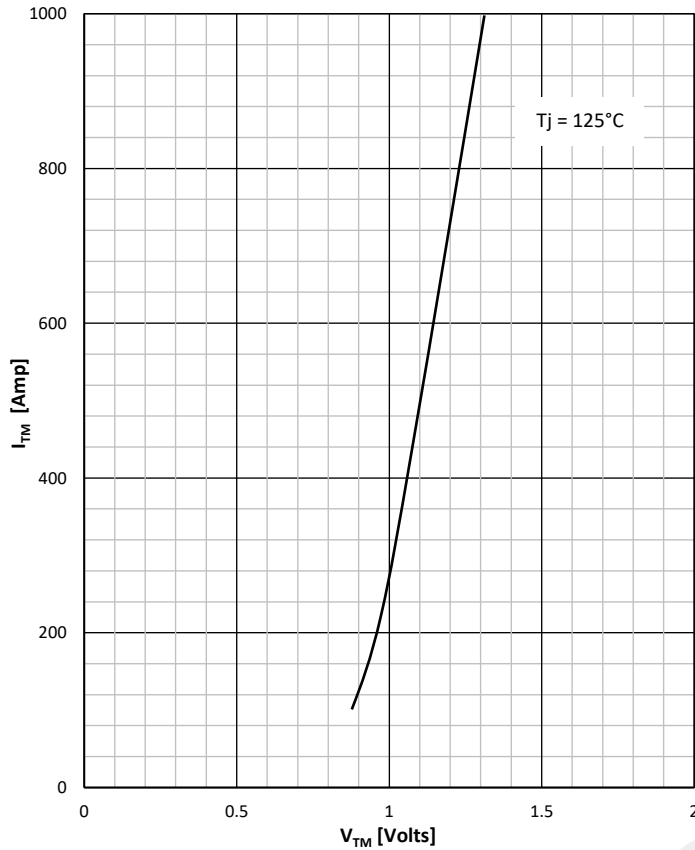
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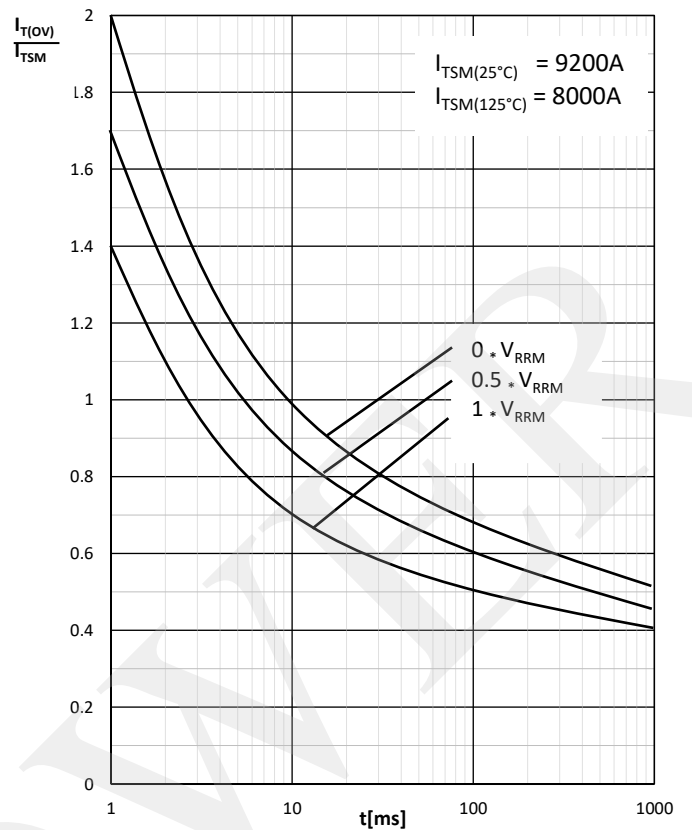
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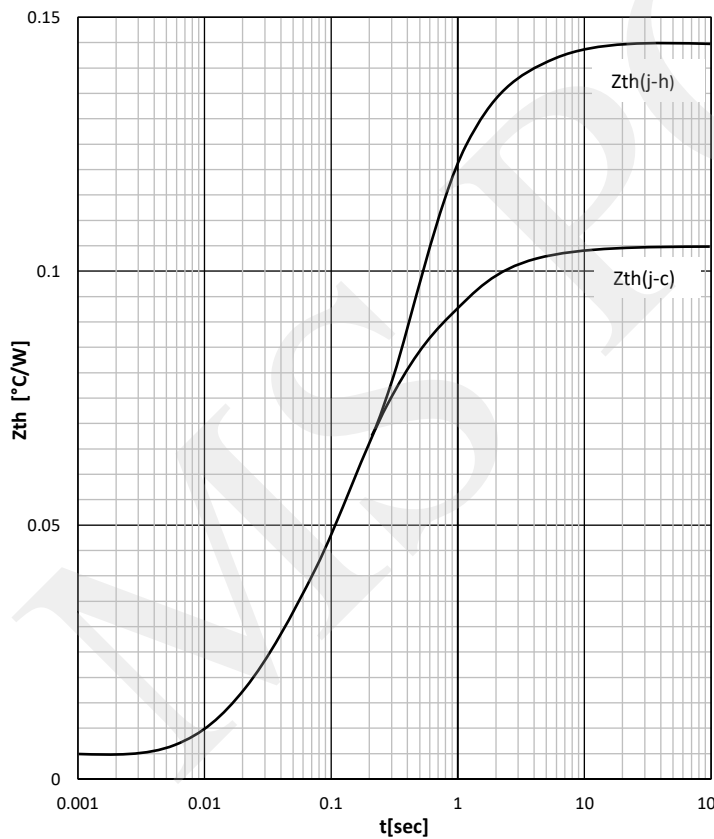
ON -STATE CHARACTERISTIC



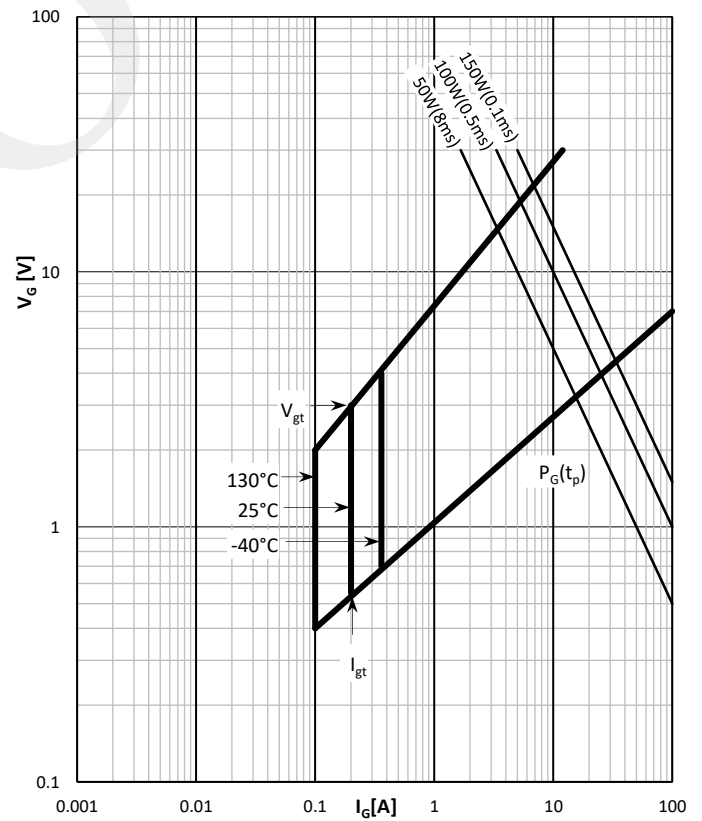
SURGE CHARACTERISTICS



TRANSIENT THERMAL IMPEDANCE, PER ARM



GATE TRIGGER CHARACTERISTICS



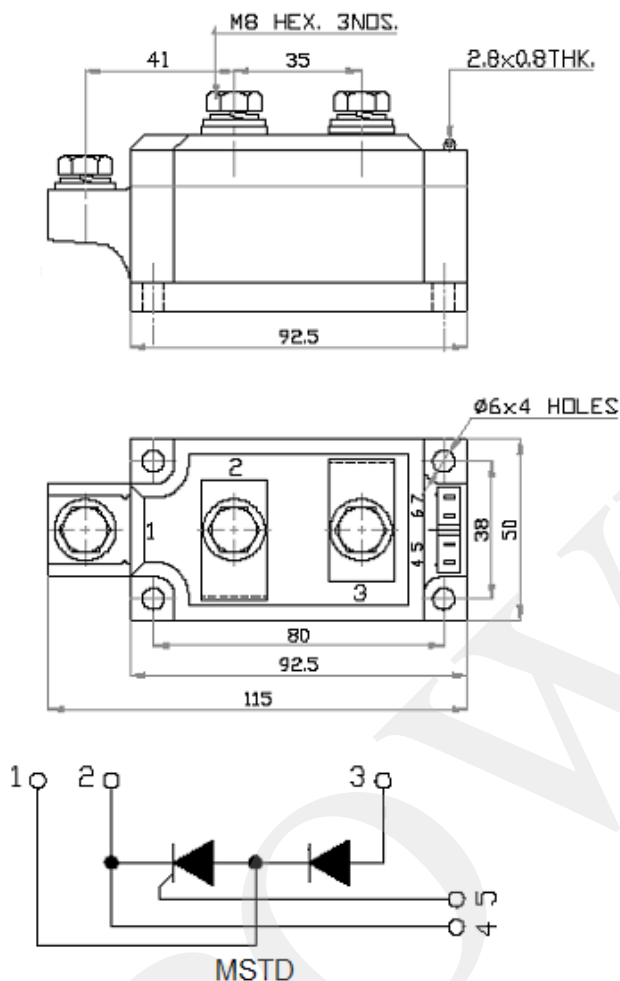
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