

MRH200.16

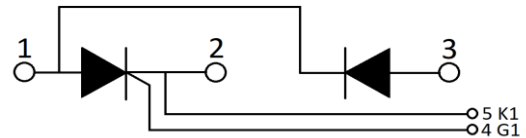
Thyristor/Diode module

Features:

- International standard package
- High surge capability
- Glass passivated chip
- Simple mounting
- UL recognized, file no. E312789

Typical applications:

- Power converters
- Lighting control
- DC motor control and drives
- Heat and temperature control



Symbol	Characteristics	Test Conditions	Value			Unit
			Min	Typ	Max	
$V_{RSM/DSM}$	Non-repetitive reverse/forward blocking voltage	$T_j = 25^\circ\text{C}$			1700	V
$V_{RRM/DRM}$	Repetitive reverse/forward blocking voltage	$T_j = 25^\circ\text{C}$			1600	V
$I_T, I_F(AV)$	On-state/forward average current	180° half sine wave 50Hz $T_c = 85^\circ\text{C}$ (thyristor)			200	A
$I_T, I_F(RMS)$	RMS on-state current	$T_c = 100^\circ\text{C}$ (diode)			275	A
I_{RRM} I_{DRM}	Repetitive peak current	at V_{DRM}/V_{RRM} $T_j = 125^\circ\text{C}$			20	mA
I_{TSM}, I_{FSM}	Surge non repetitive current	Thyristor: 10ms half sine wave $T_j = 45^\circ\text{C}$			5800	A
		Diode: 10ms half sine wave $T_j = 45^\circ\text{C}$			6600	A
$I^2 t$	$I^2 t$ for fusing coordination	Thyristor: $V_R = 60\% V_{RRM}$ $T_j = 45^\circ\text{C}$			184200	A ² s
		Diode: $V_R = 60\% V_{RRM}$ $T_j = 45^\circ\text{C}$			168200	A ² s
V_{TO}	Threshold voltage	$T_j = 125^\circ\text{C}$		0.85		V
r_T	On-state slope resistance	$T_j = 125^\circ\text{C}$			1.50	mΩ
V_{TM}, V_{FM}	Thyristor: Peak on-state voltage	$T = 25^\circ\text{C}$; $I_T = 330\text{A}$			1.72	V
	Diode: Peak forward voltage	$T = 25^\circ\text{C}$; $I_F = 330\text{A}$			1.20	V
dv/dt	Critical rate of rise of off-state voltage	$V_{DM} = 67\% V_{DRM}$, $T_j = 125^\circ\text{C}$, linear voltage rise			1000	V/μs
di/dt	Critical rate of rise of off-state current	$T_j = 125^\circ\text{C}$, Gate source 500mA, $T_r < 0,5\mu\text{s}$ Repetitive			150	A/μs
I_{GT}	Gate trigger current	$V_A = 6\text{V}$, $T_j = 25^\circ\text{C}$			150	mA
V_{GT}	Gate trigger voltage				3	V
I_H	Holding current	$T_j = 25^\circ\text{C}$, $V_D = 6\text{V}$		150	400	mA
I_L	Latching current	$T_j = 25^\circ\text{C}$, $R_G = 33\Omega$		300	1000	mA
$R_{th(j-c)}$	Thermal resistance junction to case	Single side cooled per chip			0.17	°C/W
$R_{th(c-s)}$	Thermal resistance case to sink	Single side cooled per chip			0.10	°C/W
V_{ISO}	Isolation voltage	50Hz, RMS, $t = 1\text{min}$, $I_{ISO} : 1\text{mA (MAX)}$		3000		V
F_M	Mounting torque - copper plate (M6)		4		6	N·m
	Mounting torque - terminal (M6)		4		6	N·m
T_{stg}	Storage Temperature		-40		125	°C
T_j	Operating Temperature		-40		125	°C
W_t	Weight			160		g
Outline	M42					

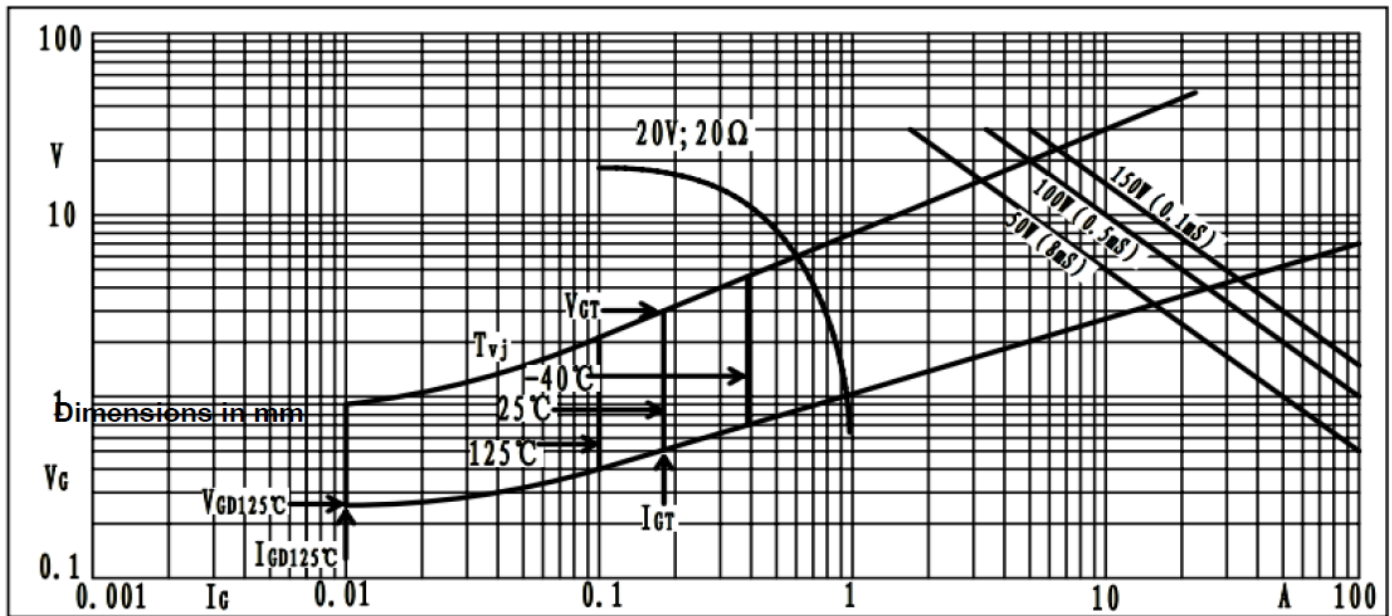


Fig1. Gate trigger characteristics

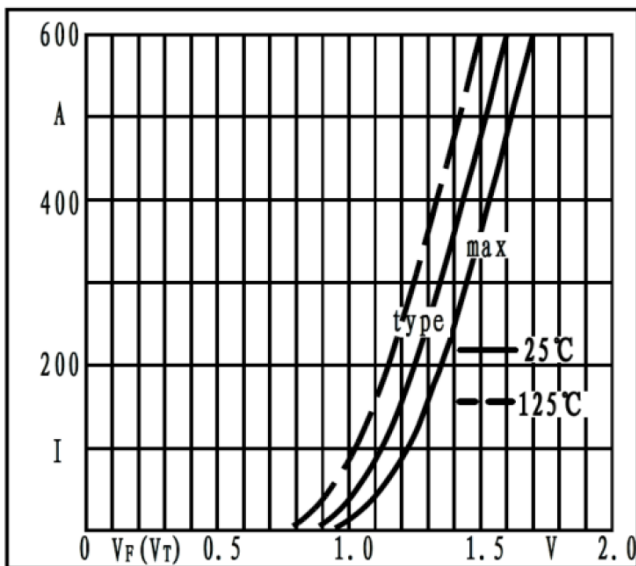


Fig2. Forward characteristics

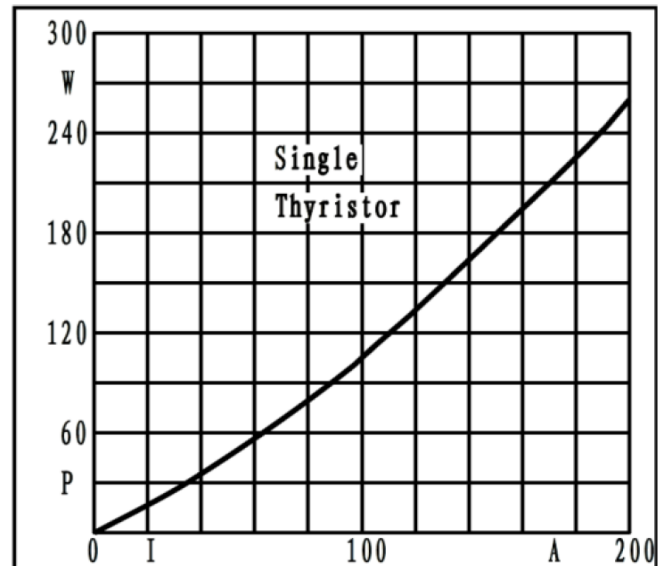


Fig3. Power dissipation



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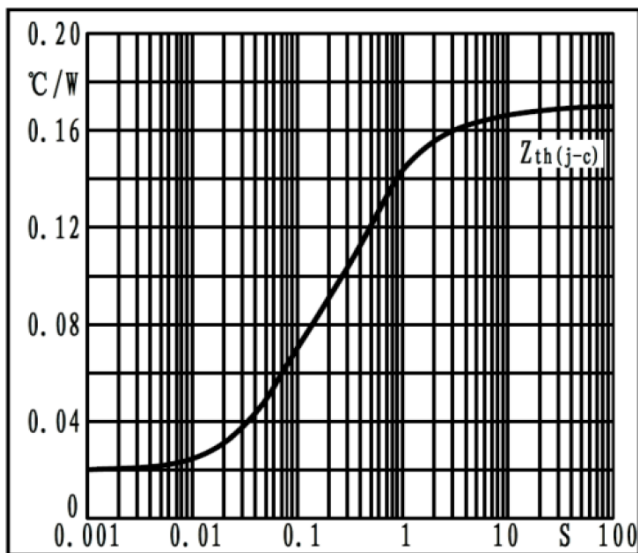


Fig4. Transient thermal impedance

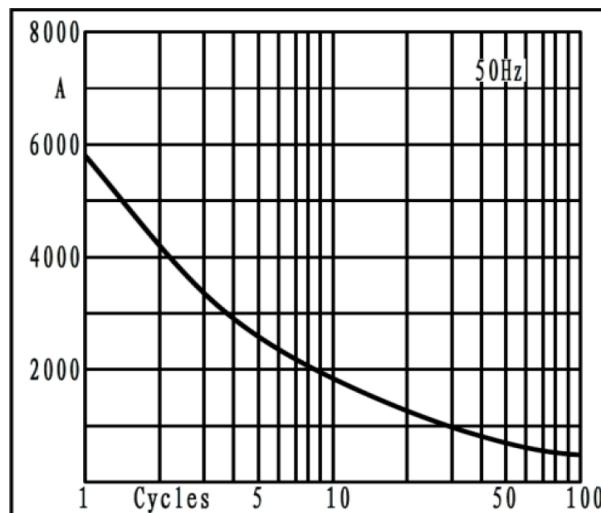


Fig5. Max non-repetitive forward surge current

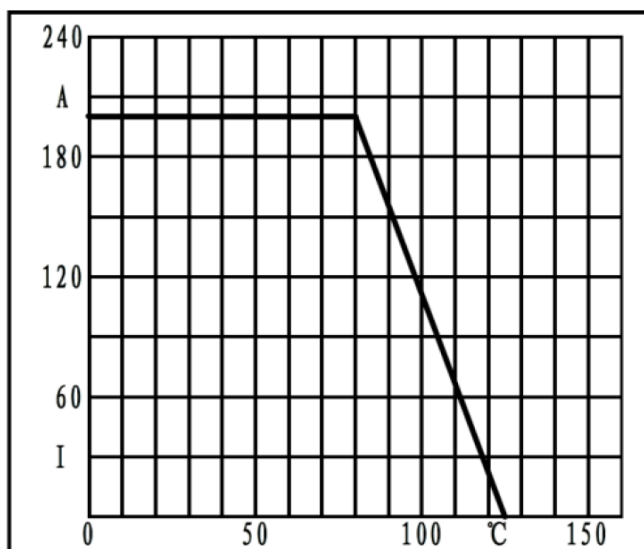
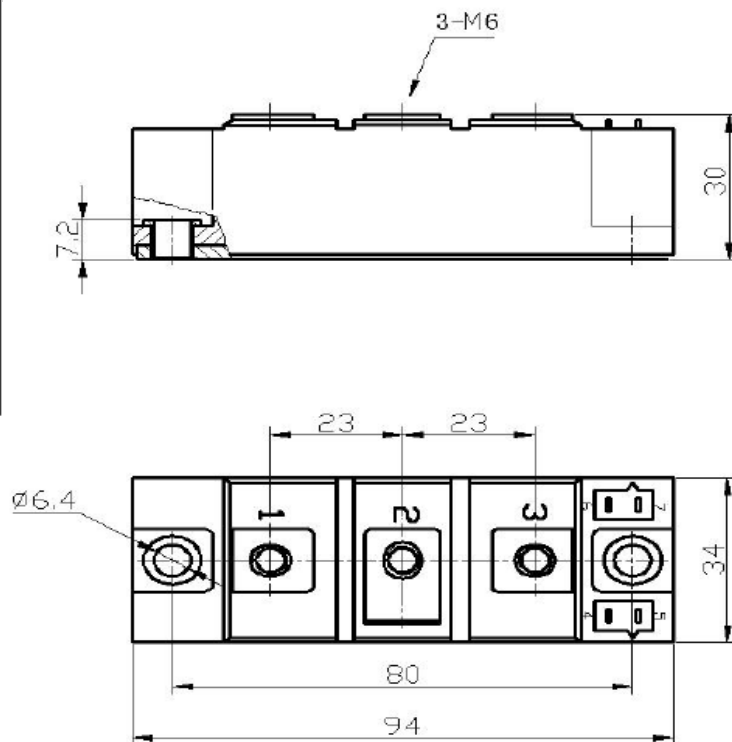


Fig6. Forward current derating curve



(dimensions in mm)

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