

MRT500.16-416F3

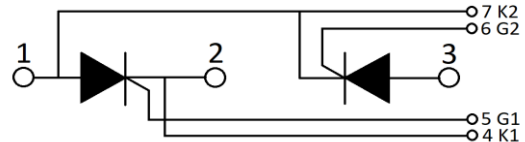
Thyristors module

Features:

- Pressure contact technology with increased power cycling 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
$I_{T(AV)}$	Mean on-state current	180° half sine wave 50Hz			500	A
$I_{T(RMS)}$	RMS on-state current	$T_c = 85^\circ\text{C}$			785	A
I_{RRM} I_{DRM}	Repetitive peak current	at V_{DRM}/V_{RRM} $T_j = 125^\circ\text{C}$			35	mA
I_{TSM}	Surge non repetitive current	10ms half sine wave $V_R = 60\% V_{RRM}$ $T_j = 125^\circ\text{C}$			14.5	kA
$I^2 t$	$I^2 t$ for fusing coordination				1051	kA^2s
V_{TO}	Threshold voltage	$T_j = 125^\circ\text{C}$			0.80	V
r_T	On-state slope resistance	$T_j = 125^\circ\text{C}$			0.34	$\text{m}\Omega$
V_{TM}	Peak on-state voltage	$T = 25^\circ\text{C}; I_T = 1600\text{A}$			1.54	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	$\text{V}/\mu\text{s}$
di/dt	Critical rate of rise of off-state current	$T_j = 125^\circ\text{C}$, Gate source 1,5A, $I_{TM} = 500\text{A}$, $T_r < 0,5\mu\text{s}$ Repetitive			200	$\text{A}/\mu\text{s}$
I_{GT}	Gate trigger current	$V_A = 12\text{V}$, $I_A = 1\text{A}$, $T_j = 25^\circ\text{C}$	30		200	mA
V_{GT}	Gate trigger voltage		1.0		3.0	V
I_H	Holding current		20		200	mA
V_{GD}	Non-trigger gate voltage	$V_{DM} = 67\% V_{DRM}$, $T_j = 125^\circ\text{C}$	0.2			V
$R_{th(j-c)}$	Thermal resistance junction to case	Single side cooled per chip			0.065	$^\circ\text{C}/\text{W}$
$R_{th(c-s)}$	Thermal resistance case to sink	Single side cooled per chip			0.024	$^\circ\text{C}/\text{W}$
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)			6.0		N·m
	Mounting torque - terminal (M10)			12.0		N·m
T_{stg}	Storage Temperature		-40		125	$^\circ\text{C}$
T_j	Operating Temperature		-40		125	$^\circ\text{C}$
W_t	Weight			1430		g
Outline	416F3					

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On-state voltage Vs. peak on-state current

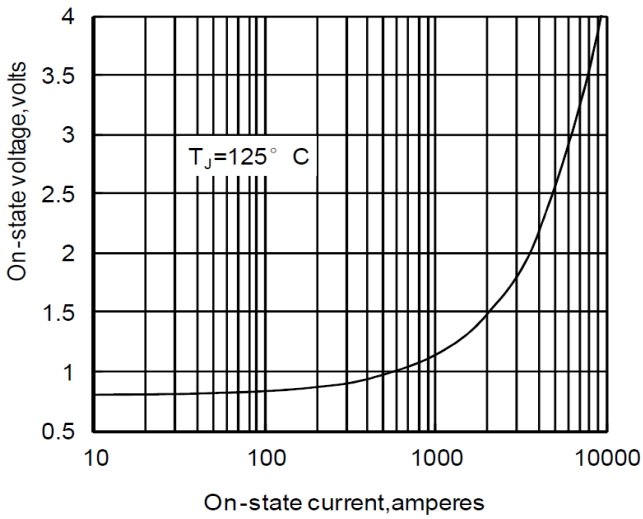


Fig1

Max. junction to case thermal impedance Vs. time

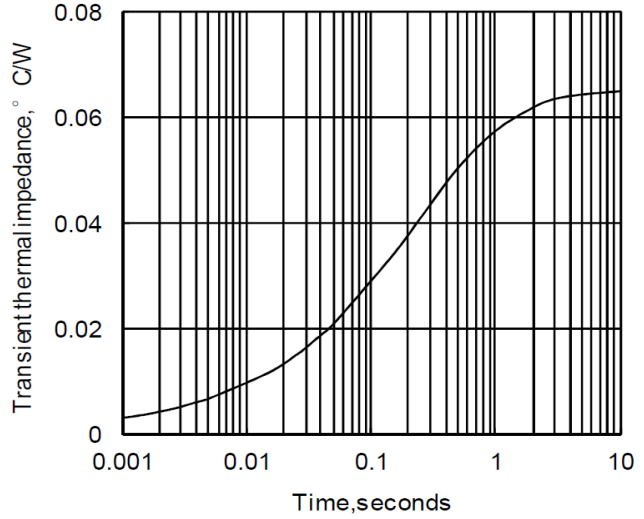


Fig2

Max. power dissipation Vs. mean on-state current

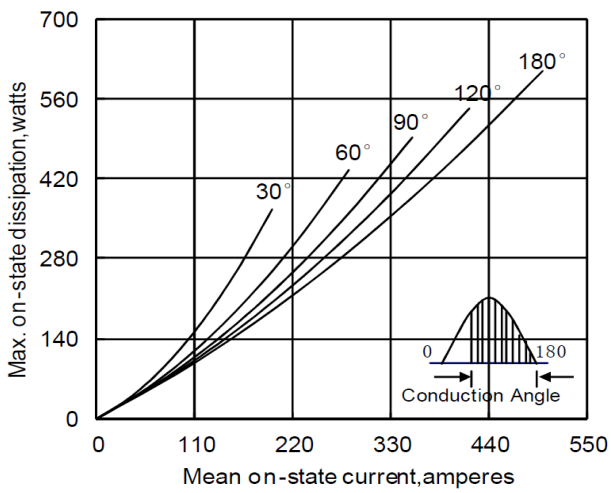


Fig3

Max. case temperature Vs. mean on-state current

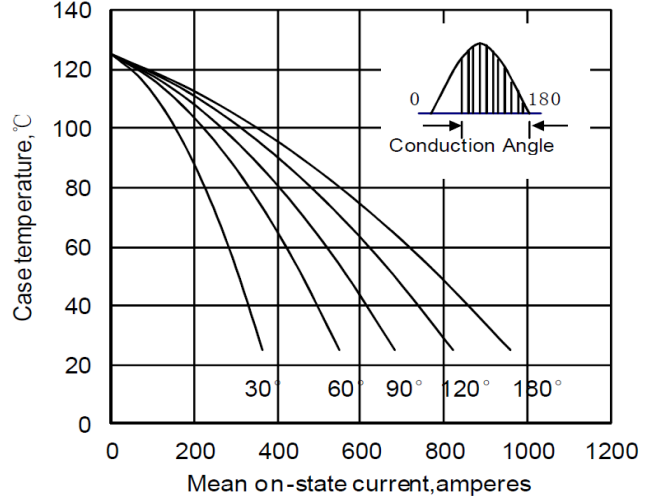


Fig4

Max. power dissipation Vs. mean on-state current

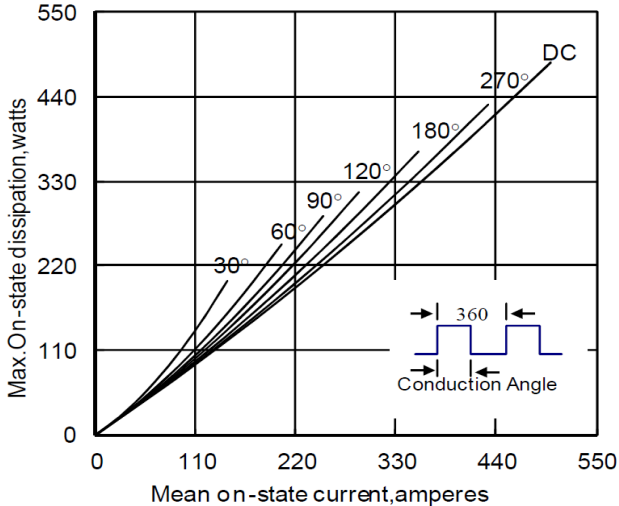


Fig5

Max. case temperature Vs. mean on-state current

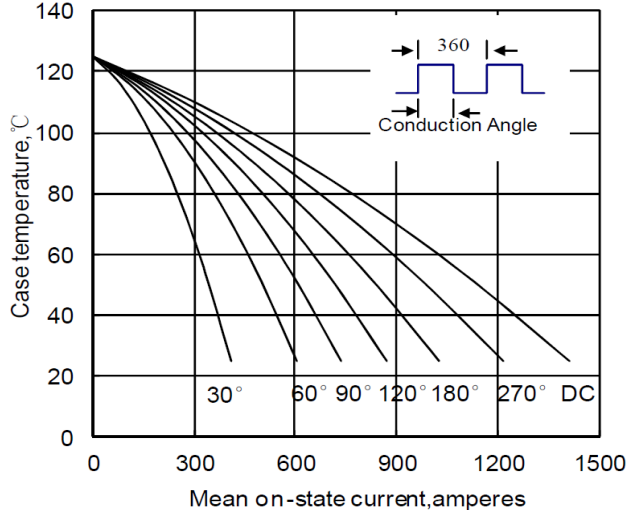


Fig6

MRT500.16-416F3

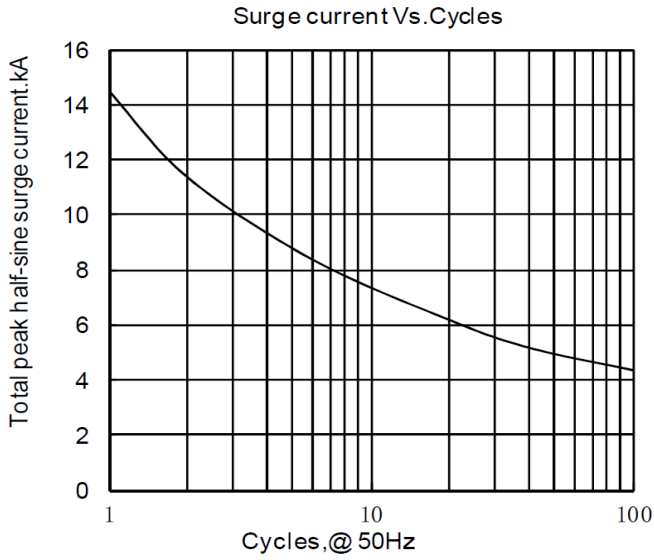


Fig7

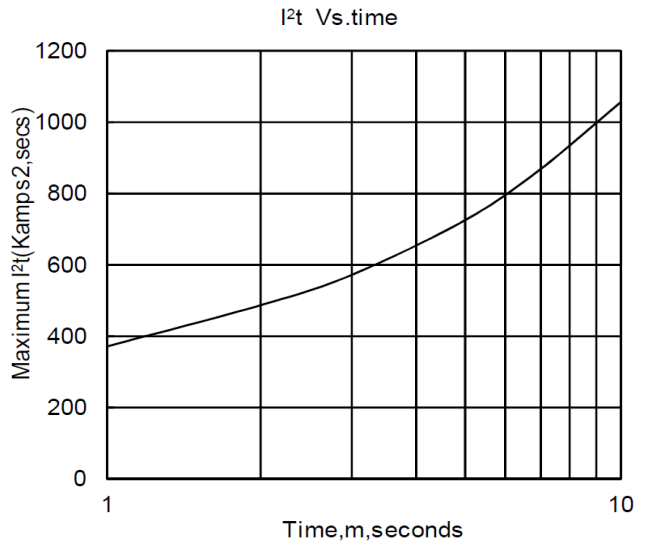


Fig8

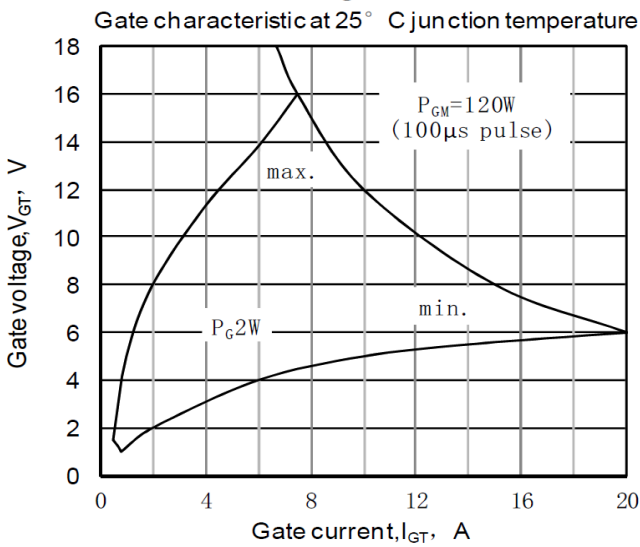


Fig9

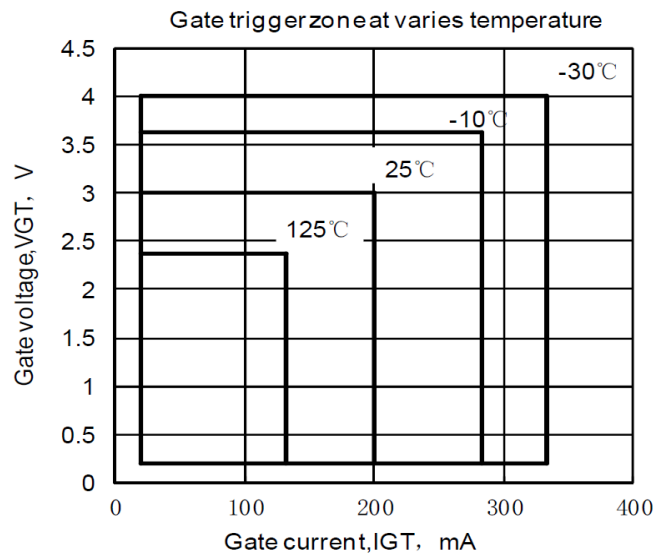
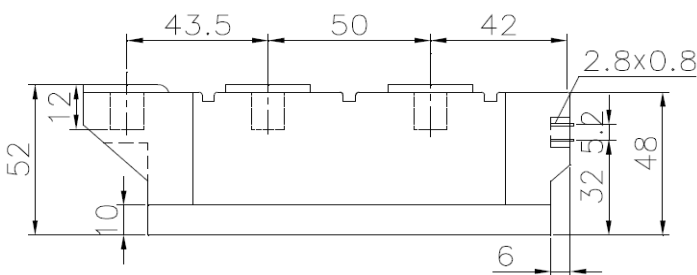
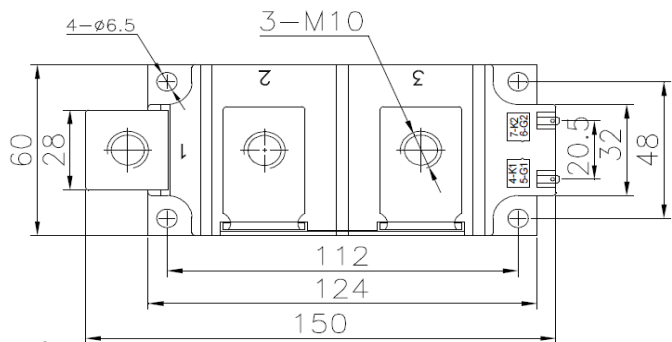


Fig10



(dimensions in mm)



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