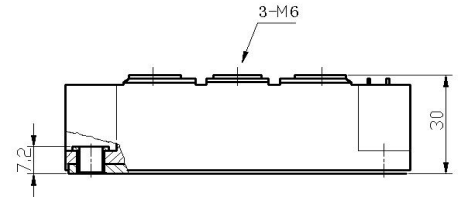


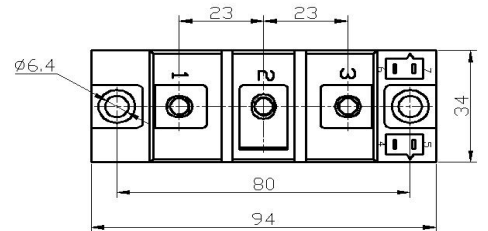
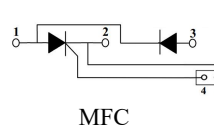
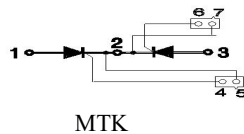
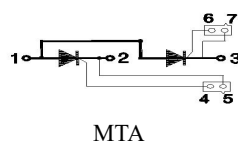
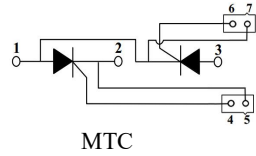
## Feature

- International standard package
- Isolation voltage 2500V~



## Application

- Various rectifier power
- AC/DC motor control
- Heater control
- Light dimmer
- Frequency converters



## Maximum value

Symbol	Parameter	Rating		Unit
		MTC160-12 MTA160-12 MTK160-12 MFC160-12	MTC160-16 MTA160-16 MTK160-16 MFC160-16	
$V_{RRM}$	Repetitive peak reverse voltage	1200	1600	V
$V_{RSM}$	Non-repetitive peak reverse voltage	1300	1700	V
$V_{DRM}$	Off-state Repetitive peak voltage	1200	1600	V

Symbol	Item	Conditions	Ratings	Unit
$I_{T(AV)}, I_{F(AV)}$	Thyristor: on-state average current	Single side heat dissipation, 180°sine half wave, 50Hz, $T_C: 85^\circ\text{C}$	160	A
	Diode: average forward current	Single side heat dissipation, 180°sine half wave, 50Hz, $T_C: 100^\circ\text{C}$		
$I_{T(RMS)}, I_{F(RMS)}$	Thyristor: square root current	Single side heat dissipation, 180°sine half wave, 50Hz, $T_C: 85^\circ\text{C}$	251	A
	Diode: forward square root current	Single side heat dissipation, 180°sine half wave, 50Hz, $T_C: 100^\circ\text{C}$		
$I_{TSM}, I_{FSM}$	Forward surge current	Thyristor: $t=10\text{ms}$ , 50Hz, Sin, $T_{vj}=45^\circ\text{C}$	5400	A
		Diode: $t=10\text{ms}$ , 50Hz, Sin, $T_{vj}=45^\circ\text{C}$	6000	A
$I^2t$	$I^2t$ value	Thyristor: $V_R = 0.6V_{RRM}$ , $T_{vj}=45^\circ\text{C}$	145800	$\text{A}^2\text{S}$
		Diode: $V_R = 0.6V_{RRM}$ , $T_{vj}=45^\circ\text{C}$	180000	$\text{A}^2\text{S}$
$P_{GM}$	Peak gate power		10	W
$P_{G(AV)}$	Average gate power		3	W
$di/dt$	On-state current critical rise rate	$I_{GM}=1.5\text{A}$ , $t_r \leq 0.5\mu\text{s}$ , $T_j=25^\circ\text{C}$	150	$\text{A}/\mu\text{s}$
$V_{ISO}$	Isolation voltage	AC one minute	2500	V
$T_j$	Operating junction temperature		-40 to +125	$^\circ\text{C}$
$T_{jm}$	Rated junction temperature	Thyristor:	125	$^\circ\text{C}$
		Diode:	150	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-40 to +125	$^\circ\text{C}$
$M_d$	Mounting torque(copper plate) M6		$5 \pm 15\%$	N·m
	Mounting torque(connection terminal)M6		$5 \pm 15\%$	N·m

W <sub>t</sub>	Weight		220	g
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### ■ Electrical characteristics

Symbol	Parameter	Test condition	Rating	Unit
I <sub>DRM</sub>	Peak off-state repetitive current	V <sub>D</sub> =V <sub>DRM</sub> , sine half wave, T <sub>jm</sub>	30	mA
I <sub>RRM</sub>	Peak reverse repetitive current	Thyristor: V <sub>R</sub> =V <sub>RRM</sub> , sine half wave, T <sub>jm</sub>	30	mA
		Diode: V <sub>R</sub> =V <sub>RRM</sub> , sine half wave, T <sub>jm</sub>	10	mA
V <sub>TM</sub> , V <sub>FM</sub>	Thyristor: on-state peak voltage	I <sub>TM</sub> =480A, T <sub>j</sub> =25°C	1.7	V
	Diode: Peak forward voltage	I <sub>FM</sub> =480A, T <sub>j</sub> =25°C	1.2	V
V <sub>GT</sub>	Gate trigger voltage	T <sub>j</sub> =25°C, I <sub>T</sub> =1A, V <sub>D</sub> =12V	0.7-1.8	V
I <sub>GT</sub>	Gate trigger current	T <sub>j</sub> =25°C, I <sub>T</sub> =1A, V <sub>D</sub> =12V	20-150	mA
V <sub>GD</sub>	Gate non-trigger voltage	T <sub>j</sub> =125°C, V <sub>D</sub> =2/3V <sub>DRM</sub>	0.25	V
I <sub>GD</sub>	Gate non-trigger current	T <sub>j</sub> =125°C, V <sub>D</sub> =2/3V <sub>DRM</sub>	10	mA
dv/dt	On-state voltage critical rise rate	T <sub>j</sub> =125°C, V <sub>D</sub> =2/3V <sub>DRM</sub>	500	V/μs
I <sub>H</sub>	Holding current	T <sub>j</sub> =25°C	20-150	mA
I <sub>L</sub>	Latching current	T <sub>j</sub> =25°C	100-400	mA
R <sub>th(j-c)</sub>	Thermal resistance (junction-case)	Thyristor: Single-side heat dissipation, sine half wave	0.21	°C/W
		Diode: Single-side heat dissipation, sine half wave	0.23	°C/W

### Performance Curves

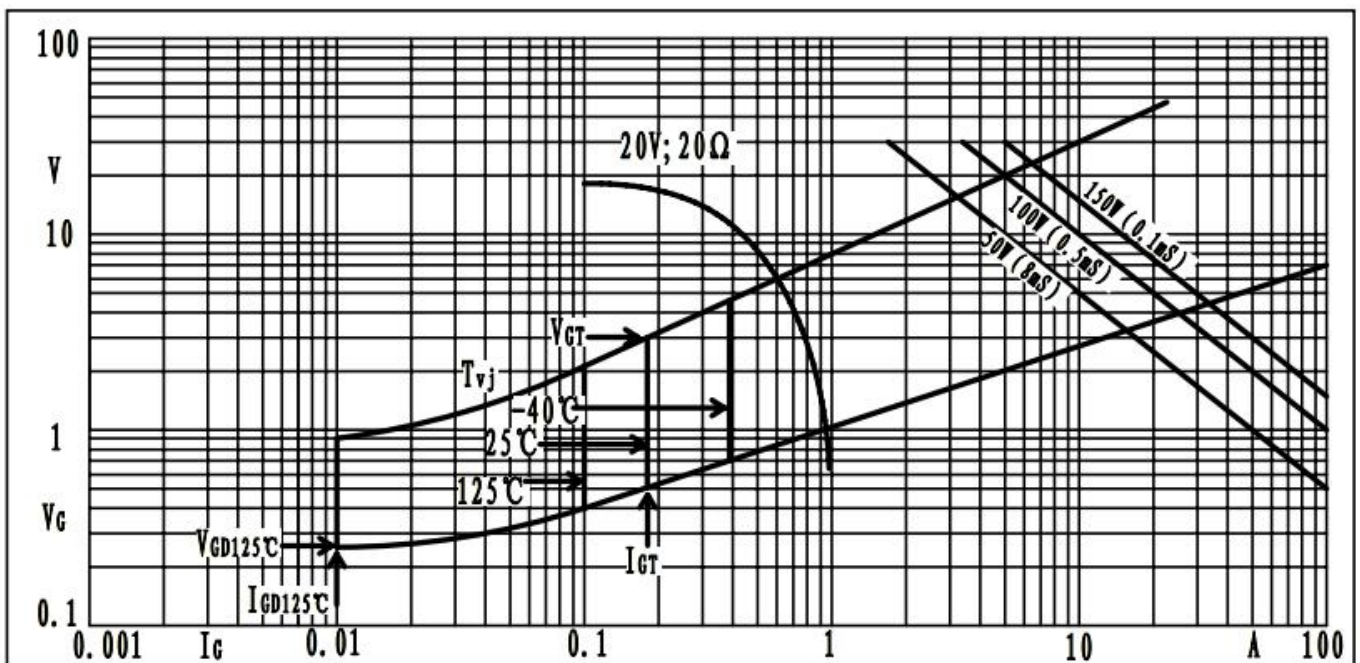


Fig1. Gate trigger characteristics

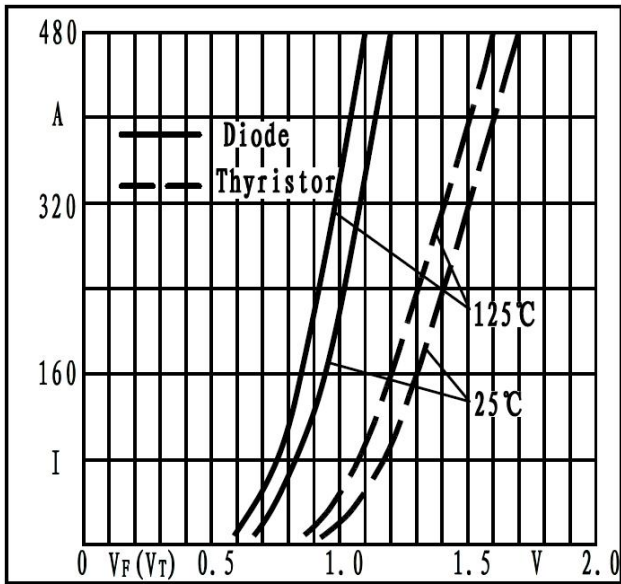


Fig2. Forward characteristics

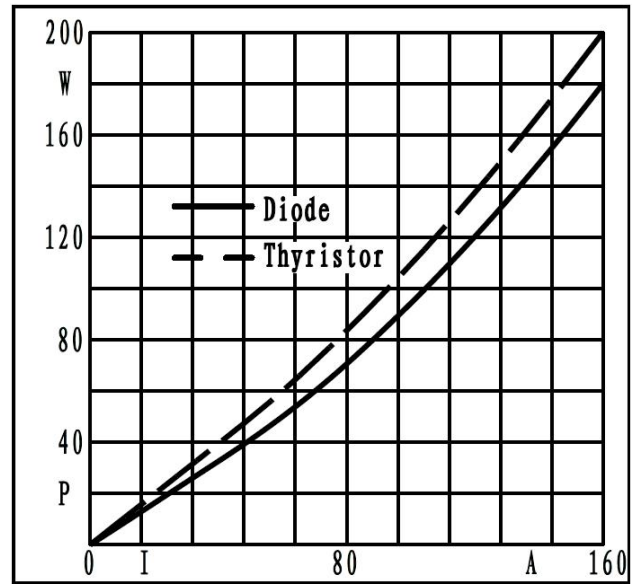


Fig3. Power dissipation

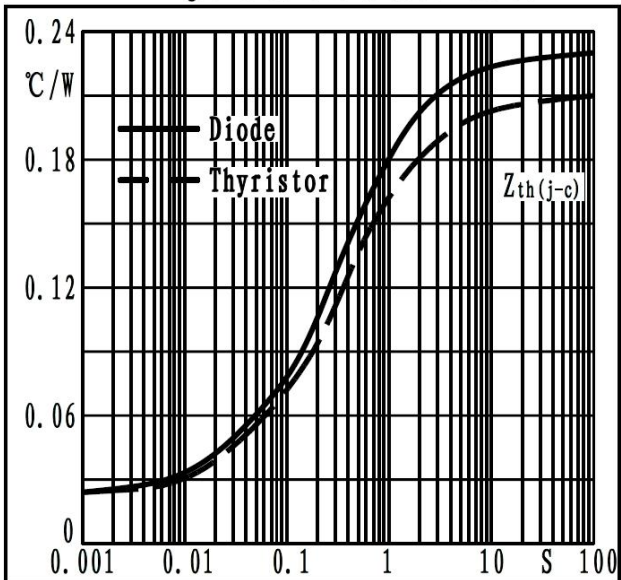


Fig4. Transient thermal impedance

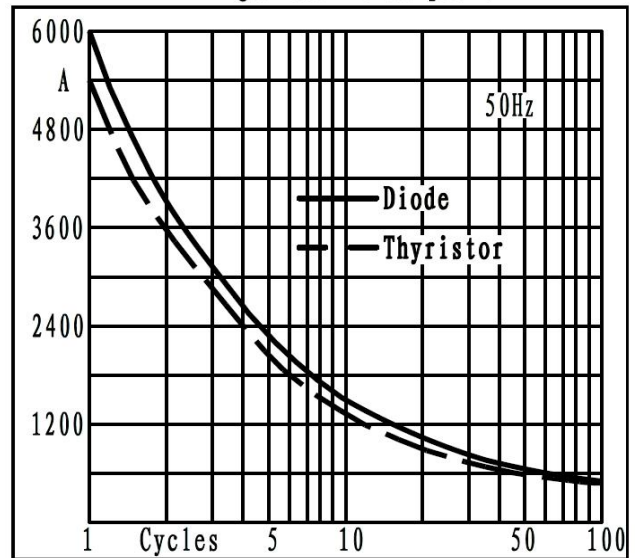


Fig5. Max non-repetitive forward surge current

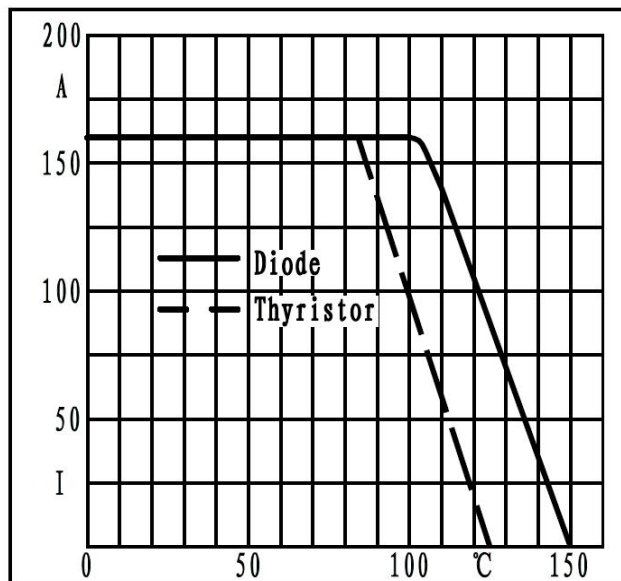


Fig6. Forward current derating curve