

## Thyristor Module

Reverse Voltage - 800V to 1800V

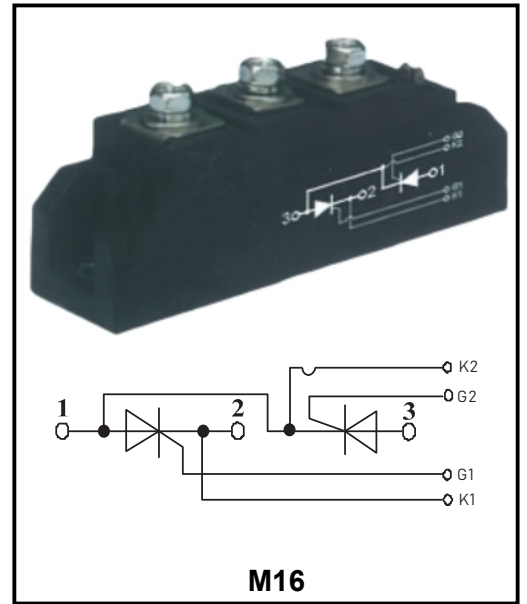
Forward Current - 110A

### Applications

- ◆ Power Converters
- ◆ Lighting Control
- ◆ DC Motor Control and Drives
- ◆ Heat and temperature control

### Features

- ◆ International standard package
- ◆ High Surge Capability
- ◆ Glass passivated chip
- ◆ Simple Mounting
- ◆ Heat transfer through aluminum oxide DBC ceramic isolated metal baseplate
- ◆ UL recognized applied for file no. E360040



### Maximum Ratings

Conditions	Symbol	MTC110A-08	MTC110A-12	MTC110A-16	MTC110A-18	Units
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	800	1200	1600	1800	V
Maximum RMS voltage	$V_{RMS}$	900	1300	1700	1900	V
Maximum DC Blocking Voltage	$V_{DC}$	800	1200	1600	1800	V
Sine 180°;Tc=85°C	$I_{TAV}$	110				A
$T_{VJ}=45^{\circ}C$ t=10ms, sine $T_{VJ}=125^{\circ}C$ t=10ms, sine	$I_{TSM}$	2250 1900				A
$T_{VJ}=45^{\circ}C$ t=10ms, sine $T_{VJ}=125^{\circ}C$ t=10ms, sine	$I^2t$	25000 18000				A <sup>2</sup> S
a.c.50HZ;r.m.s.;1min	$Visol$	3000				V
	$Tvj$	-40 to 130				°C
	$Tstg$	-40 to 125				°C
To terminals(M5)	$Mt$	3±15%				Nm
To heatsink(M6)	$Ms$	5±15%				Nm
$T_{VJ}=T_{VJM}$ , 2/3 $V_{DRM}$ , $I_G=500mA$ $Tr<0.5\mu s$ , $tp>6\mu s$	$di/dt$	150				A/ $\mu s$
$J=T_{VJM}$ ,2/3 $V_{DRM}$ , linear voltage ris	$dv/dt$	1000				V/ $\mu s$
Maximum allowable acceleration	$a$	50				m/ <sup>2</sup> s
Module(Approximately)	Weight	100				g
Con t.;per thyristor / per module	$R_{th(j-c)}$	0.28/0.14				°C/W
per thyristor / per module	$R_{th(c-s)}$	0.2/0.1				°C/W

**Electrical Characteristics**

Conditions	Symbol	Values			Units
		Min.	Typ.	Max.	
$T=25^{\circ}\text{C}$ $T_{TM}=300\text{A}$	$V_{TM}$		1.65		V
$T_{VJ}=T_{VJM}$ , $V_R = V_{RRM}$ , $V_D = V_{DRM}$	$I_{RRM}/I_{DRM}$		20		mA
For power-loss calculations only ( $T_J=125^{\circ}\text{C}$ )	$V_{TO}$		0.9		V
$T_{VJ}=T_{VJM}$	$r_T$		2		m $\Omega$
$T_{VJ}=25^{\circ}\text{C}$ , $V_D=6\text{V}$	$V_{GT}$		3		V
$T_{VJ}=25^{\circ}\text{C}$ , $V_D=6\text{V}$	$I_{GT}$		100		mA
$T_{VJ}=125^{\circ}\text{C}$ , $V_D=2/3 V_{DRM}$	$V_{GD}$		0.25		V
$T_{VJ}=125^{\circ}\text{C}$ , $V_D=2/3 V_{DRM}$	$I_{GD}$		6		mA
$T_{VJ}=25^{\circ}\text{C}$ , $R_G=33\ \Omega$	$I_L$		30	100	mA
$T_{VJ}=25^{\circ}\text{C}$ , $V_D=6\text{V}$	$I_H$		30	100	mA
$T_{VJ}=25^{\circ}\text{C}$ , $I_G=1\text{A}$ , $di_G/dt=1\text{A}/\mu\text{s}$	$t_{gd}$		1		$\mu\text{s}$
$T_{VJ}=T_{VJM}$	$t_q$		100		$\mu\text{s}$

Performance Curves

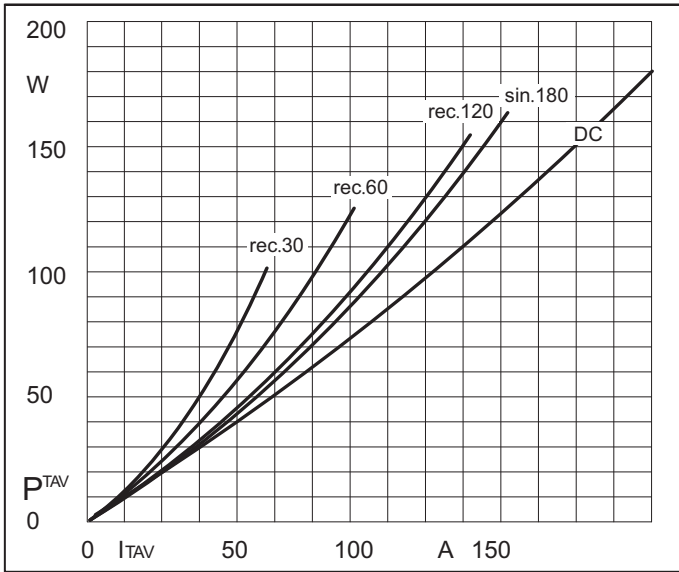


Fig1. Power dissipation

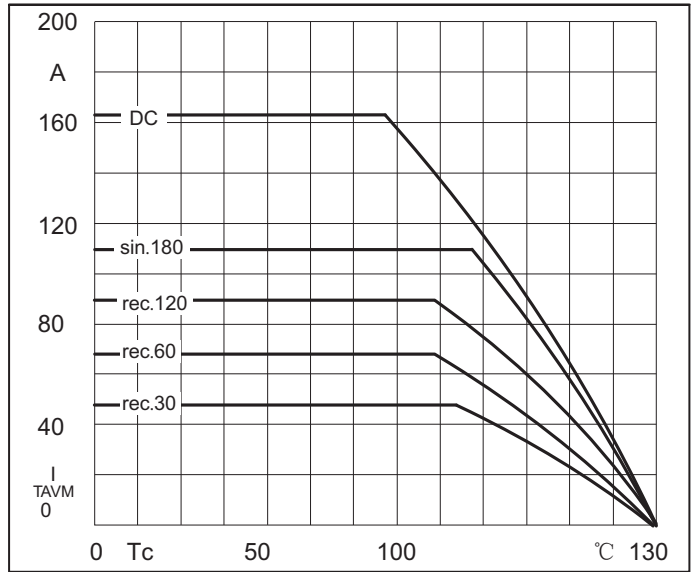


Fig2. Forward Current Derating Curve

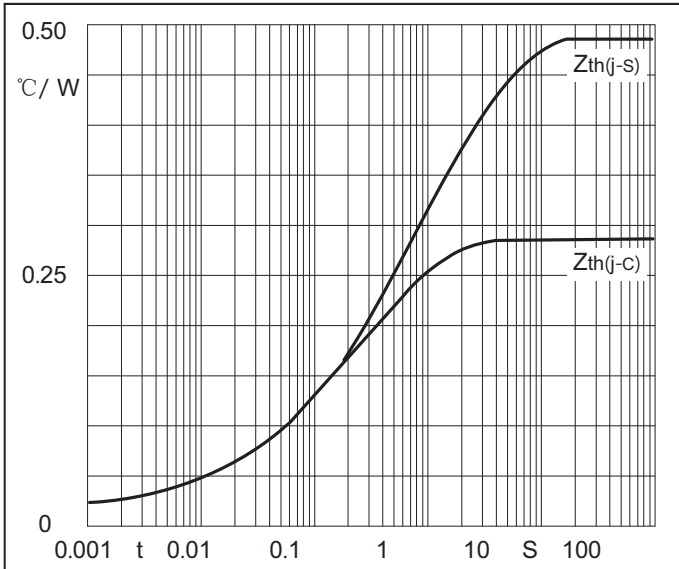


Fig3. Transient thermal impedance

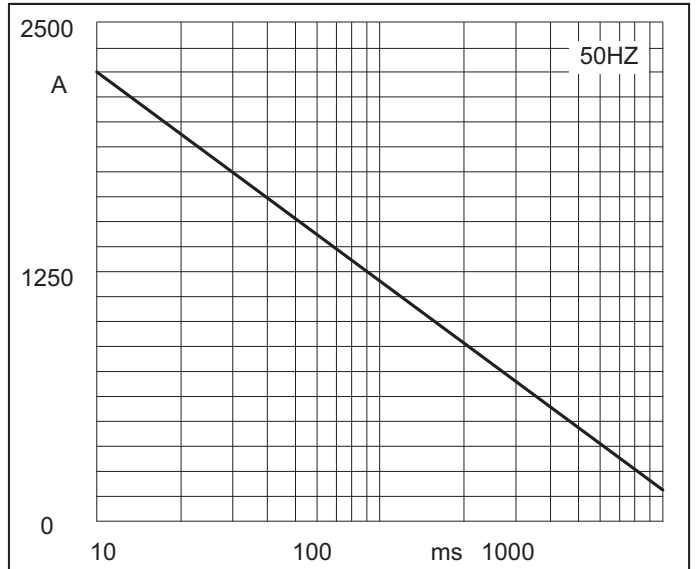


Fig4. Max Non-Repetitive Forward Surge Current

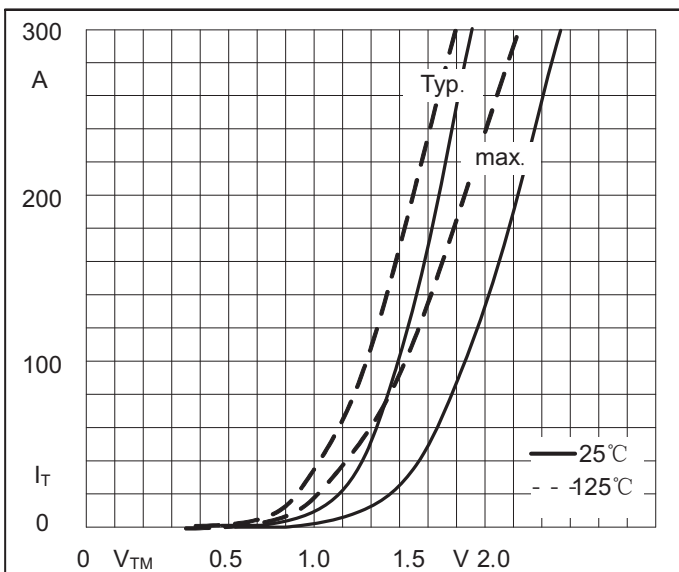


Fig5. Forward Characteristics

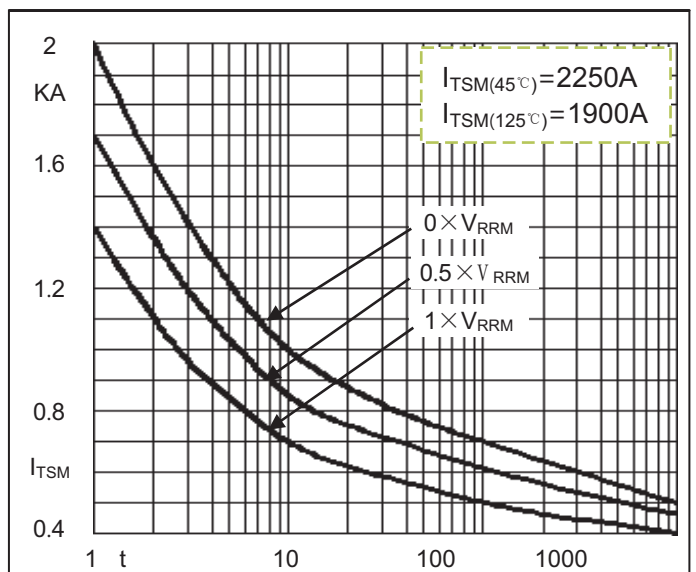
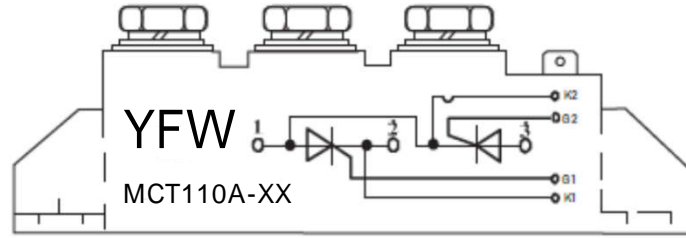


Fig6. Surge overload current vs. Cycles

Marking Diagram



Ordering information

Model name	Package	Unit Weight	Base Quantity
MCT110A-XX	M16	-	10pcs/ Box

Package Dimensions

M16

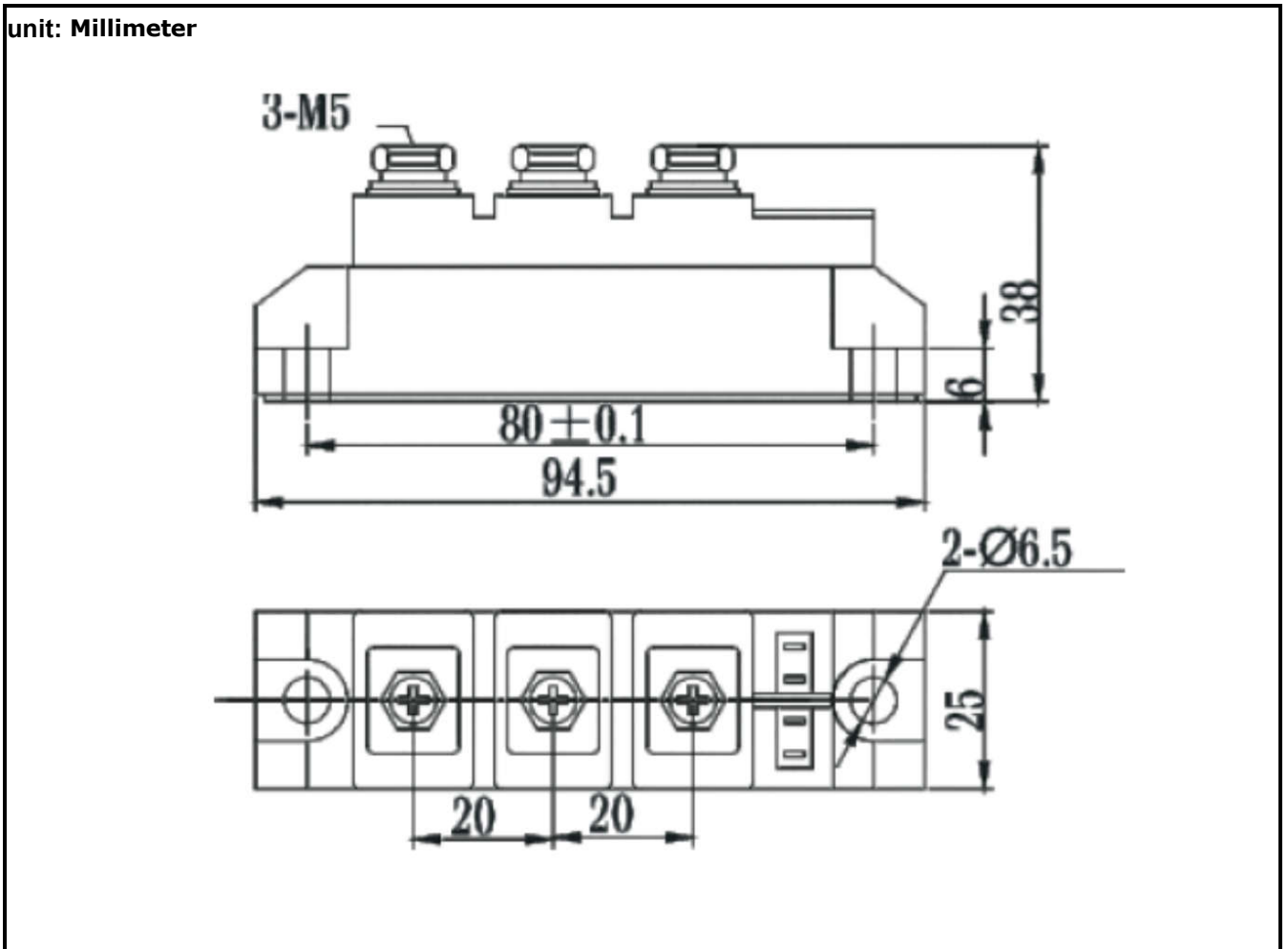


Fig5

## Disclaimer

The information presented in this document is for reference only. GuangDong Youfeng Microelectronics Co.,Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise. The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), YFW or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale. This publication supersedes & replaces all information previously supplied. For additional information, please visit our website <https://www.yfwdiode.com>, or consult YFW sales office for further assistance.