

Thyristor Module

V_{RRM} - 800 to 1800V

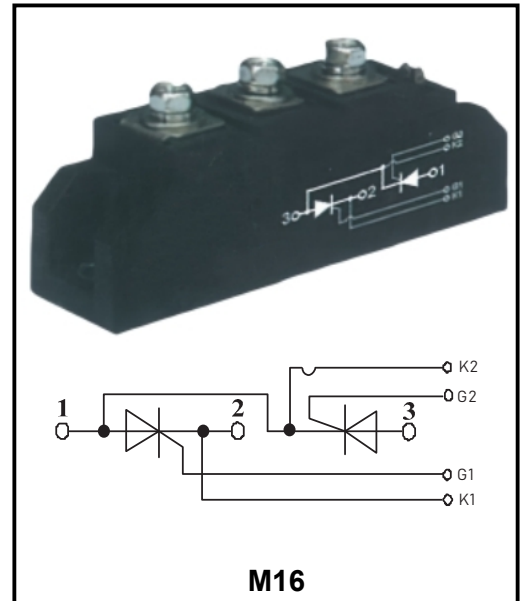
I_{TAV} - 110A

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	MTC110-08	MTC110-12	MTC110-16	MTC110-18	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°; $T_c=85^{\circ}C$	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 ² 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} , $I_G=500mA$ $Tr<0.5\mu s$, $t_p>6\mu s$	di/dt	150				A/ μs
$J=T_{VJM}$, 2/3 V_{DRM} , linear voltage ris	dv/dt	1000				V/ μs
Maximum allowable acceleration	a	50				m/s ²
Module(Approximately)	Weight	100				g
Con t.;per thyristor / per module	$Rth(j-c)$	0.28/0.14				°C/W
per thyristor / per module	$Rth(c-s)$	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 Ω
$T_{VJ}=25^{\circ}\text{C}$, $V_D=6\text{V}$	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			μs
$T_{VJ}=T_{VJM}$	t_q	100			μs

Performance Curves

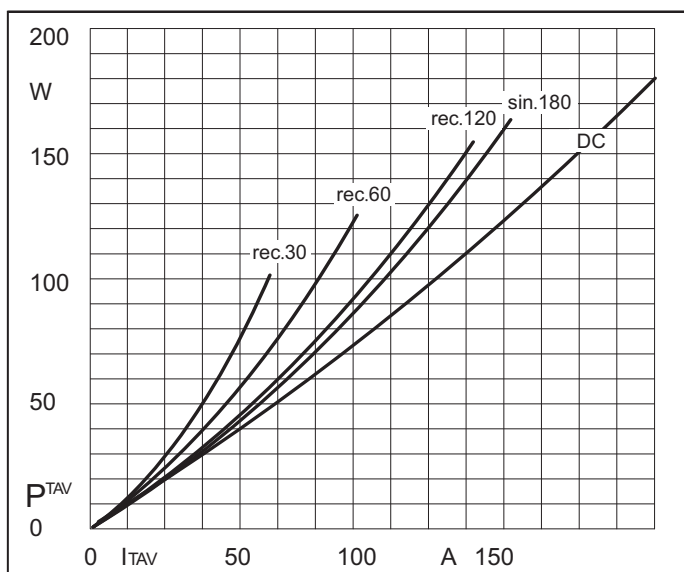


Fig1. Power dissipation

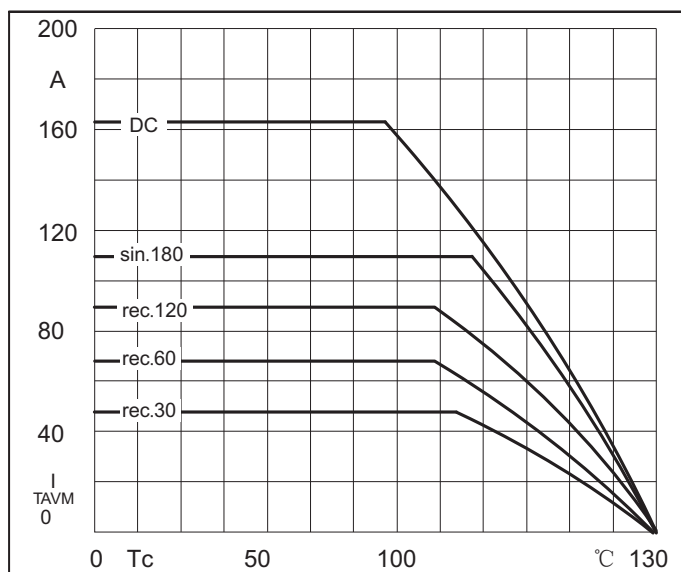


Fig2. Forward Current Derating Curve

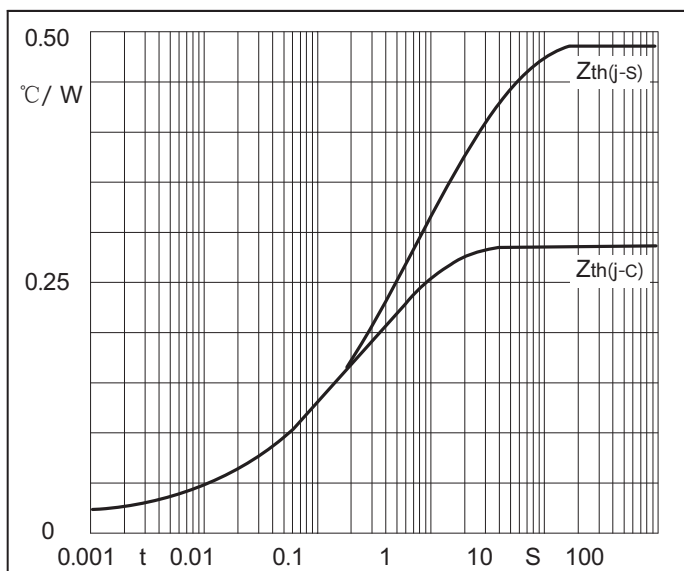


Fig3. Transient thermal impedance

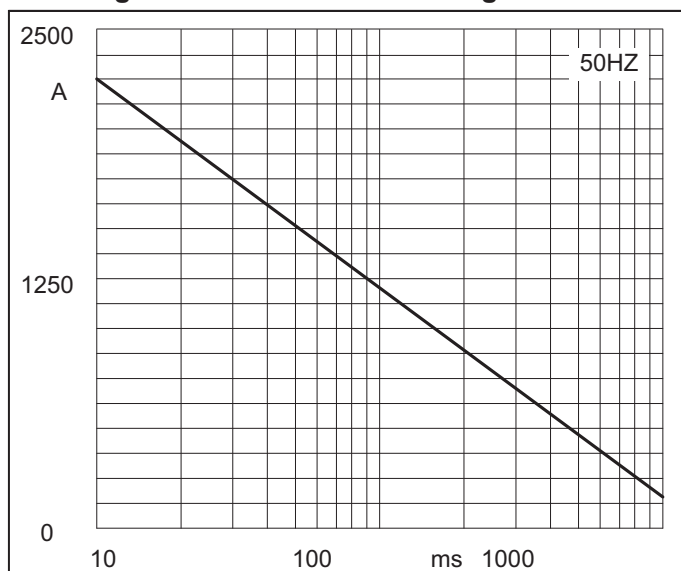


Fig4. Max Non-Repetitive Forward Surge Current

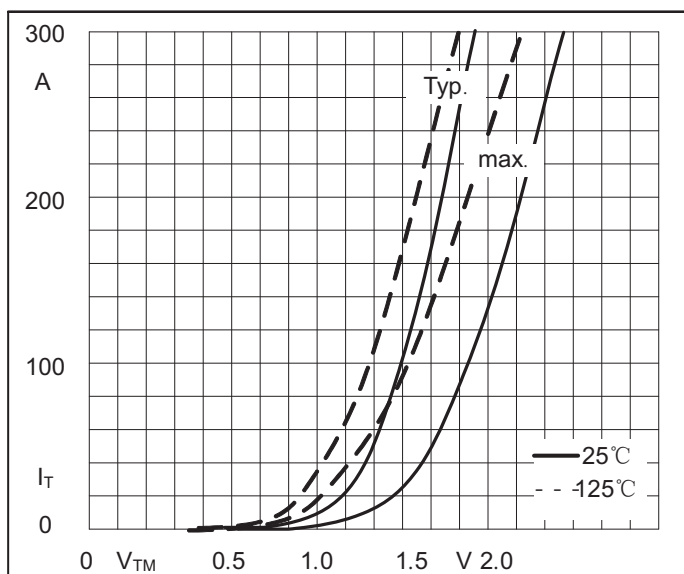


Fig5. Forward Characteristics

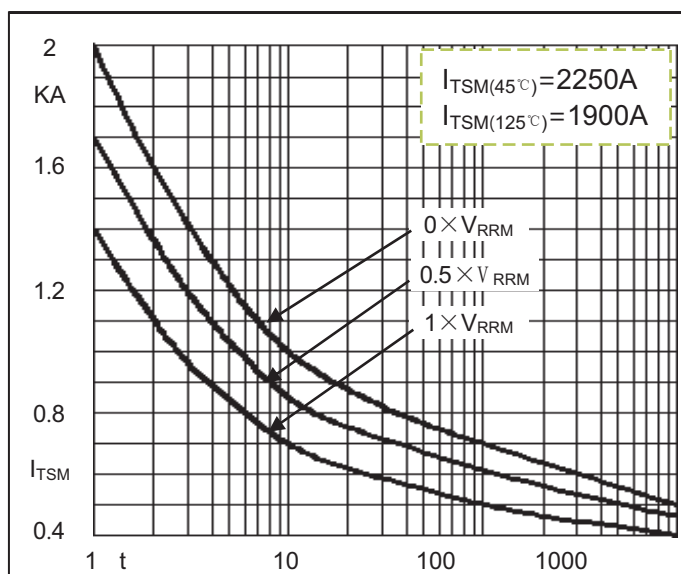
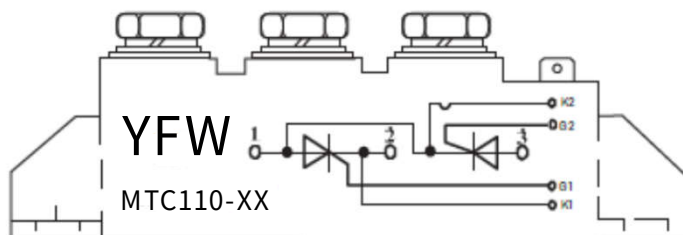


Fig6. Surge overload current vs. Cycles

Marking Diagram



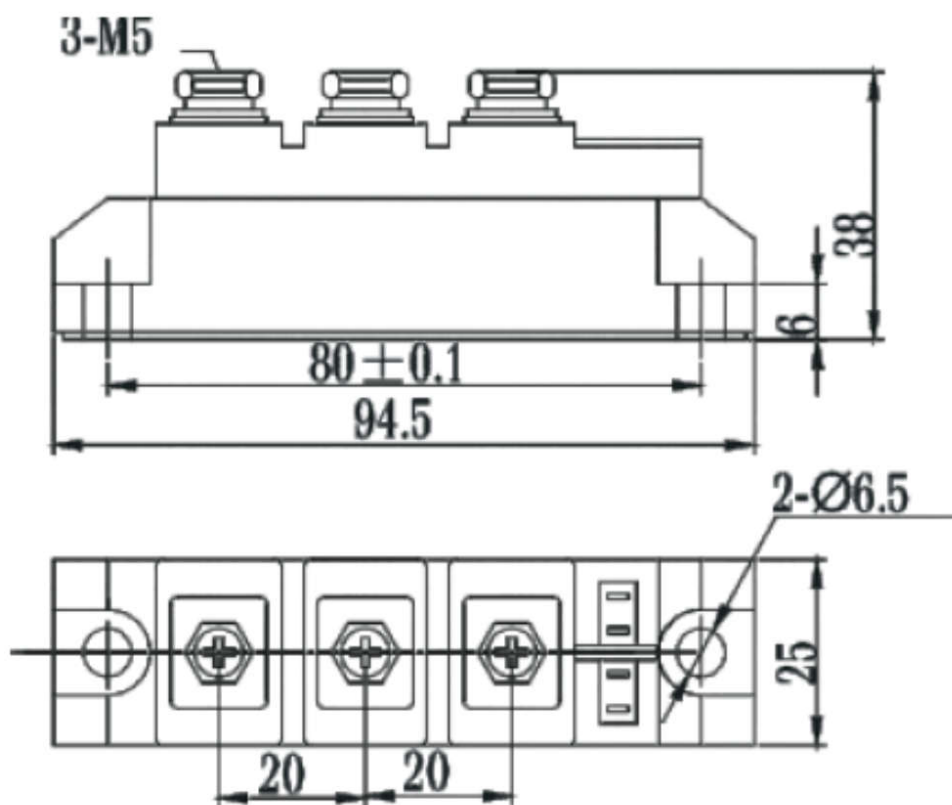
Ordering information

Model name	Package	Unit Weight	Base Quantity
MTC110-XX	M16	-	10pcs/ Box

Package Dimensions

M16

unit: Millimeter



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.