CKT110 Series

Thyristor Modules，110A

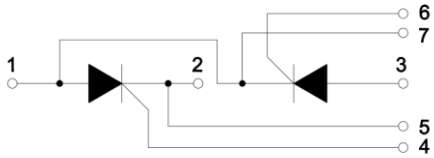
Features

- Blocking voltage：800 to 1600V
- Heat transfer through aluminum oxide DBC Ceramic isolated metal baseplate
- Industrial standard package
- Thick copper baseplate
- 2500 V_{RMS} isolating voltage

Typical Applications

- Power Converters
- DC motor Control and Drives
- Temperature control
- Lighting control

T1 Package



CKT

Module Type

Type	V_{DRM}	V_{RSM}
CKT110-08	800V	900V
CKT110-12	1200V	1300V
CKT110-16	1600V	1700V

Maximum Ratings

Parameters	Symbol	Test Conditions	Values	Unit
Average On-State Current	I_{TAV}	Sine 180℃;T_C=85℃	110	A
Surge forward current	I_{TSM}	t=10ms T_J=45℃	2250	A
		t=10ms T_J=125℃	1900	
Maximum I^2t for fusing	I^2t	t=10ms T_J=45℃	25000	A^2s
		t=10ms T_J=125℃	18000	
Isolation Breakdown Voltage(R.M.S)	Visol	AC 50Hz; R.M.S.; 1min	2500	V
		Ac.50Hz；R.M.S；1sec	3500	V
Operating Juntion Temperature	T_J		-40~+125	℃
Storage Temperature	Tstg		-40~+125	℃
Mounting Torque	Mt	To terminals(M5)	3±15%	Nm
	Ms	To heatsink(M6)	5±15%	
Maximum non-repetitive rate of rise of turned on current	di/dt	T_J=25℃ from 0.67V_{DRM} , I_{TM}= π × $I_{T(AV)}$,Ig=500mA tr<0.5us tp>6us	150	A/us
Maximum critical rate of rise of off-state voltage	dv/dt	T_J =125℃,V_D=2/3V_{DRM}	1000	V/us
Maximum allowable acceleration	a		50	m/s2
Module(Approximately)	Weight		100	g

CKT110 Series

Electrical Characteristics

Parameters	Symbol	Test Conditions	Values			Unit
			Min.	Typ.	Max.	
Maximum Peak On-State Voltage	V_{TM}	$I_{TM} = \pi \times I_{T(AV)}$, T_J=25˚C			1.65	V
Maximum Repetitive Peak Reverse Current/ Maximum Repetitive Off-state Current	I_{RRM}/ I_{DRM}	T_J=125˚C V_{RD}=V_{RRM}			20	mA
On state threshold voltage	V_{TO}	For power-loss calculations only T_J=125˚C			0.9	V
Maximum Value of on-state slope resistance	r_T	T_J=125˚C			2.0	mΩ
Maximum gate voltage required to trigger	V_{GT}	T_J=25˚C，V_D=6V			3.0	V
Maximum gate current required to trigger	I_{GT}	T_J=25˚C，V_D=6V			150	mA
Maximum gate voltage that will not trigger	V_{GD}	T_J=125˚C，V_D=2/3V_{DRM}			0.25	V
Maximum gate current that will not trigger	I_{GD}	T_J=125˚C，V_D=2/3V_{DRM}			6	mA
Maximum Latching current	I_L	T_J=25˚C，I_G=1.2I_{GT}		250	500	mA
Maximum Holding current	I_H	T_J=25˚C，I_T=1A		200	250	mA
Gate controlled delay time	tgd	T_J=25˚C,I_G=1A ,diG/dt=1A/us		1		us
Gircuit commutated turn-off time	tq	T_J=125˚C		100		us

Thermal Characteristics

Parameters	Symbol	Test Conditions	Values	Unit
Maximum internal thermal resistance, junction to case	$Rth_{(J-C)}$	Per thyristor/ Per module	0.28/0.14	˚C/W
Typical thermal resistance, case to heatsink	$Rth_{(C-S)}$	Per thyristor/ Per module	0.20/0.10	˚C/W

Performance Curves

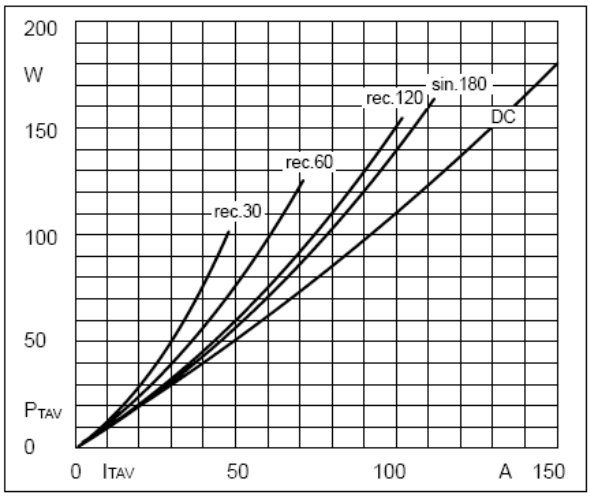


Fig1. Power dissipation

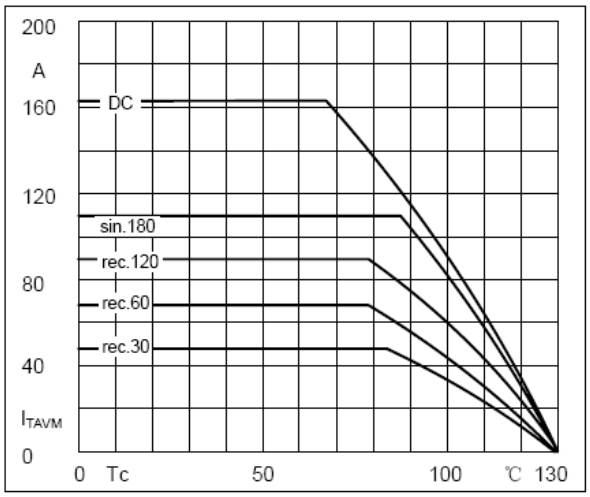


Fig2.Forward Current Derating Curve

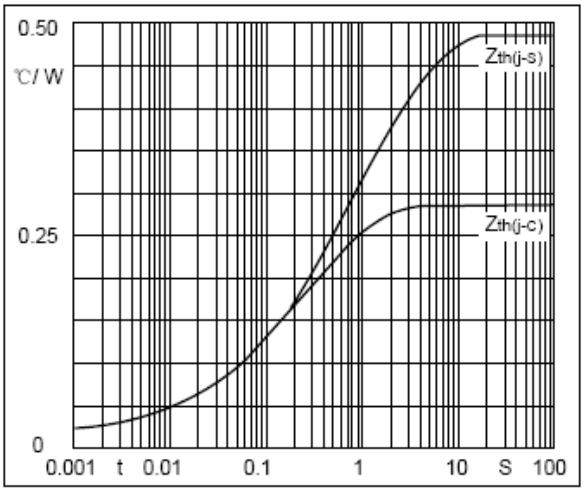


Fig3. Transient thermal impedance

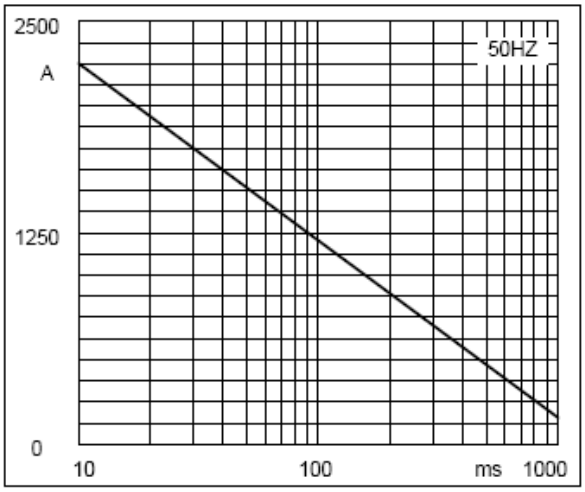


Fig4. Max Non-Repetitive Forward Surge Current

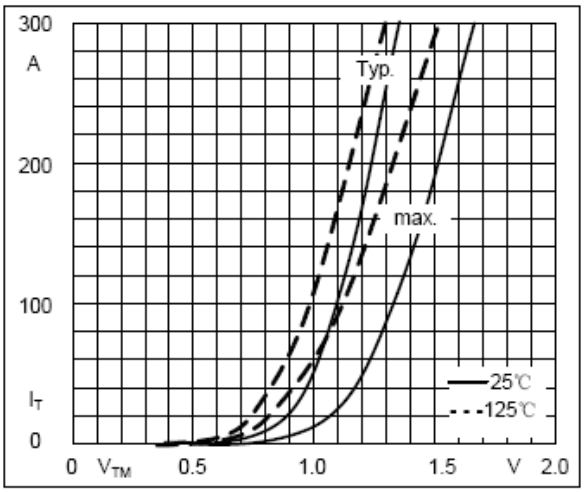


Fig5. Forward Characteristics

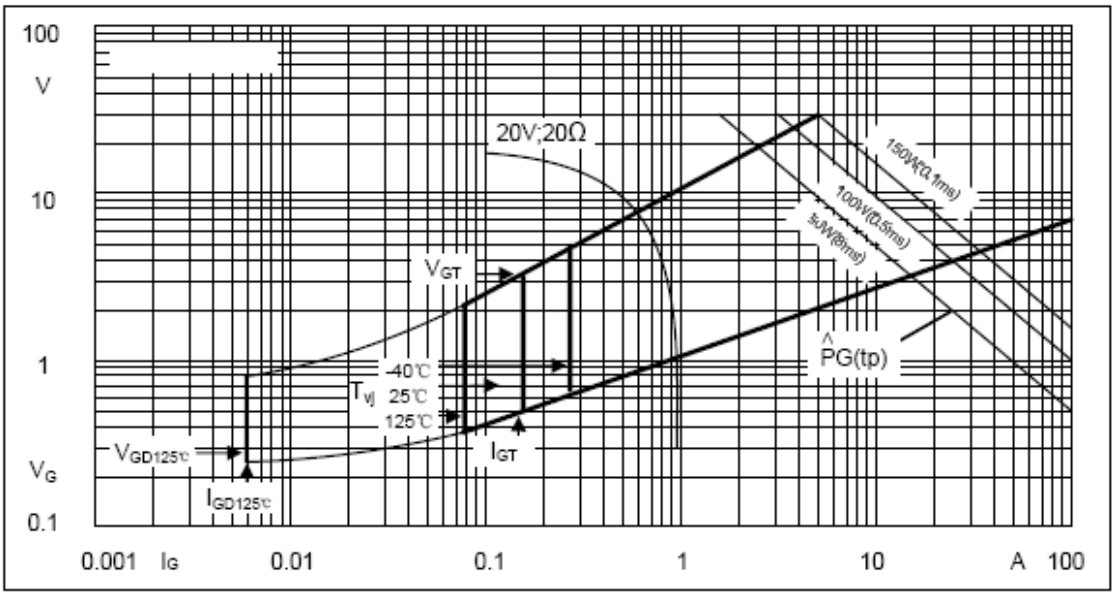


Fig6. Gate trigger Characteristics

CKT110 Series

Ordering Information Tabel

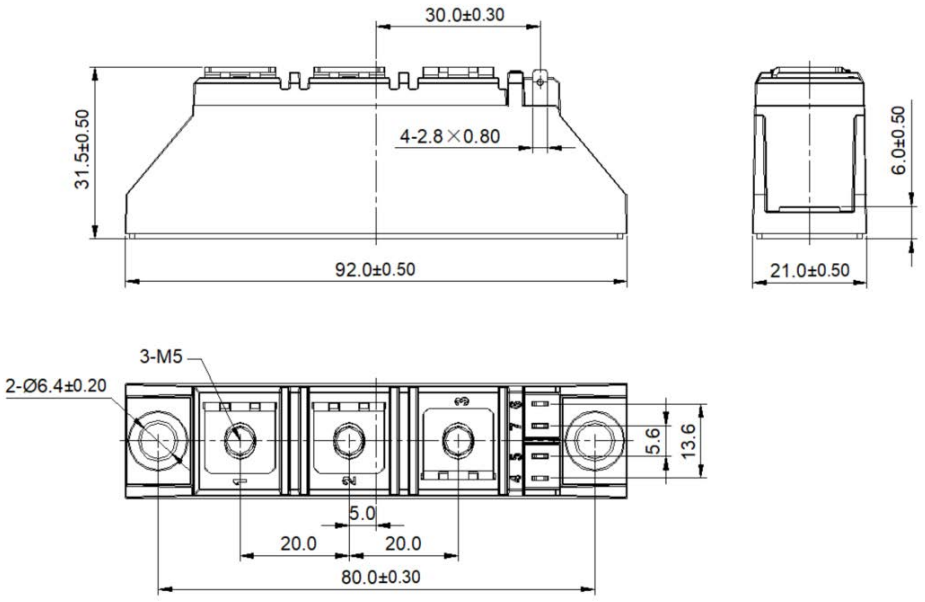
Device code

C KT 110 - 16

- C: power module
- KT: Circuit configuration
- 110: Maximum average forward current, A
- 16: Voltage code 1600V

Package Outline Information

T1 Package



Dimensions in mm