Description:

1) A package of series of two chips.
2) With high thermal conductivity DBC as the insulation.
3) Welding by vacuum welding technology, which provide high reliability.

Typical Application:

DC motor control, temperature control and light control system.

Absolute Maximum Ratings (Packaged into modules, unless otherwise specified, T_{CASE}=25℃)

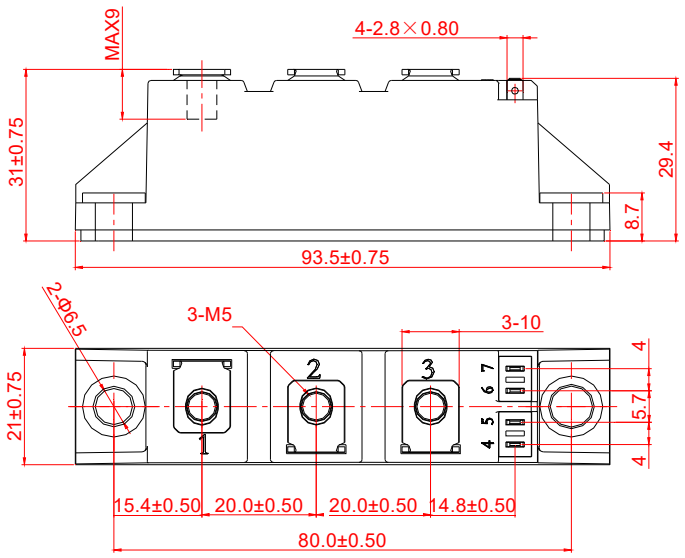
Parameter	Test Conditions	Symbol	Values			Unit
			12	16	18	
Operating junction temperature range		T_j	-40-125			℃
Storage temperature range		T_{stg}	-40-125			℃
Repetitive peak off-state voltage	T_j=25℃	V_{DRM}	1200	1600	1800	V
Repetitive peak reverse voltage	T_j=25℃	V_{RRM}	1200	1600	1800	V
Non-repetitive peak off-state voltage	T_j=25℃	V_{DSM}	1300	1700	1900	V
Non-repetitive peak reverse voltage	T_j=25℃	V_{RSM}	1300	1700	1900	V
Average on-state current	T_C=85℃	$I_{T(AV)}/I_{F(AV)}$	120			A
Peak on-state surge current	t_P=10ms V_R=0.6V_{RRM}	I_{TSM}/I_{FSM}	2500			A
I^2t value for fusing	t_P=10ms V_R=0.6V_{RRM}	I^2t	31250			A^2s
Critical rate of rise of on-state current	I_G=2×I_{GT}	dI/dt	150			A/μs
Isolation voltage	A.C 50Hz(1s/1min)	V_{ISO}	3600/3000			V

Electrical Characteristics (Packaged into modules, unless otherwise specified, T_{CASE}=25℃)

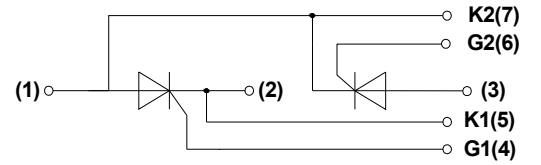
Parameter	Test Conditions	Symbol	Values	Unit
Peak on-state voltage	I_T=360A t_P=380μs	V_{TM}	≤1.8	V
Threshold voltage	T_j=125℃	V_{TO}	≤0.95	V
Dynamic resistance	T_j=125℃	R_d	≤2.1	mΩ
Repetitive peak off-state current	V_D=V_{DRM} T_C=25℃ T_C=125℃	 I_{DRM1} I_{DRM2}	 ≤100 ≤40	 μA mA
Repetitive peak reverse current	V_R=V_{RRM} T_C=25℃ T_C=125℃	 I_{RRM1} I_{RRM2}	 ≤100 ≤40	 μA mA
Triggering gate current	V_D=12V R_L=30Ω	I_{GT}	20-120	mA
Holding current	I_T=1A	I_H	≤250	mA
Latching current	I_G=1.2 I_{GT}	I_L	≤300	mA
Triggering gate voltage	V_D=12V R_L=30Ω	V_{GT}	≤1.8	V
Non triggering gate voltage	V_D=V_{DRM} T_j=125℃	V_{GD}	≥0.25	V
Critical rate of rise of voltage	V_D=2/3V_{DRM} T_j=125℃ Gate Open	dv/dt	≥1000	V/μs
Thermal resistance	Junction to case Case to heatsink	$R_{th(j-c)}$ $R_{th(c-s)}$	0.29 0.21	℃/W

Mechanical Characteristics

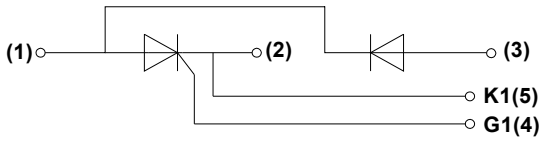
Module size	93.5mm×21mm
Module height	31mm
Terminal distance of (1) /(2) /(3)	20mm
Mounting torque(M5)	5±15%Nm
Terminal torque(M5)	3±15%Nm



T1



AKMD symbol



AKMH symbol

Performance Curves

FIG.1: Power dissipation vs. on-state current (per thyristor or diode)

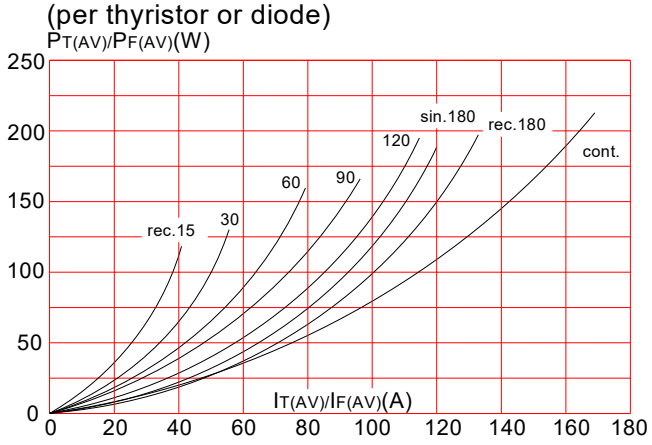


FIG.2: Maximum transient thermal impedance junction to case(per thyristor or diode)

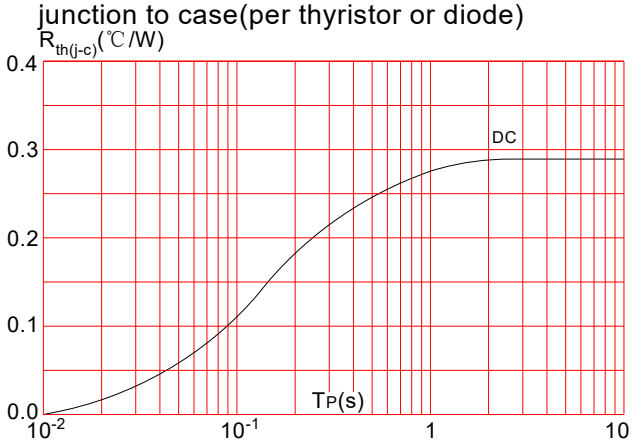


FIG.3: Forward characteristics
(per thyristor or diode)

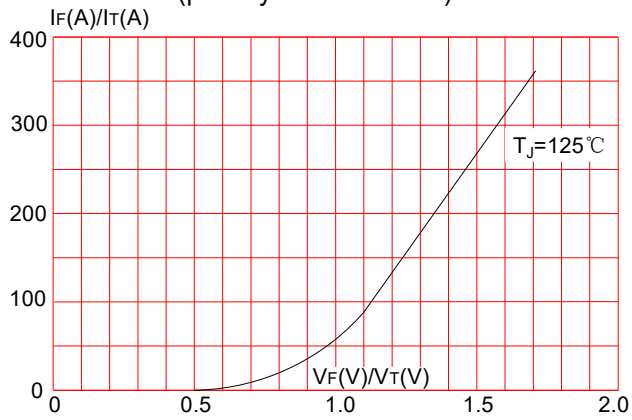
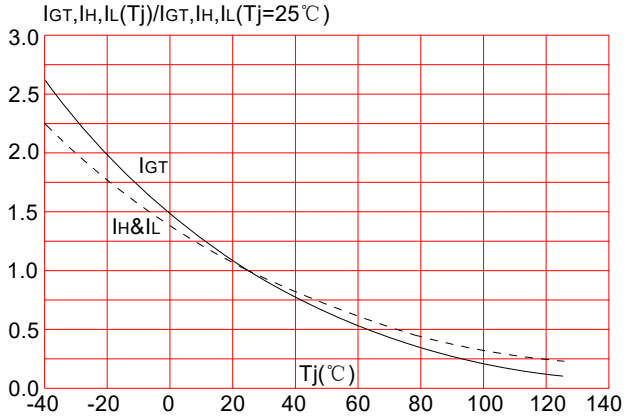


FIG.4: Relative variations of gate trigger current, holding current and latching current versus junction temperature



Ordering Information

AK MD 120 / 16

Aiko Electronics Technology Co., LTD

MD: Thyristor module
MH: Thyristor and diode module

$I_{T(AV)}/I_{F(AV)}$=120A

12:$V_{DRM}/V_{RRM}\geqslant$1200V
16:$V_{DRM}/V_{RRM}\geqslant$1600V
18:$V_{DRM}/V_{RRM}\geqslant$1800V