

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.



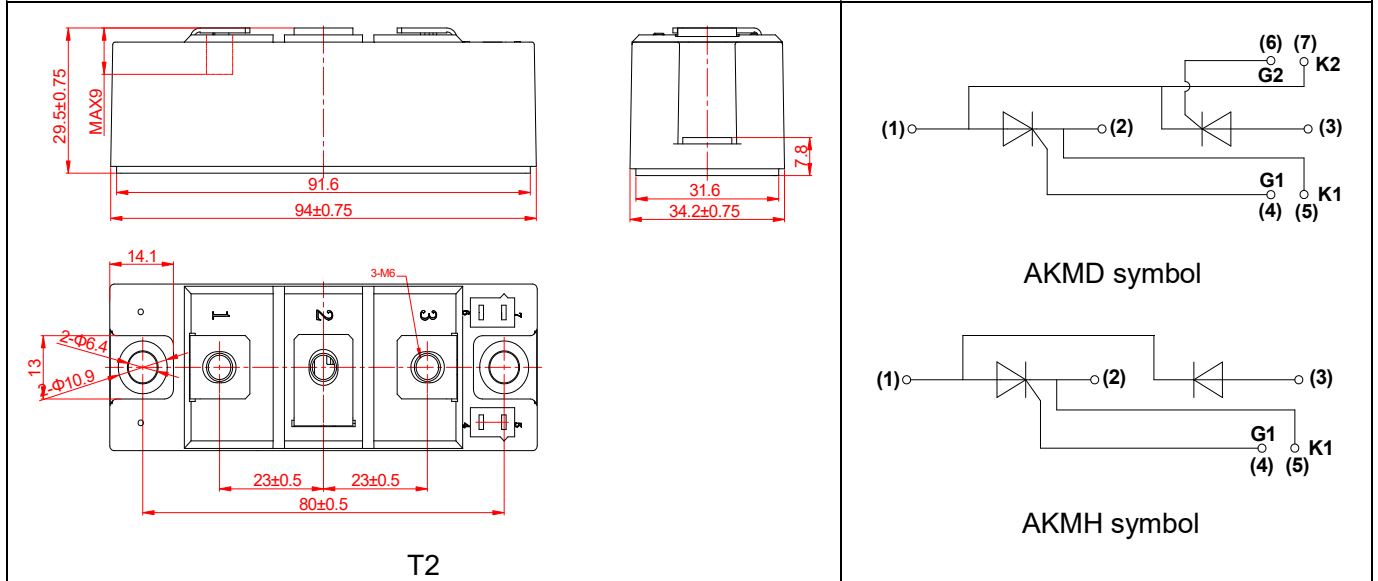
Absolute Maximum Ratings (Packaged into modules, unless otherwise specified, $T_{CASE}=25^{\circ}C$)

Parameter	Test Conditions	Symbol	Values			Unit
			12	16	18	
Operating junction temperature range		T_j	-40~125			$^{\circ}C$
Storage temperature range		T_{stg}	-40~125			$^{\circ}C$
Repetitive peak off-state voltage	$T_j=25^{\circ}C$	V_{DRM}	1200	1600	1800	V
Repetitive peak reverse voltage	$T_j=25^{\circ}C$	V_{RRM}	1200	1600	1800	V
Non-repetitive peak off-state voltage	$T_j=25^{\circ}C$	V_{DSM}	1300	1700	1900	V
Non-repetitive peak reverse voltage	$T_j=25^{\circ}C$	V_{RSM}	1300	1700	1900	V
Average on-state current	$T_C=85^{\circ}C$	$I_{T(AV)}/I_{F(AV)}$	150			A
Peak on-state surge current	$t_p=10ms$ $V_R=0.6V_{RRM}$	I_{TSM}/I_{FSM}	3000			A
I^2t value for fusing	$t_p=10ms$ $V_R=0.6V_{RRM}$	I^2t	45000			A^2s
Critical rate of rise of on-state current	$I_G=2 \times I_{GT}$	di/dt	150			$A/\mu s$
Insulation voltage	A.C 50Hz(1s/1min)	V_{ISO}	3600/3000			V

Electrical Characteristics (Packaged into modules, unless otherwise specified, $T_{CASE}=25^{\circ}C$)

Parameter	Test Conditions	Symbol	Values	Unit
Peak on-state voltage	$I_T=450A$ $t_P=380\mu s$	V_{TM}	≤ 1.8	V
Threshold voltage	$T_j=125^{\circ}C$	V_{TO}	≤ 1.05	V
Dynamic resistance	$T_j=125^{\circ}C$	R_d	≤ 1.7	m Ω
Repetitive peak off-state current	$V_D=V_{DRM}$ $T_C=25^{\circ}C$	I_{DRM1}	≤ 100	μA
	$T_C=125^{\circ}C$	I_{DRM2}	≤ 50	mA
Repetitive peak reverse current	$V_R=V_{RRM}$ $T_C=25^{\circ}C$	I_{RRM1}	≤ 100	μA
	$T_C=125^{\circ}C$	I_{RRM2}	≤ 50	mA
Triggering gate current	$V_D=12V$ $R_L=30\Omega$	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	$V_D=12V$ $R_L=30\Omega$	V_{GT}	≤ 1.8	V
Non triggering gate voltage	$V_D=V_{DRM}$ $T_j=125^{\circ}C$	V_{GD}	≥ 0.25	V
Critical rate of rise of voltage	$V_D=2/3V_{DRM}$ $T_j=125^{\circ}C$ Gate Open	dv/dt	≥ 1000	V/ μs
Thermal resistance	Junction to case	$R_{th(j-c)}$	0.21	$^{\circ}C/W$
	Case to heatsink	$R_{th(c-s)}$	0.13	

Mechanical Characteristics

Module size	94mm×34.2mm
Module height	29.5mm
Terminal distance of (1)/(2)/(3)	23mm
Mounting torque(M5)	5±15%Nm
Terminal torque(M6)	5±15%Nm
 <p>The table contains mechanical drawings and circuit symbols. On the left, there are three views of the module: a top view showing overall dimensions (94±0.75mm width, 29.5±0.75mm height), a side view showing a width of 34.2±0.75mm and a height of 7.8mm, and a front view showing terminal spacing (23±0.5mm between terminals 1, 2, and 3) and mounting hole details (3-M6 holes, 14.1mm hole spacing, 2-φ6.4mm holes, 13mm hole diameter, φ10.9mm hole diameter). On the right, there are two circuit symbols: the AKMD symbol and the AKMH symbol. Both symbols show a bridge-like circuit with terminals (1), (2), (3), (4), and (5). The AKMD symbol includes additional terminals (6), (7), (G2), and (K2). The AKMH symbol includes terminals (G1) and (K1).</p>	

Performance Curves

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

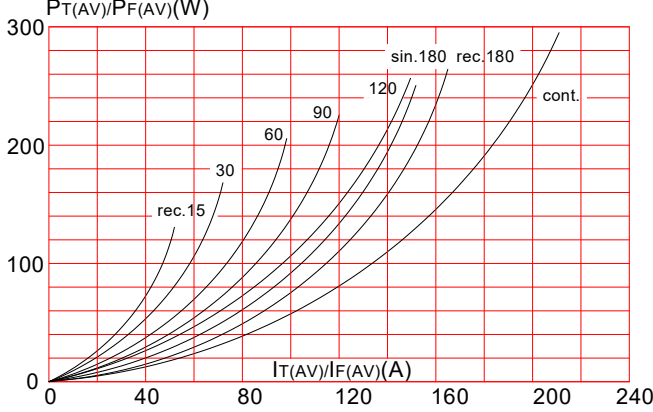


FIG.2: Maximum transient thermal impedance junction to case(per thyristor or diode)

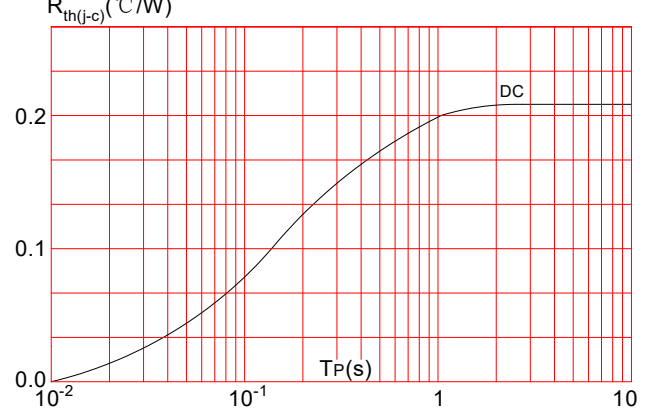


FIG.3: Forward characteristics (per thyristor or diode)

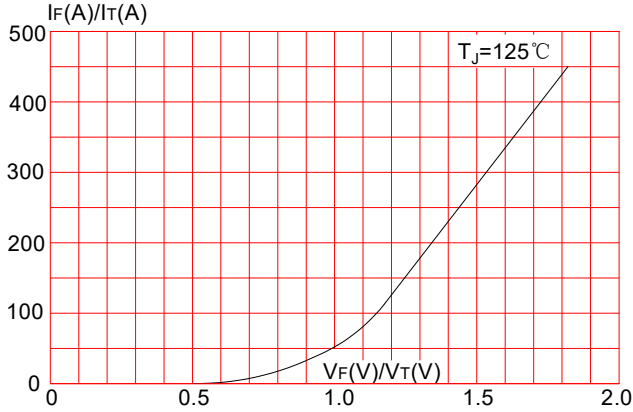
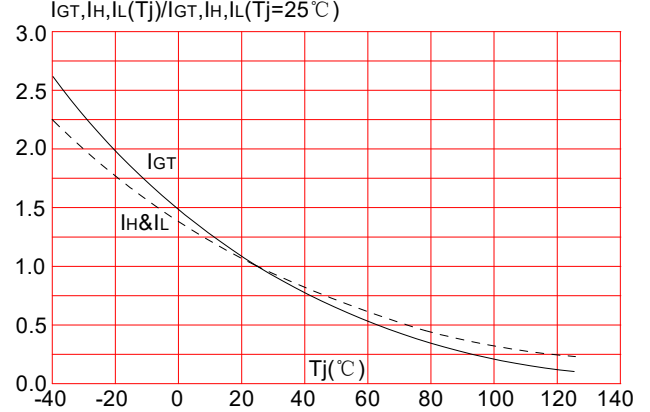


FIG.4: Relative variations of gate trigger current, holding current and latching current versus junction temperature



Ordering Information

<p style="text-align: center; font-size: 2em; font-weight: bold;">AK</p> <p style="text-align: center; border-top: 1px solid black; padding-top: 2px;">Aiko Electronics Technology Co., LTD</p>	<p style="text-align: center; font-size: 2em; font-weight: bold;">MD</p> <p style="text-align: center; border-top: 1px solid black; padding-top: 2px;">MD: Thyristor module MH: Thyristor and diode module</p>	<p style="text-align: center; font-size: 2em; font-weight: bold;">150 / 16</p> <p style="text-align: center; border-top: 1px solid black; padding-top: 2px;">IT(AV)/IF(AV)=150A</p>	<p style="text-align: center; border-top: 1px solid black; padding-top: 2px;">12: $V_{DSM}/V_{RSM} \geq 1300V$ 16: $V_{DSM}/V_{RSM} \geq 1700V$ 18: $V_{DSM}/V_{RSM} \geq 1900V$</p>
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