

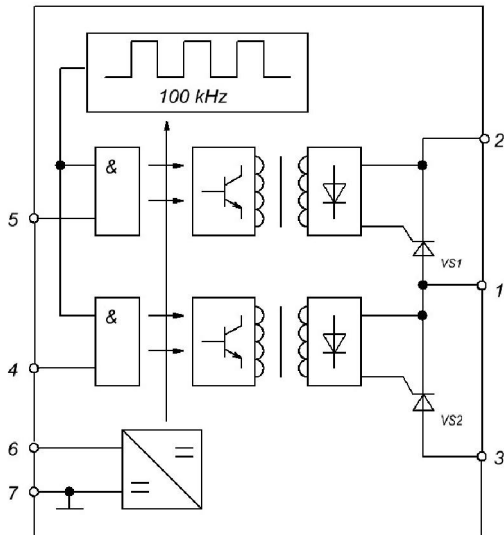
## THYRISTOR MODULES WITH TRANSFORMER DECOUPLING

### TM1-25(40, 63, 80, 100, 125, 160, 200, 250)-12

#### TICKET

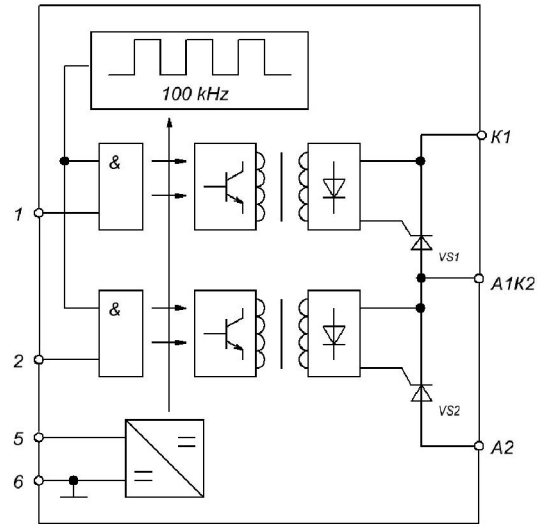
Thyristor modules with transformer decoupling are intended for using as switch elements of controlled rectifiers, converters (inverters), power regulators for power DC and AC loads. MT1 are intended as an analogue of MO1 that operates in devices with high level of pulse noises.

#### INTERNAL CONNECTION SCHEME



- Output function
- |   |                        |
|---|------------------------|
| 1 | Cathode VS2, Anode VS1 |
| 2 | Cathode VS1            |
| 3 | Anode VS2              |
| 4 | Control VS2            |
| 5 | Control VS1            |
| 6 | Supply                 |
| 7 | Ground                 |

Figure 1



- Output function
- |      |                       |
|------|-----------------------|
| A1C2 | Cathode VS2 Anode VS1 |
| C1   | Cathode VS1           |
| A2   | Anode VS2             |
| 1    | Control VS2           |
| 2    | Control VS1           |
| 5    | Supply                |
| 6    | Ground                |

Figure 2

#### BASIC CHARACTERISTICS

T = 25 °C

Device		25 A	40 A	63 A	80 A	100 A	125 A	160 A	200 A	250 A
On-state pulse voltage, $U_{TM}$ , V	max	1.65								
	$I_{OUT}$ , A	79	126	198	251	314	393	506	628	785
Off-state DC /reverse current, $I_D / I_R$ , mA	max	1								
	$U_{OUT}$ , V	±1200								
Supply voltage, V	Min	13.5								
	Max	27								
Current consumption, mA	$U_c = 24$ V	120								
	$U_c = 15$ V	200								
Electrical DC isolation strength, $U_{ISOL}$ , V	min	4000								
	t, min	1								
Isolation resistance between power outputs and control outputs, $R_{ISOL}$ , MΩ	min	100								
	U, V	500								
Isolation resistance between power outputs and housing radiator, $R_{ISOL in-out}$ , MΩ	min	10								
	U, V	500								
Thermal resistance junction-cooler $R_{thjc}$ , °C/W	max	0.8	0.7	0.55	0.45	0.3	0.25	0.22	0.19	0.15

### MAXIMUM-PERMISSIBLE OPERATING MODES

Device		25 A	40 A	63 A	80 A	100 A	125 A	160 A	200 A	250 A
Repetitive pulse reverse/off-state voltage, $U_{RRM} / U_{DRM}$ , V	max	$\pm 1200$								
Average on state current with cooler $I_{T(AV)}$ , A, $T_c=85^\circ\text{C}$	max	25	40	63	80	100	125	160	200	250
Control voltage that corresponds to "1" logic level, V	min	5								
	max	15								
Control voltage that corresponds to "0" logic level, V	max	3.3								
Current consumption of control input, mA	$U_{cont} = 15\text{ V}$	10								
On state surge current*, $I_{TSM}$ , A	max	200	560	720	960	1350	2500	4000	5000	6000
	t, ms	10								
Critical rate of off-state voltage rise, $(du_d / dt)_{cr}$ , B/ $\mu\text{s}$		1000								
Critical rate of on-state current rise, $(di_T / dt)_{cr}$ , A/ $\mu\text{s}$		150								
Junction temperature, $T_{VJ}^{**}$ , $^\circ\text{C}$	min	- 40								
	max	+ 125								

\* to thyristor

\*\* the modules are designed for operating in equipment with coolers that support junction temperature in prescribed ranges

### OVERALL DRAWINGS

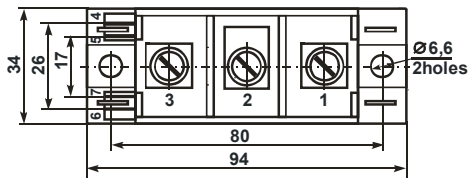
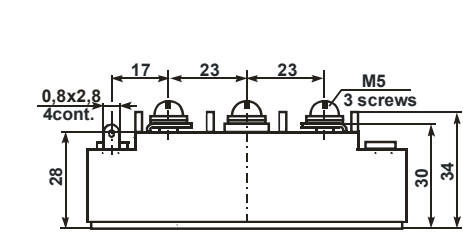


Figure 3

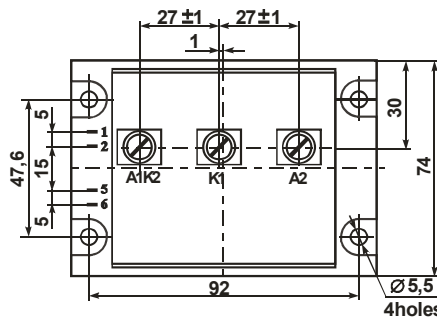
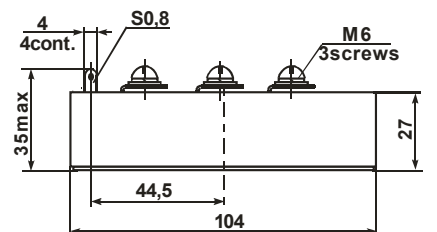


Figure 4

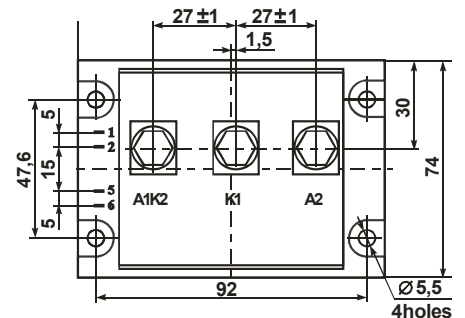
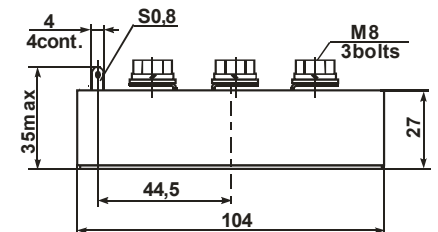


Figure 5

Device	Figure
MT1-25-12	3, 1
MT1-40-12	3, 1
MT1-63-12	3, 1
MT1-80-12	3, 1
MT1-100-12	3, 1
MT1-125-12	3, 1
MT1-160-12	3, 1 or 4, 2
MT1-200-12	5, 2
MT1-250-12	5, 2

Precious metals are not contained.