

# THYRISTOR-DIODE MODULES

## M1-25(40,63,80,100,125,160,200,250)-12

### DATASHEET IN BRIEF

Thyristor-diode modules are intended for using in switch elements of controllable rectifiers, converters (inverters), power regulators for powerful DC and AC loads.

### OVERALL DRAWINGS

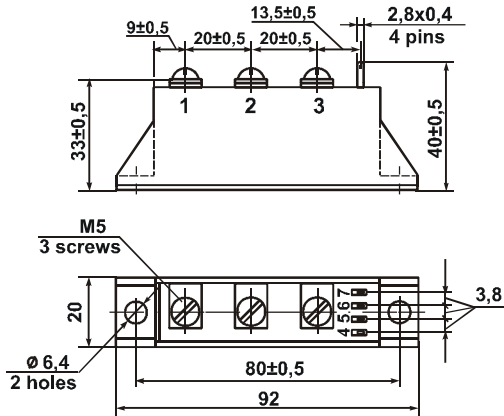


Figure 1

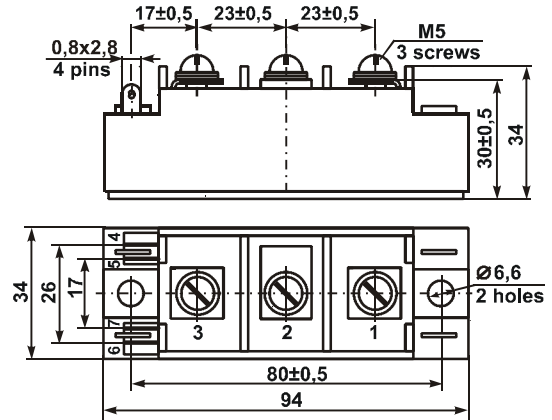


Figure 2

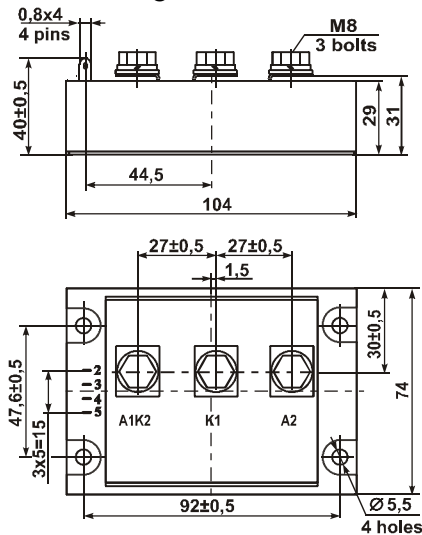


Figure 3

Product description	Figure
M1-25-12	1 or 2, 4
M1-40-12	1 or 2, 4
M1-63-12	1 or 2, 4
M1-80-12	1 or 2, 4
M1-100-12	1 or 2, 4
M1-125-12	2, 4
M1-160-12	2, 4
M1-200-12	3, 5
M1-250-12	3, 5

### INTERNAL CONNECTION CIRCUITS

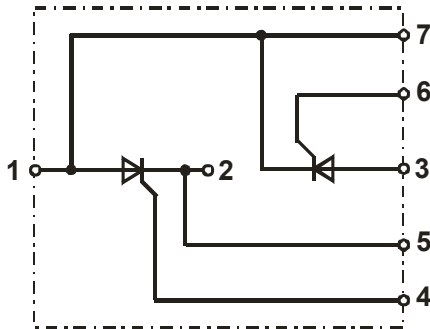


Figure 4

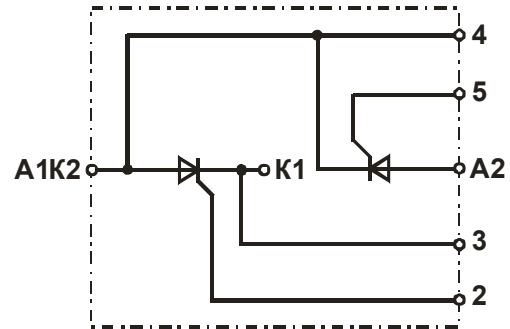


Figure 5

## BASIC CHARACTERISTICS

T = 25 °C

Product name	Pulse on-state voltage, $U_{TM}$ , V		Repetitive peak off-state current, $I_{DRM}$ , mA		Repetitive peak reverse thyristor current, $I_{RRM}$ , mA		Gate trigger DC voltage, $U_{GT}$ , V	Gate trigger DC $I_{GT}$ , mA	Electric isolation strength at DC between radiator and power outputs, $U_{ISOL}$ , V	Gate non-trigger DC voltage, $U_{GD}$ , (V) $T_j = 125^\circ\text{C}$	Thermal junction-cooler resistance, $R_{th(j-c)}$ , ( $^\circ\text{C}/\text{W}$ )	
	max	$I_{OUT}$ , A ampl. value	max	$U_{OUT}$ , V	max	$U_{OUT}$ , V	max	max				min
M1-25-12	1.65	$\pi \cdot I_{T(AV)}$ , 10 ms, 50 Hz, sinus	1.0	$\pm 1200$	1.0	$\pm 1200$	2.0	150	4000	1	0.25	1.5
M1-40-12								0.7				
M1-63-12								0.55				
M1-80-12								0.45				
M1-100-12								0.3				
M1-125-12								0.25				
M1-160-12								0.22				
M1-200-12								0.22				
M1-250-12								0.17				

## MAXIMUM ALLOWABLE OPERATING MODES

Product name	Repetitive thyristor pulse reverse voltage/ off-state, $U_{RRM} / U_{DRM}$ , V	Average on-state current with cooler $I_{T(AV)}$ *, A, $T=85^\circ\text{C}$	Commutation voltage, $U_{com}$ , V	Surge on-state current, $I_{TSM}$ *, A		Critical speed of voltage build-up in off-state, $(du_d / dt)_{cr}$ , V/ $\mu\text{s}$	Critical rate of rise of on-state current, $(di_T / dt)_{cr}$ , A/ $\mu\text{s}$	Junction temperature, $T_{Vj}$ ** , $^\circ\text{C}$		
				max	t, ms			min	max	
M1-25-12	$\pm 1200$	25	840	200	10	1000	150	- 40	+125	
M1-40-12		40		560						
M1-63-12		63		720						
M1-80-12		80		960						
M1-100-12		100		1350						
M1-125-12		125		2500						
M1-160-12		160		4000						
M1-200-12		200		5000						
M1-250-12		250		6000						100

\* to thyristor

\*\* the modules are designed to operate in equipment with using of coolers that support transition temperature in the prescribed ranges

Precious metals are not contained.

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