

## Thyristor Module Thyristor/Diode Modules

## PSKT 72 /PSKH 72

$$I_{TRMS} = 2x 180 A$$

$$I_{TAVM} = 2x 115 A$$

$$V_{RRM} = 800 - 1800 V$$

### Preliminary Data Sheet

$V_{RSM}$ $V_{DSM}$	$V_{RRM}$ $V_{DRM}$	Type	
V	V	Version 1	Version 8
900	800	PSKT 72/08io1	--
1300	1200	PSKT 72/12io1	PSKH 72/12io1
1500	1400	PSKT 72/14io1	--
1700	1600	PSKT 72/16io1	PSKH 72/16io1
1900	1800	PSKT 72/18io1	--
		PSKT 72/08io8	PSKH 72/08io8
		PSKT 72/12io8	PSKH 72/12io8
		PSKT 72/14io8	PSKH 72/14io8
		PSKT 72/16io8	PSKH 72/16io8
		PSKT 72/18io8	PSKH 72/18io8

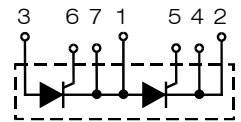
Symbol	Test Conditions	Maximum Ratings	
$I_{TRMS}, I_{FRMS}$ $I_{TAVM}, I_{FAVM}$	$T_{VJ} = T_{VJM}$ $T_C = 63^\circ C; 180^\circ \text{ sine}$ $T_C = 85^\circ C; 180^\circ \text{ sine}$	180	A
$I_{TSM}, I_{FSM}$	$T_{VJ} = 45^\circ C;$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	1700 A 1800 A
	$T_{VJ} = T_{VJM}$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	1540 A 1640 A
$Jt^2dt$	$T_{VJ} = 45^\circ C$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	14 450 A <sup>2</sup> s 13 500 A <sup>2</sup> s
	$T_{VJ} = T_{VJM}$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	11 850 A <sup>2</sup> s 11 300 A <sup>2</sup> s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ f = 50 Hz, t <sub>p</sub> = 200 μs $V_D = 2/3 V_{DRM}$ $I_G = 0.45 A$ di <sub>G</sub> /dt = 0.45 A/μs	repetitive, I <sub>T</sub> = 250 A non repetitive, I <sub>T</sub> = I <sub>TAVM</sub>	150 A/μs 500 A/μs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$ R <sub>GK</sub> = ∞; method 1 (linear voltage rise)	V <sub>DR</sub> = 2/3 V <sub>DRM</sub>	1000 V/μs
$P_{GM}$	$T_{VJ} = T_{VJM}$ I <sub>T</sub> = I <sub>TAVM</sub>	t <sub>p</sub> = 30 μs t <sub>p</sub> = 300 μs	10 W 5 W
$P_{GAV}$			0.5 W
$V_{RGM}$			10 V
$T_{VJ}$			-40...+125 °C
$T_{VJM}$			125 °C
$T_{stg}$			-40...+125 °C
$V_{ISOL}$	50/60 Hz, RMS I <sub>ISOL</sub> ≤ 1 mA	t = 1 min t = 1 s	3000 V~ 3600 V~
$M_d$	Mounting torque (M5) Terminal connection torque (M5)		2.5-4.0/22-35 Nm/lb.in. 2.5-4.0/22-35 Nm/lb.in.
<b>Weight</b>	Typical including screws		90 g

Data according to IEC 60747 and refer to a single thyristor/diode unless otherwise stated.

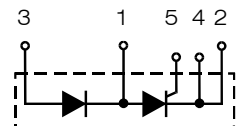
TO-240 AA



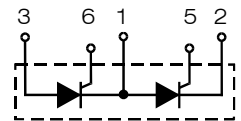
PSKT  
Version 1



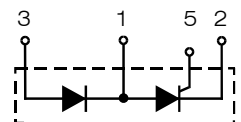
PSKH  
Version 1



PSKT  
Version 8



PSKH  
Version 8



### Features

- International standard package, JEDEC TO-240 AA
- Direct Copper Bonded Al<sub>2</sub>O<sub>3</sub>-ceramic base plate
- Planar passivated chips
- Isolation voltage 3600 V~
- UL registered, E 148688
- Gate-cathode twin pins for version 1

### Applications

- DC motor control
- Softstart AC motor controller
- Light, heat and temperature control

### Advantages

- Space and weight savings
- Simple mounting with two screws
- Improved temperature and power cycling capability
- Reduced protection circuits

Symbol	Test Conditions	Characteristic Values
$I_{RRM}, I_{DRM}$	$T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$	5 mA
$V_T, V_F$	$I_T, I_F = 300 \text{ A}; T_{VJ} = 25^\circ\text{C}$	1.74 V
$V_{T0}$	For power-loss calculations only ( $T_{VJ} = 125^\circ\text{C}$ )	0.85 V
$r_T$		3.2 mΩ
$V_{GT}$	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$	2.5 V
	$T_{VJ} = -40^\circ\text{C}$	2.6 V
$I_{GT}$	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$	150 mA
	$T_{VJ} = -40^\circ\text{C}$	200 mA
$V_{GD}$	$T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$	0.2 V
$I_{GD}$		10 mA
$I_L$	$T_{VJ} = 25^\circ\text{C}; t_p = 10 \mu\text{s}; V_D = 6 \text{ V}$ $I_G = 0.45 \text{ A}; di_G/dt = 0.45 \text{ A}/\mu\text{s}$	450 mA
$I_H$	$T_{VJ} = 25^\circ\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$	200 mA
$t_{gd}$	$T_{VJ} = 25^\circ\text{C}; V_D = 1/2 V_{DRM}$ $I_G = 0.45 \text{ A}; di_G/dt = 0.45 \text{ A}/\mu\text{s}$	2 μs
$t_q$	$T_{VJ} = T_{VJM}; I_T = 150 \text{ A}; t_p = 200 \mu\text{s}; -di/dt = 10 \text{ A}/\mu\text{s}$ typ. $V_R = 100 \text{ V}; dv/dt = 20 \text{ V}/\mu\text{s}; V_D = 2/3 V_{DRM}$	185 μs
$Q_s$	$T_{VJ} = T_{VJM}; I_T, I_F = 50 \text{ A}, -di/dt = 6 \text{ A}/\mu\text{s}$	170 μC
$I_{RM}$		45 A
$R_{thJC}$	per thyristor/diode; DC current per module	0.3 K/W
$R_{thJK}$	per thyristor/diode; DC current per module	0.15 K/W
	other values see Fig. 8/9	0.5 K/W
		0.25 K/W
$d_s$	Creepage distance on surface	12.7 mm
$d_A$	Strike distance through air	9.6 mm
$a$	Maximum allowable acceleration	50 m/s <sup>2</sup>

Optional accessories for module-type PSKT 72 version 1

Keyed gate/cathode twin plugs with wire length = 350 mm, gate = yellow, cathode = red

Type **ZY 200L** (L = Left for pin pair 4/5) } UL 758, style 1385,  
Type **ZY 200R** (R = right for pin pair 6/7) } CSA class 5851, guide 460-1-1

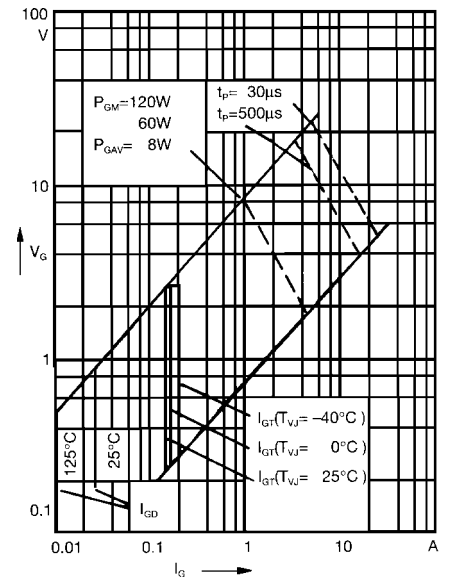


Fig. 1 Gate trigger characteristics

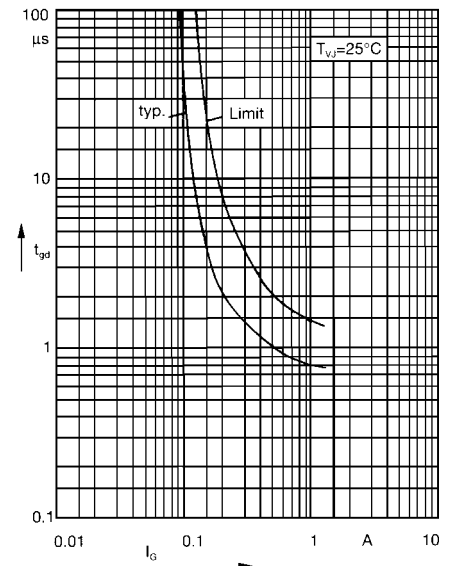
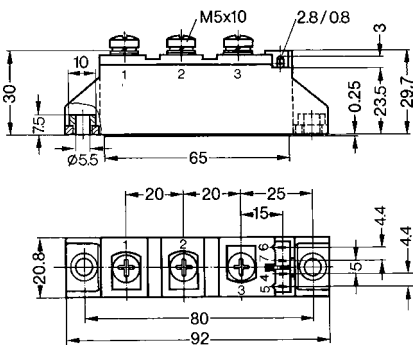


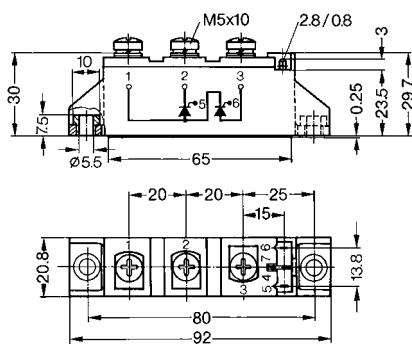
Fig. 2 Gate trigger delay time

## Dimensions in mm (1 mm = 0.0394")

### PSKT/PSKH Version 1



### PSKT Version 8



### PSKH Version 8

