

Thyristor Module Thyristor/Diode Modules

PSKT 72 /PSKH 72

$$\begin{aligned} I_{\text{TRMS}} &= 2 \times 180 \text{ A} \\ I_{\text{TAVM}} &= 2 \times 115 \text{ A} \\ V_{\text{RRM}} &= 800 - 1800 \text{ V} \end{aligned}$$

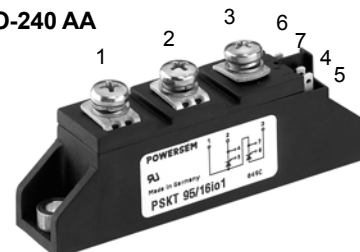
Preliminary Data Sheet

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

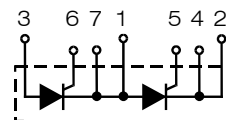
Symbol	Test Conditions		Maximum Ratings	
$I_{\text{TRMS}}, I_{\text{FRMS}}$ $I_{\text{TAVM}}, I_{\text{FAVM}}$	$T_{\text{VJ}} = T_{\text{VJM}}$ $T_{\text{C}} = 63^{\circ}\text{C}; 180^{\circ} \text{ sine}$ $T_{\text{C}} = 85^{\circ}\text{C}; 180^{\circ} \text{ sine}$		180 115 85	A A A
$I_{\text{TSM}}, I_{\text{FSM}}$	$T_{\text{VJ}} = 45^{\circ}\text{C};$ $V_{\text{R}} = 0$	$t = 10 \text{ ms (50 Hz), sine}$ $t = 8.3 \text{ ms (60 Hz), sine}$	1700 1800	A A
	$T_{\text{VJ}} = T_{\text{VJM}}$ $V_{\text{R}} = 0$	$t = 10 \text{ ms (50 Hz), sine}$ $t = 8.3 \text{ ms (60 Hz), sine}$	1540 1640	A A
$\int i^2 dt$	$T_{\text{VJ}} = 45^{\circ}\text{C}$ $V_{\text{R}} = 0$	$t = 10 \text{ ms (50 Hz), sine}$ $t = 8.3 \text{ ms (60 Hz), sine}$	14 450 13 500	A^2s A^2s
	$T_{\text{VJ}} = T_{\text{VJM}}$ $V_{\text{R}} = 0$	$t = 10 \text{ ms (50 Hz), sine}$ $t = 8.3 \text{ ms (60 Hz), sine}$	11 850 11 300	A^2s A^2s
$(di/dt)_{\text{cr}}$	$T_{\text{VJ}} = T_{\text{VJM}}$ $f = 50 \text{ Hz}, t_{\text{p}} = 200 \mu\text{s}$ $V_{\text{D}} = 2/3 V_{\text{DRM}}$ $I_{\text{G}} = 0.45 \text{ A}$ $di_{\text{G}}/dt = 0.45 \text{ A}/\mu\text{s}$	repetitive, $I_{\text{T}} = 250 \text{ A}$ non repetitive, $I_{\text{T}} = I_{\text{TAVM}}$	150 500	$\text{A}/\mu\text{s}$ $\text{A}/\mu\text{s}$
$(dv/dt)_{\text{cr}}$	$T_{\text{VJ}} = T_{\text{VJM}}$ $R_{\text{GK}} = \infty$; method 1 (linear voltage rise)	$V_{\text{DR}} = 2/3 V_{\text{DRM}}$	1000	$\text{V}/\mu\text{s}$
P_{GM}	$T_{\text{VJ}} = T_{\text{VJM}}$ $I_{\text{T}} = I_{\text{TAVM}}$	$t_{\text{p}} = 30 \mu\text{s}$ $t_{\text{p}} = 300 \mu\text{s}$	10 5	W W
P_{GAV}			0.5	W
V_{RGM}			10	V
T_{VJ}			-40...+125	$^{\circ}\text{C}$
T_{VJM}			125	$^{\circ}\text{C}$
T_{stg}			-40...+125	$^{\circ}\text{C}$
V_{ISOL}	50/60 Hz, RMS $I_{\text{ISOL}} \leq 1 \text{ mA}$	$t = 1 \text{ min}$ $t = 1 \text{ s}$	3000 3600	V~ V~
M_{d}	Mounting torque (M5) Terminal connection torque (M5)		2.5-4.0/22-35 2.5-4.0/22-35	Nm/lb.in. Nm/lb.in.
Weight	Typical including screws		90	g

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

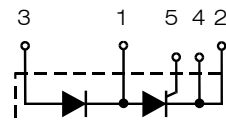
TO-240 AA



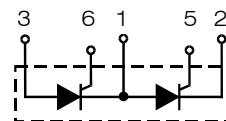
PSKT
Version 1



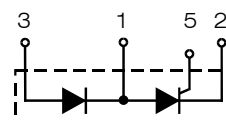
PSKH
Version 1



PSKT
Version 8



PSKH
Version 8



Features

- International standard package, JEDEC TO-240 AA
- Direct Copper Bonded Al_2O_3 -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	$T_{VJ} = T_{VJM}; I_T = 150 \text{ A}; t_p = 200 \mu\text{s}; -di/dt = 10 \text{ A}/\mu\text{s}$ $V_R = 100 \text{ V}; dv/dt = 20 \text{ V}/\mu\text{s}; V_D = 2/3 V_{DRM}$	typ. 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	0.3 K/W
R_{thJK}	per module	0.15 K/W
	per thyristor/diode; DC current	0.5 K/W
	per module	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 ²

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

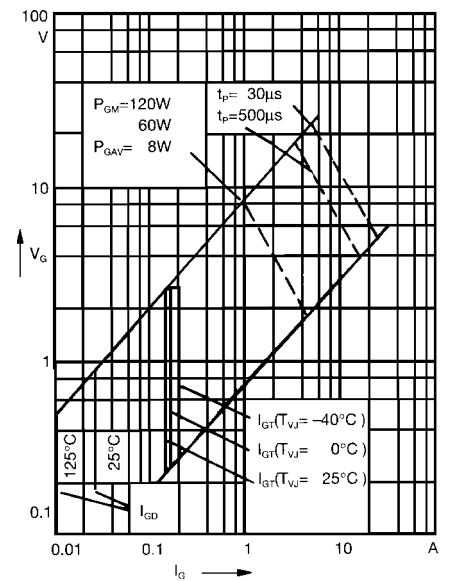


Fig. 1 Gate trigger characteristics

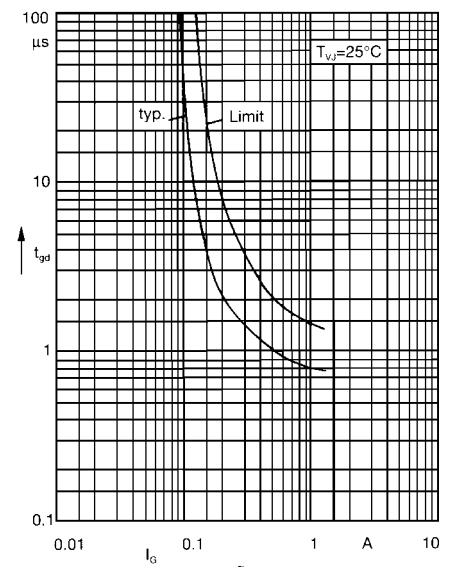
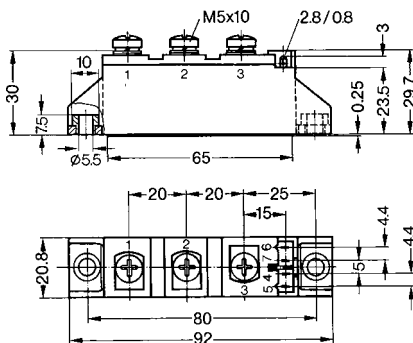


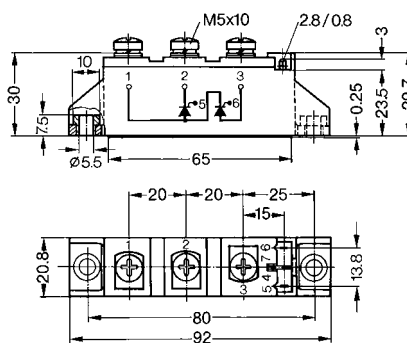
Fig. 2 Gate trigger delay time

Dimensions in mm (1 mm = 0.0394")

PSKT/PSKH Version 1



PSKT Version 8



PSKH Version 8

