

Diode Modules

PSKD 26

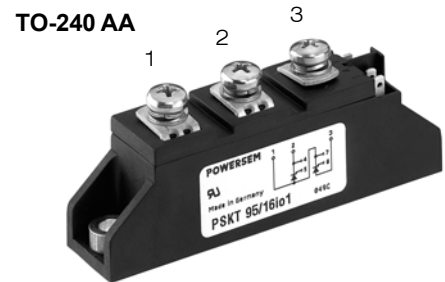
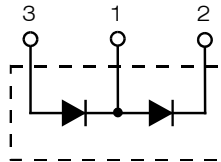
$$I_{FRMS} = 2 \times 60 \text{ A}$$

$$I_{FAVM} = 2 \times 36 \text{ A}$$

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

Preliminary Data Sheet

V_{RSM} V	V_{RRM} V	Type
900	800	PSKD 26/08
1300	1200	PSKD 26/12
1500	1400	PSKD 26/14
1700	1600	PSKD 26/16
1900	1800	PSKD 26/18



Symbol	Test Conditions	Maximum Ratings	
I_{FRMS}	$T_{VJ} = T_{VJM}$	60 A	
I_{FAVM}	$T_C = 100^\circ\text{C}; 180^\circ \text{ sine}$	36 A	
I_{FSM}	$T_{VJ} = 45^\circ\text{C}; V_R = 0$	$t = 10 \text{ ms (50 Hz), sine}$	650 A
		$t = 8.3 \text{ ms (60 Hz), sine}$	760 A
	$T_{VJ} = T_{VJM}; V_R = 0$	$t = 10 \text{ ms (50 Hz), sine}$	580 A
		$t = 8.3 \text{ ms (60 Hz), sine}$	630 A
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}; V_R = 0$	$t = 10 \text{ ms (50 Hz), sine}$	2100 A ² s
		$t = 8.3 \text{ ms (60 Hz), sine}$	2400 A ² s
	$T_{VJ} = T_{VJM}; V_R = 0$	$t = 10 \text{ ms (50 Hz), sine}$	1700 A ² s
		$t = 8.3 \text{ ms (60 Hz), sine}$	1900 A ² s
T_{VJ}		-40...+150 °C	
T_{VJM}		150 °C	
T_{stg}		-40...+125 °C	
V_{ISOL}	50/60 Hz, RMS	$t = 1 \text{ min}$	3000 V~
	$I_{ISOL} \leq 1 \text{ mA}$	$t = 1 \text{ s}$	3600 V~
M_d	Mounting torque (M5)		2.5-4/22-35 Nm/lb.in.
	Terminal connection torque (M5)		2.5-4/22-35 Nm/lb.in.
Weight	Typical including screws		90 g

Symbol	Test Conditions	Characteristic Values	
I_R	$T_{VJ} = T_{VJM}; V_R = V_{RRM}$	10 mA	
V_F	$I_F = 80 \text{ A}; T_{VJ} = 25^\circ\text{C}$	1.38 V	
V_{TO}	For power-loss calculations only	0.8 V	
r_T	$T_{VJ} = T_{VJM}$	6.1 mΩ	
Q_S	$T_{VJ} = 125^\circ\text{C}; I_F = 25 \text{ A}, -di/dt = 0.6 \text{ A}/\mu\text{s}$	50 μC	
I_{RM}		6 A	
R_{thJC}	per diode; DC current per module	} other values see Fig. 6/7	1.0 KW
			0.5 KW
R_{thJK}	per diode; DC current per module	}	1.2 KW
			0.6 KW
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	

Features

- International standard package JEDEC TO-240 AA
- Direct copper bonded Al₂O₃ -ceramic base plate
- Planar passivated chips
- Isolation voltage 3600 V~
- UL registered, E 148688

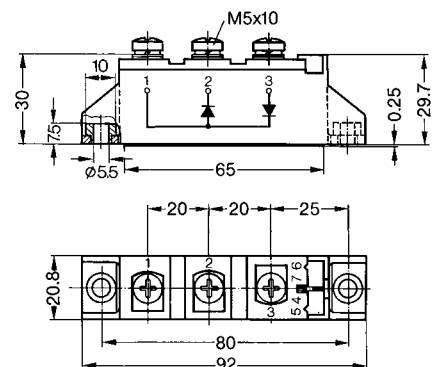
Applications

- Supplies for DC power equipment
- DC supply for PWM inverter
- Field supply for DC motors
- Battery DC power supplies

Advantages

- Space and weight savings
- Simple mounting
- Improved temperature and power cycling
- Reduced protection circuits

Dimensions in mm (1 mm = 0.0394")



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

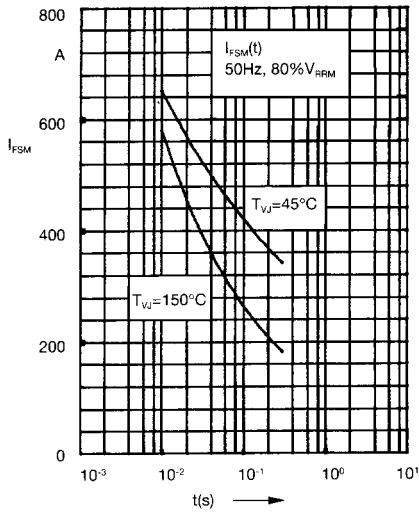


Fig. 1 Surge overload current
 I_{FSM} : Crest value, t: duration

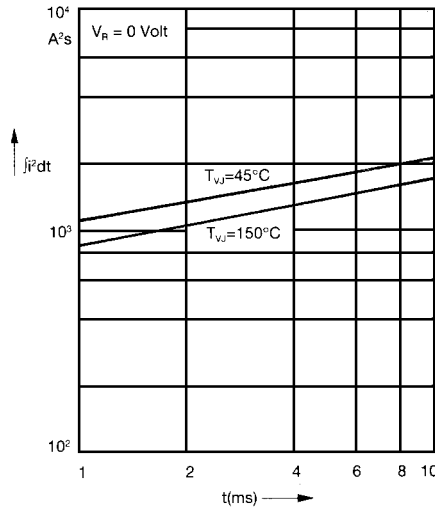


Fig. 2 j^2dt versus time (1-10 ms)

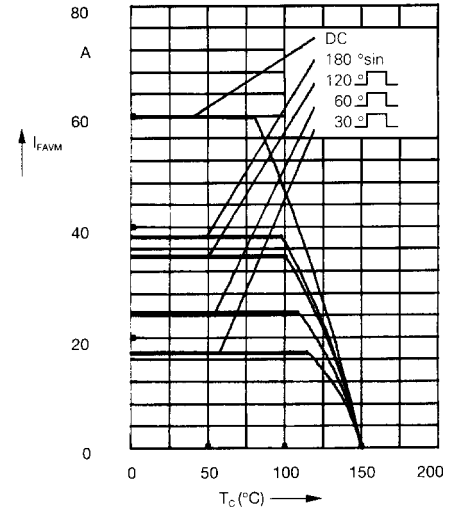


Fig. 2a Maximum forward current at case temperature

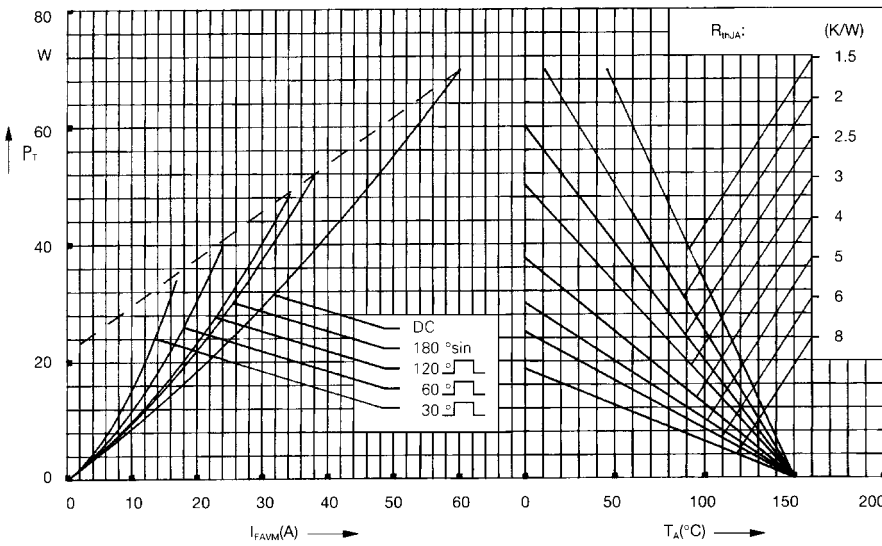


Fig. 3 Power dissipation versus forward current and ambient temperature (per diode)

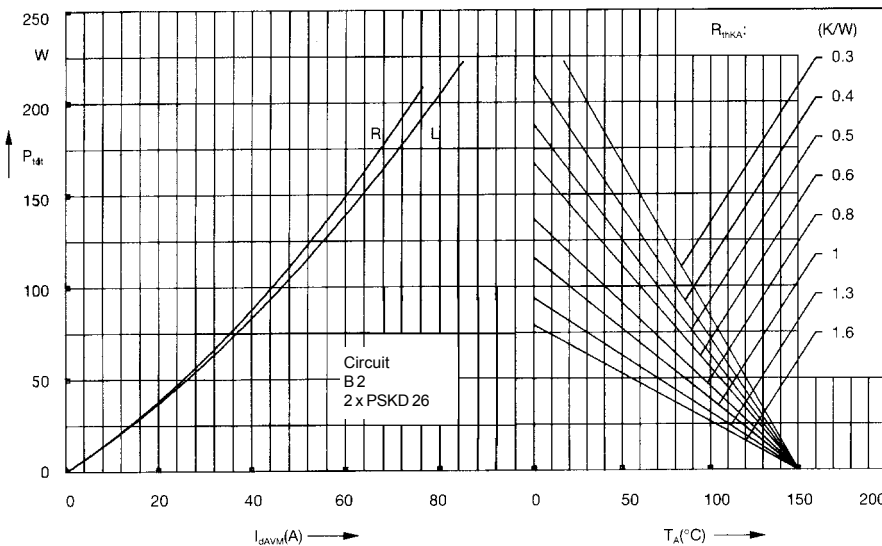


Fig. 4 Single phase rectifier bridge:
 Power dissipation versus direct output current and ambient temperature
 R = resistive load
 L = inductive load

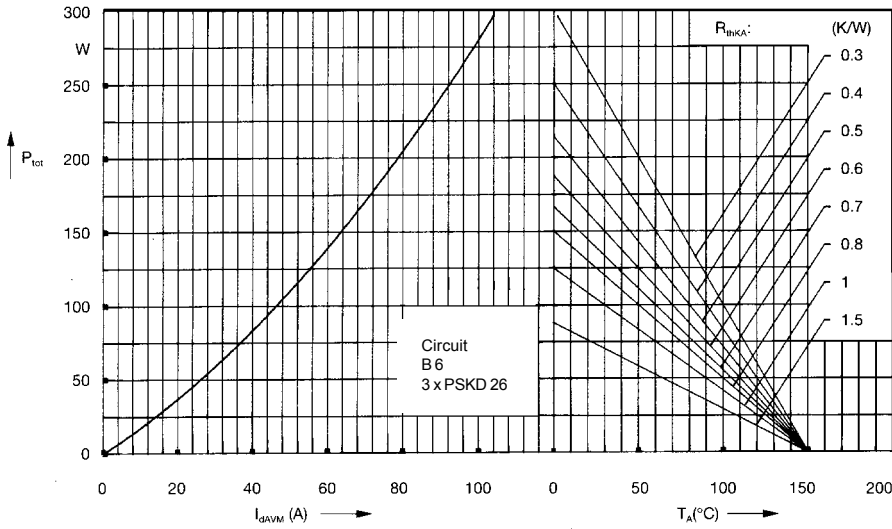


Fig. 5 Three phase rectifier bridge: Power dissipation versus direct output current and ambient temperature

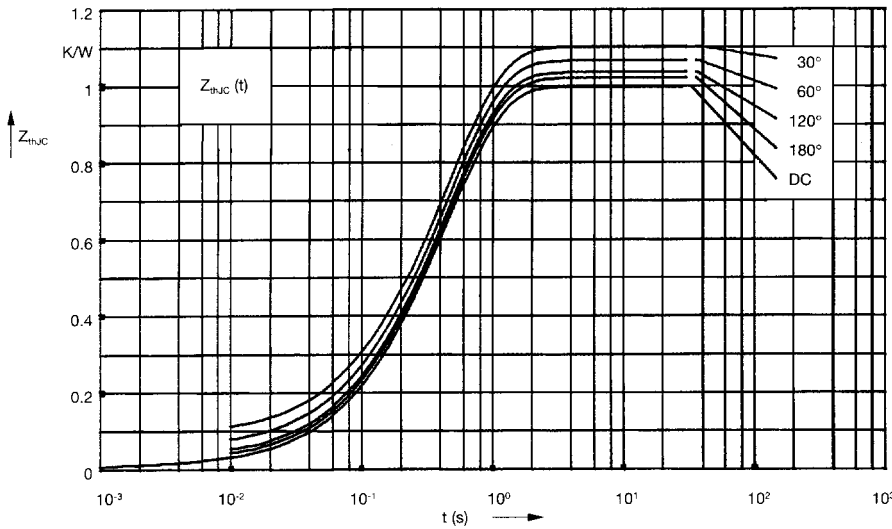


Fig. 6 Transient thermal impedance junction to case (per diode)

R_{thJC} for various conduction angles d :

d	R_{thJC} (K/W)
DC	1.00
180°	1.02
120°	1.04
60°	1.07
30°	1.10

Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.01	0.0012
2	0.03	0.095
3	0.96	0.455

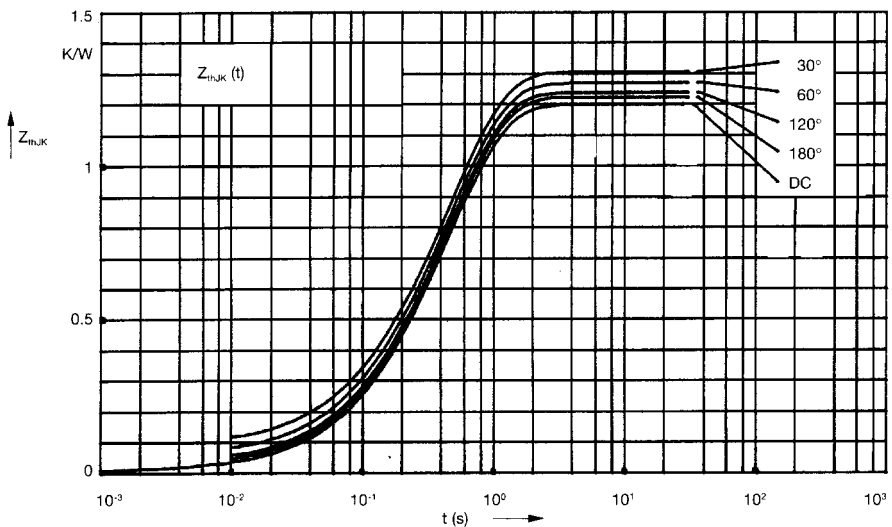


Fig. 7 Transient thermal impedance junction to heatsink (per diode)

R_{thJK} for various conduction angles d :

d	R_{thJK} (K/W)
DC	1.20
180°	1.22
120°	1.24
60°	1.27
30°	1.30

Constants for Z_{thJK} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.01	0.0012
2	0.03	0.095
3	0.96	0.455
4	0.2	0.495