

Features

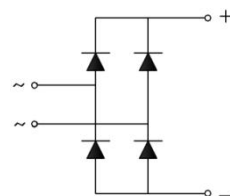
- Very low forward voltage drop
- High surge current capability
- Low thermal resistance
- High thermal conductivity



Applications

- Single phase rectifiers for power supplies
- Rectifiers for DC motor field supplies
- Industrial automation equipment
- Input rectifiers for inverter

Circuit



Module Type

Type	V_{RRM}	V_{RSM}
KBPC2502W	200V	300V
KBPC2504W	400V	500V
KBPC2506W	600V	700V
KBPC2508W	800V	900V
KBPC2510W	1000V	1100V
KBPC2512W	1200V	1300V

Maximum Ratings

Symbol	Item	Conditions	Values	Unit
I_D	Output Current	Single Phase, Sin Full Wave $T_c = 55^\circ\text{C}$	25	A
I_{FSM}	Surge Forward Current	$T_j = 25^\circ\text{C}$, $t = 50\text{Hz}(10\text{ms})$, $V_R = 0\text{V}$	300	A
I^2t	Circuit Fusing Consideration	$t = 10\text{ms}$ $T_j = 25^\circ\text{C}$	450	A^2s
V_{ISO}	Isolation Breakdown Voltage	AC 50Hz/60Hz; R.M.S; 1min	2000	V
T_j	Operating Junction Temperature		-40 to +150	$^\circ\text{C}$
T_{stg}	Storage Temperature		-40 to +125	$^\circ\text{C}$
M_s	Mounting Torque	To Heatsink(M5)	2.5~3	N·m
Weight	Module (Approximately)		18	g

Thermal Characteristics

Symbol	Item	Conditions	Values	Unit
$R_{th(j-c)}$	Thermal Impedance, Max	Junction to Case(Per Total)	2.0	$^\circ\text{C/W}$
		Junction to Case(Per Diode)	8.0	$^\circ\text{C/W}$

Electrical Characteristics

Symbol	Item	Conditions	Values			Unit
			Min.	Typ.	Max.	
V_{FM}	Forward Voltage Drop, Max	$T_j = 25^\circ\text{C}$ $I_F = 12.5\text{A}$	—	—	1.1	V
I_{RRM}	Repetitive Peak Reverse Current, Max	$T_j = 25^\circ\text{C}$ $V_R = V_{RRM}$	—	—	0.1	mA
		$T_j = 150^\circ\text{C}$ $V_R = V_{RRM}$	—	—	3	
V_{T0}	Threshold Voltage, for power loss calculation only	$T_j = 125^\circ\text{C}$	0.75			V
r_T	Slope Resistance, for power loss calculation only	$T_j = 125^\circ\text{C}$	5.1			m Ω

Single Phase Rectifier Bridge

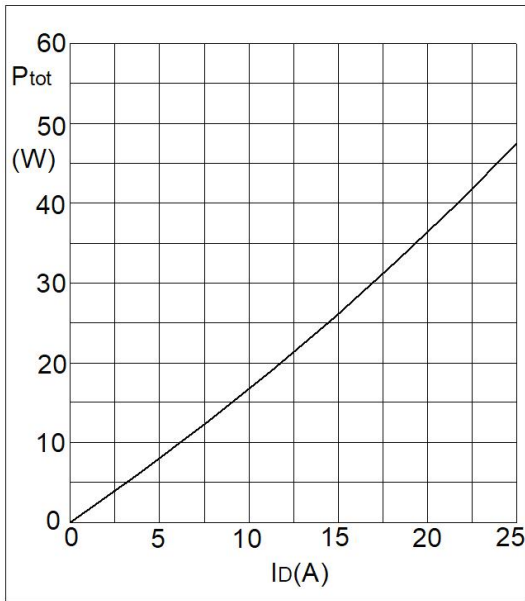


Fig1. Power Dissipation

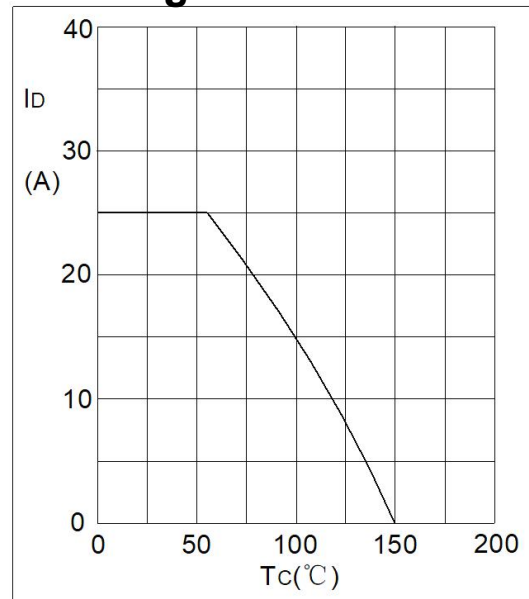


Fig2. Forward Current Derating Curve

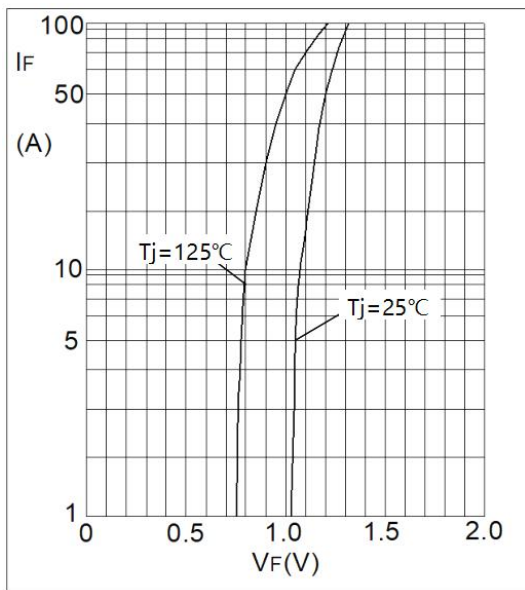


Fig3. Forward Characteristics

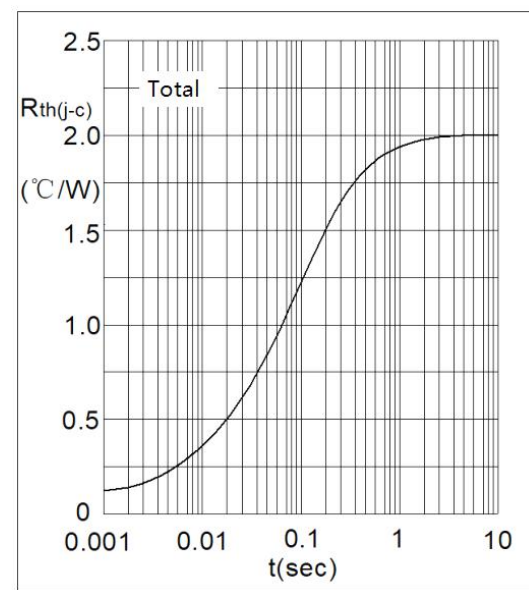


Fig4. Transient Thermal impedance

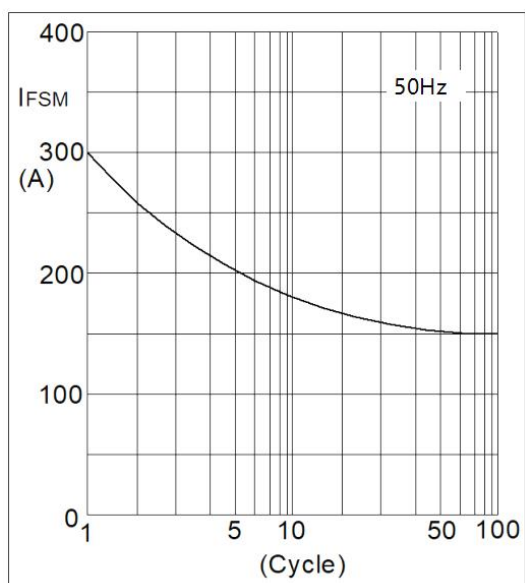
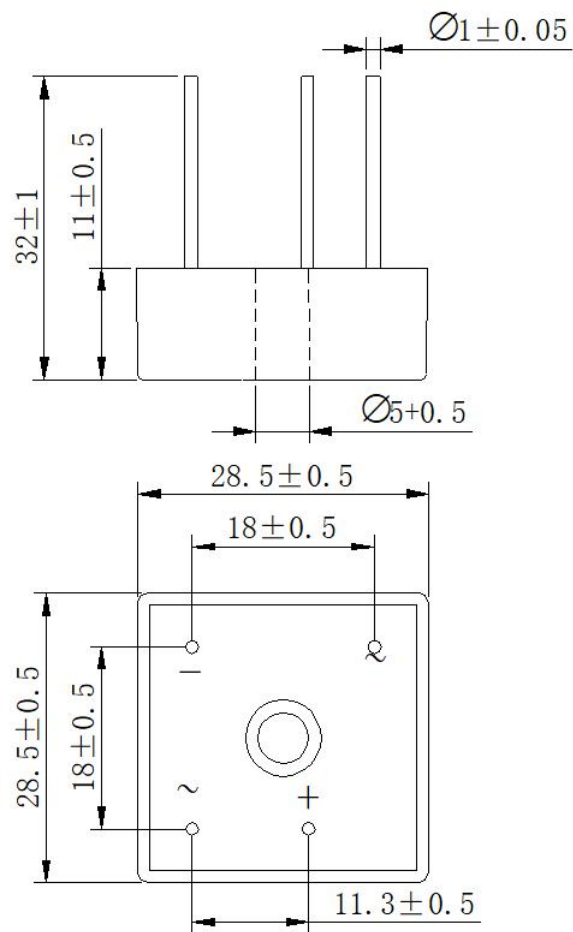


Fig5. Max Non-Repetitive Forward Surge Current

CASE: KBPCW



Dimensions in mm