

Three Phase Bridge Rectifier

Features

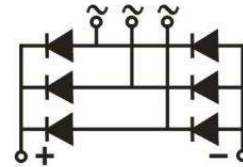
- Very low forward voltage drop
- High surge current capability
- Low thermal resistance
- High thermal conductivity
- Reverse Voltage : 1200 to 1600V
- Forward Current : 50A



SKBPC

Applications

- Inverter for AC or DC motor control
- Current stabilized power supply
- Input rectifiers for variable frequency drives
- Input rectifiers for PWM inverter



Module Type

Type	VRRM	VRSM
SKBPC5012	1200V	1300V
SKBPC5014	1400V	1500V
SKBPC5016	1600V	1700V

Maximum Ratings

Item	Conditions	Symbol	Values	Unit
Output Current	Three Phase, Full Wave Tc = 78°C	I _D	50	A
Surge Forward Current	T _j =25°C, t=50Hz(10ms), V _R =0V	I _{FSM}	500	A
Circuit Fusing Consideration	t=10ms T _j =25°C	I ² t	1025	A ² s
Isolation Breakdown Voltage	AC 50Hz/60Hz; R.M.S; 1min	V _{ISO}	2500	V
Operating Junction Temperature		T _j	-40 to +150	°C
Storage Temperature		T _{stg}	-40 to +125	°C
Mounting Torque	To Heatsink(M5)	M _s	2.5~3	N·m
Module (Approximately)		Weight	35	g

Thermal Characteristics

Item	Conditions	Symbol	Values	Unit
Thermal Impedance, Max	Junction to Case(Per Total)	$R_{th(j-c)}$	0.75	$^{\circ}C/W$
	Junction to Case(Per Diode)		4.5	$^{\circ}C/W$

Electrical Characteristics

Item	Conditions	Symbol	Values			Unit
			Min	Typ	Max	
Forward Voltage Drop, Max	$T_j = 25^{\circ}C, I_F = 25A$	V_{FM}	-	-	1.18	V
Repetitive Peak Reverse Current, Max	$T_j = 25^{\circ}C, V_R = V_{RRM}$	I_{RRM}	-	-	0.1	mA
	$T_j = 150^{\circ}C, V_R = V_{RRM}$		-	-	3	
Threshold Voltage, for power loss calculation only	$T_j = 125^{\circ}C$	V_{T0}	0.75			V
Slope Resistance, for power loss calculation only	$T_j = 125^{\circ}C$	r_T	4.0			m Ω

Ratings and Characteristic Curves ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

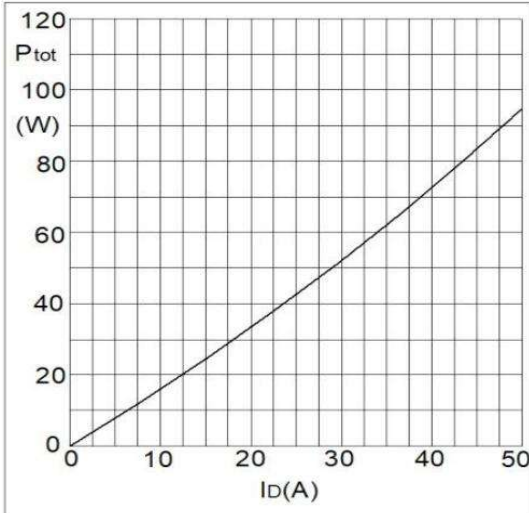


Fig1. Power Dissipation

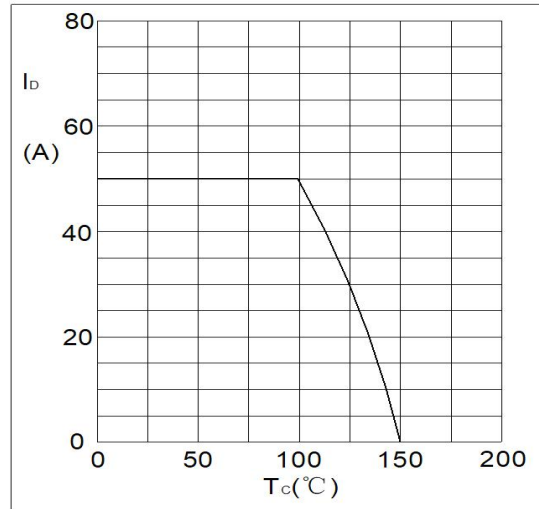


Fig2. Forward Current Derating Curve

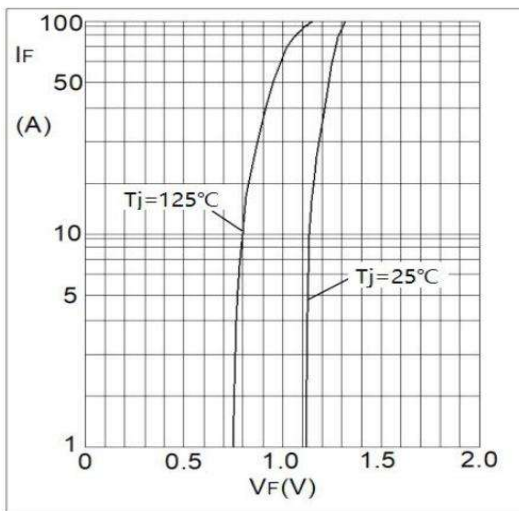


Fig3. Forward Characteristics

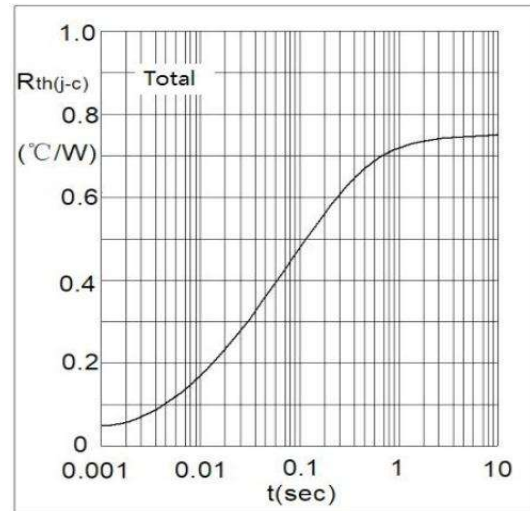


Fig4. Transient Thermal Impedance

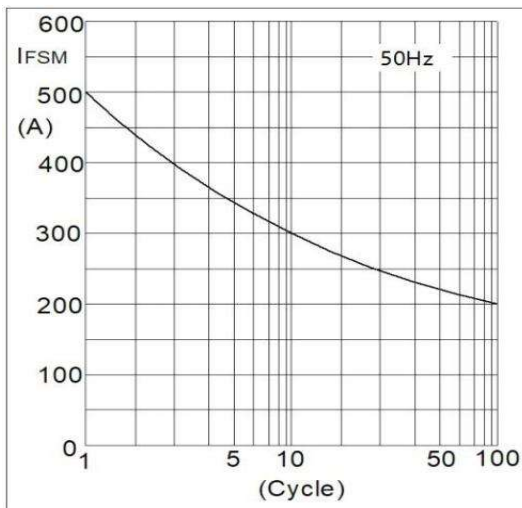
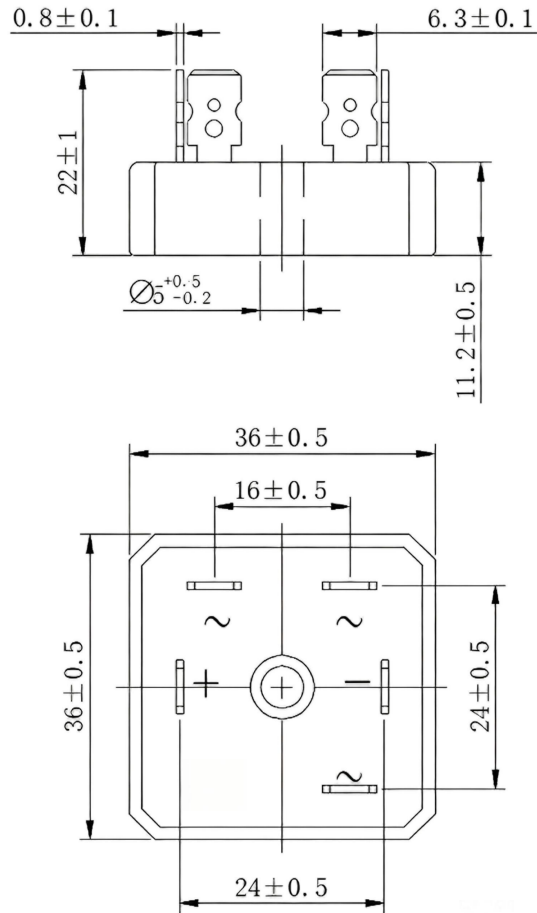


Fig5. Max Non-Repetitive Forward Surge Current

Package Outlines (Dimensions in mm)

Plastic surface mounted package(SKBPC)



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