

Three Phase Bridge Rectifier

Features

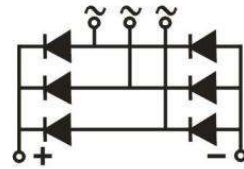
- Aluminum oxide DBC
- Glass passivated chip
- Very low forward voltage drop
- Low thermal resistance
- High thermal conductivity
- Reverse Voltage : 1200 to 2000V
- Forward Current : 35A



MT

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
MT3512	1200V	1300V
MT3516	1600V	1700V
MT3518	1800V	1900V
MT3520	2000V	2100V

Maximum Ratings

Item	Conditions	Symbol	Values	Unit
Output Current	Three Phase, Full Wave $T_c=102^{\circ}\text{C}$	I_b	35	A
Surge Forward Current	$T_j=25^{\circ}\text{C}$, $t=50\text{Hz}(10\text{ms})$, $V_R=0\text{V}$	I_{FSM}	400	A
Circuit Fusing Consideration	$t=10\text{ms}$ $T_j=25^{\circ}\text{C}$	I^2t	800	A^2s
Isolation Breakdown Voltage	AC 50Hz/60Hz; R.M.S; 1min	V_{iso}	2500	V
Operating Junction Temperature		T_j	-40 to +150	$^{\circ}\text{C}$
Storage Temperature		T_{stg}	-40 to +125	$^{\circ}\text{C}$
Mounting Torque	To Heatsink(M5)	M_s	$3\pm 15\%$	N·m
Module (Approximately)		Weight	25	g

Thermal Characteristics

Item	Conditions	Symbol	Values	Unit
Thermal Impedance, Max	Junction to Case(Per Total)	$R_{th(j-c)}$	0.5	$^{\circ}C/W$
	Junction to Case(Per Diode)		3.0	$^{\circ}C/W$

Electrical Characteristics

Item	Conditions	Symbol	Values			Unit
			Min	Typ	Max	
Forward Voltage Drop, Max	$T_j = 25^{\circ}C, I_F = 17.5A$	V_{FM}	-	-	1.18	V
Repetitive Peak Reverse Current, Max	$T_j = 25^{\circ}C, V_R = V_{RRM}$	I_{RRM}	-	-	0.05	mA
	$T_j = 150^{\circ}C, V_R = V_{RRM}$		-	-	5	
Threshold Voltage, for power loss calculation only	$T_j = 125^{\circ}C$	V_{T0}	0.85			V
Slope Resistance, for power loss calculation only	$T_j = 125^{\circ}C$	r_T	14.3			m Ω

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

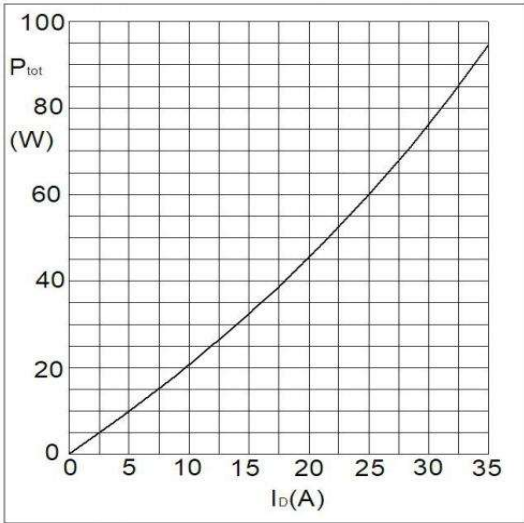


Fig1. Power Dissipation

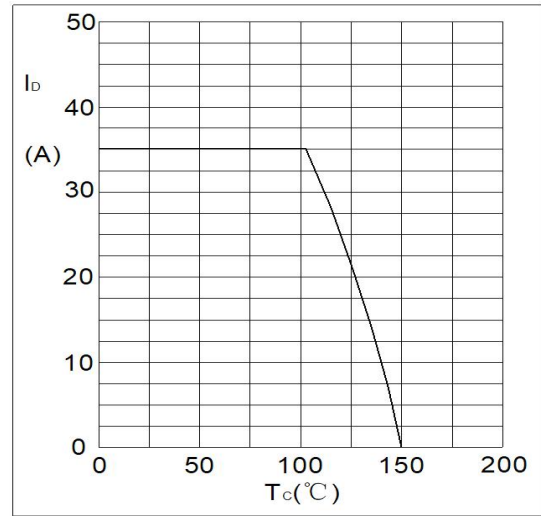


Fig2. Forward Current Derating Curve

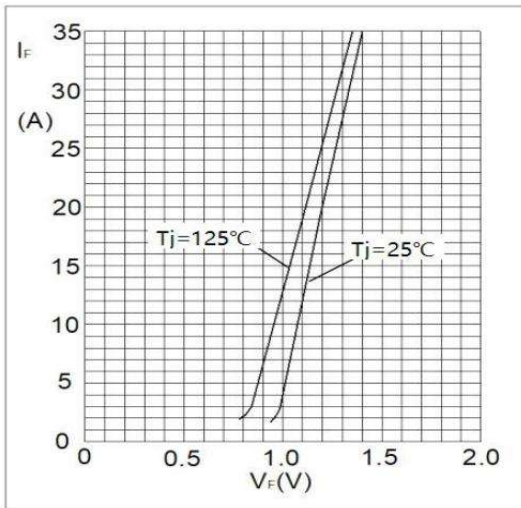


Fig3. Forward Characteristics

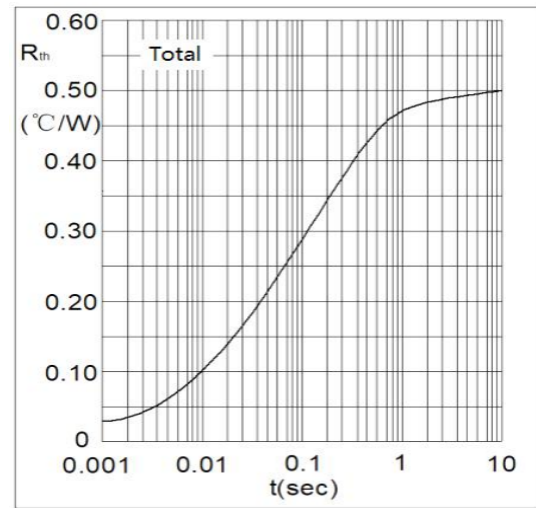


Fig4. Transient Thermal Impedance

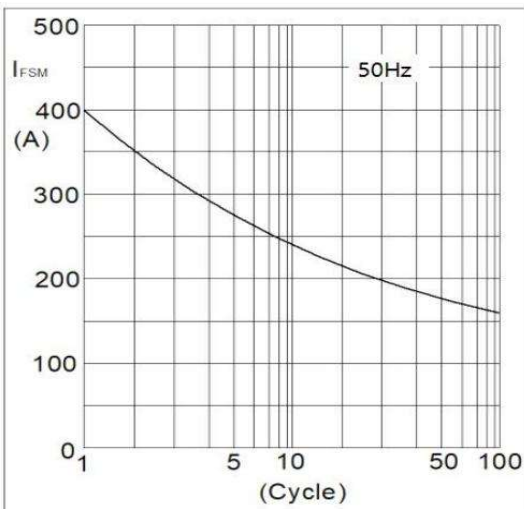
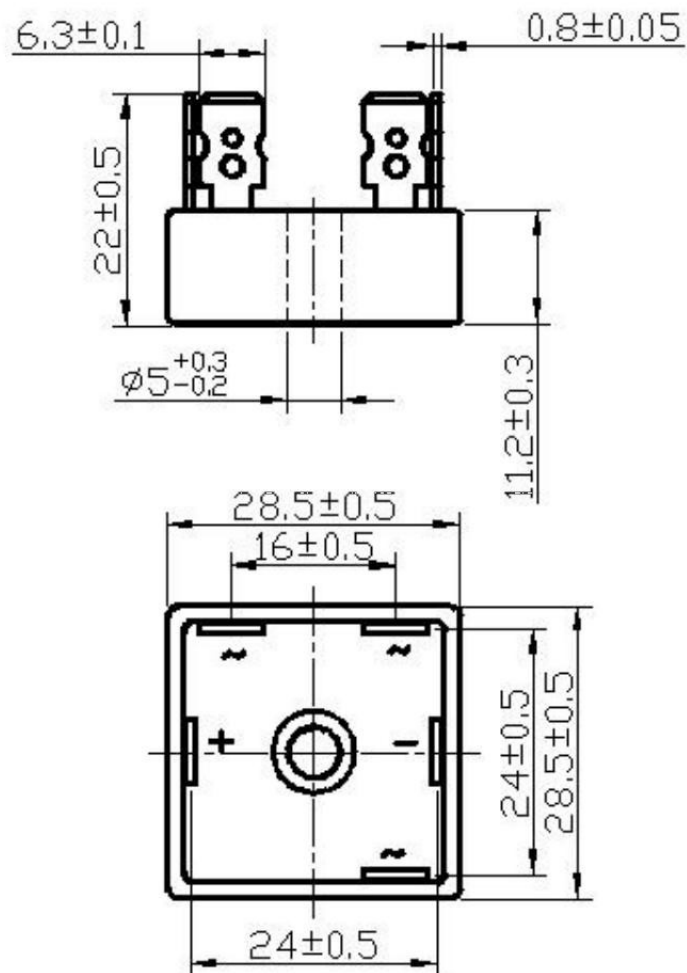


Fig5. Max Non-Repetitive Forward Surge Current

Package Outlines (Dimensions in mm)

Plastic surface mounted package(MT)



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