# DIODE (THREE PHASES BRIDGE TYPE)
DF50AA120/160

UL;E76102（M）

Power Diode Module **DF50AA** is designed for three phase full wave rectification, which has six diodes connected in a three phase bridge configuration. The mounting base of the module is electrically isolated from semiconductor elements for simple heatsink construction Output DC current is 50Amp （Tc＝114℃） Repetitive peak reverse voltage is up to 1,600V.

● TjMax＝150℃
● Isolated mounting base
● High reliability by unique glass passivation

（**Applications**）
AC, DC Motor Drive/AVR/Switching
-for three phase rectification
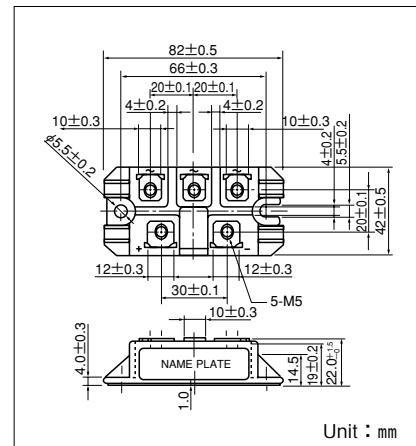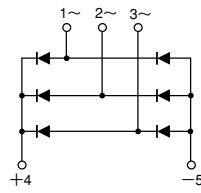
Unit：mm

■Maximum Ratings

（Tj＝25℃ unless otherwise specified）

Symbol	Item	Ratings		Unit
		DF50AA120	DF50AA160	
VRRM	Repetitive Peak Reverse Voltage	1200	1600	V
VRSM	Non-Repetitive Peak Reverse Voltage	1300	1700	V

Symbol	Item	Conditions	Ratings	Unit
ID	Output Current （D.C.）	Three phase full wave. Tc：114℃	50	A
IFSM	Surge Forward Current	1cycle, 50/60Hz, peak value, non-repetitive	640/700	A
I²t	I²t	Value for one cycle of surge current	2000	A²S
Tj	Operating Junction Temperature		−40 to ＋150	℃
Tstg	Storage Temperature		−40 to ＋125	℃
VISO	Isolation Breakdown Voltage （R.M.S.）	A.C. 1 minute	2500	V
	Mounting Torque — Mounting （M5）	Recommended Value 1.5-2.5 （15-25）	2.7 （28）	N・m (kgf・cm)
	Mounting Torque — Terminal （M5）	Recommended Value 1.5-2.5 （15-25）	2.7 （28）	N・m (kgf・cm)
	Mass	Typical Value	160	g

■Electrical Characteristics

Symbol	Item	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
IRRM	Repetitive Peak Reverse Current	Tj＝150℃ at VRRM			8.0	mA
VFM	Forward Voltage Drop	Tj＝25℃，IFM＝50A, Inst. measurement			1.2	V
Rth(j-c)	Thermal Impedance	Junction to case			0.3	℃/W

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Maximum Forward Characteristics

Forward Current (A) vs Forward Voltage Drop V_F (V)

Tj=25℃
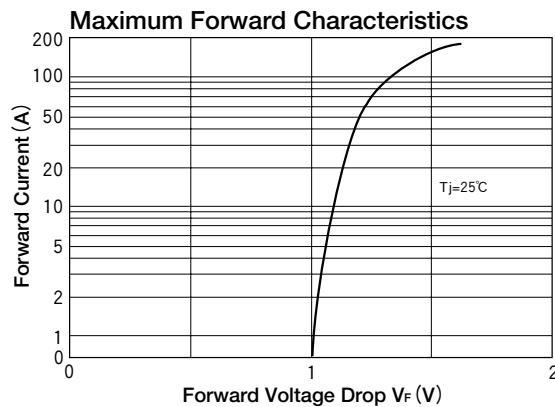
Average Forward Current vs. Power Dissipation

Power Dissipation Pav (W) vs Output Current I_D (A)

Three Phase

Output Current vs. Allowable case Temp

Allowable Case Temperature Tc (℃) vs Output Current I_D (A)

Three Phase
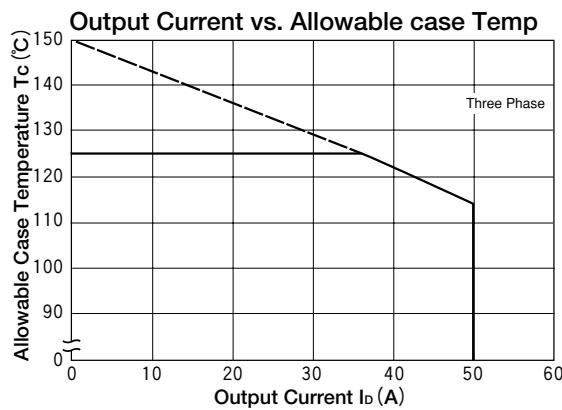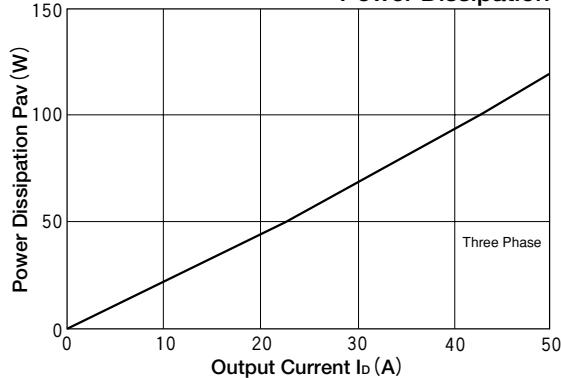
Cycle Surge Forward Current Rating (Non-Repetitive)

Surge Forward Current I_F (A) vs Time (Cycles)

Per one element
Tj=25℃ start

60Hz
50Hz

Transient Thermal Impedance (max)

Transient Thermal Impedance θj-c (℃/W) vs Time t (sec)

Junction to Case

$10^{-1} \sim 5 \times 10$ sec.

$10^{-3} \sim 10^{-1}$ sec.

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