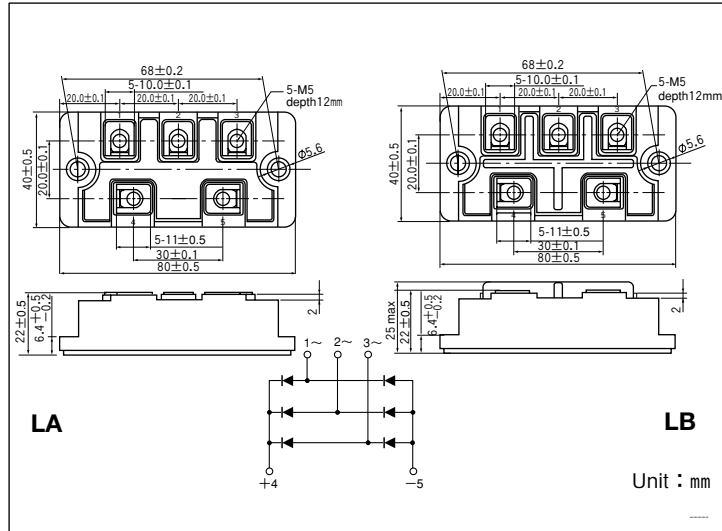# Diode Module

DF60LA/LB80/160

《Features》

Power Diode Module DF60LA/LB 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 60Amp （Tc＝111℃） Repetitive peak reverse voltage is up to 1600V.

● TjMax＝150℃
● Isolated mounting base

《Applications》

・AC, DC Motor Drive / AVR /
　Switching-for three phase rectification

LA   LB

Unit：mm

■ Maximum Ratings (Tj=25℃ unless otherwise specified)

Item	Symbol	Unit	DF60LA/LB80	DF60LA/LB160
Repetitive Peak Reverse Voltage	V_{RRM}	V	800	1600
Non-Repetitive Peak Reverse Voltage	V_{RSM}	V	960	1700

Item		Symbol	Unit	Ratings	Conditions
Output Current (D.C.)		I_D	A	60	Three phase full wave, T_C=111℃
Surge Forward Current		I_{FSM}	A	730/800	1/2cycle, 50/60Hz, Peak value, non-repetitive
I^2t		I^2t	A^2s	2600	Value for one cycle of surge current
Operating Junction Temperature		T_j	℃	-40 to +150	
Storage Temperature		T_{stg}	℃	-40 to +125	
Isolation Breakdown Voltage(R.M.S.)		V_{ISO}	V	2500	A.C. 1minute
Mounting torque	Mounting (M5)		N·m (kgf·cm)	2.7(28)	Recommended Value 1.5 to 2.5(15 to 25)
	Terminal (M5)			2.7(28)	Recommended Value 1.5 to 2.5(15 to 25)
Mass			g	100	Typical value

■ Electrical Characteristics (Tj=25℃ unless otherwise specified)

Item	Symbol	Unit	Ratings	Conditions
Repetitive Peak Reverse Current	I_{RRM}	mA	8	T_j=150℃ at V_{RRM}
Forward Voltage Drop	V_{FM}	V	1.30	I_F=60A, Inst. measurement
Threshold Voltage	$V_{(TO)}$	V	0.85	T_j=150℃
Dynamic Resistance	rt	mΩ	5.8	T_j=150℃
Thermal Resistance	$R_{th(j-c)}$	℃/W	0.25	Junction to case
Interface Thermal Resistance	$R_{th(c-f)}$	℃/W	0.1	Case to Heat sink Thermal conductivity(Silicon grease)≒7×10^{-3}[W/cm·℃]

Maximum Forward Characteristics

Forward Current I_F [A] vs. Forward Voltage Drop V_F [V]

- Max.
- Typ.

$T_j = 25°C$

Output Current vs. Power Dissipation

Power Dissipation [W] vs. Output Current [A]

Three Phase

Output Current vs. Allowable Case Temperature

Allowable Case Temperature [°C] vs. Output Current [A]

Three Phase

Surge Forward Current Rating 《Non-Repetitive》

Surge Forward Current [A] vs. Times [cycles]

Per Element

60Hz

50Hz

Single phase half wave
$T_j = 25°C$ start

Transient Thermal Impedance

Transient Thermal Impedance [°C/W] vs. Time [sec.]

Junction to Case

Maximum