

3-Phase Diode Bridge

DF100NB160

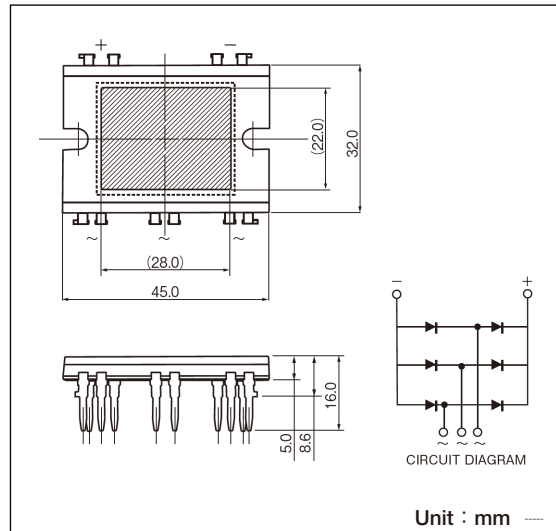
UL; E76102

《Features》

- Power cycle capability (Long-term reliability) is 3 times better than before thanks to the use of "Transfer Molding Package" (at $\Delta T_j = 100^\circ\text{C}$)
- Volume ratio of 1/10, footprint size 1/2 compare to our existing product
- Reduced thermal resistance with unique internal structure and copper heat plate
- Dual terminals for high capability and reliable solder contacts

《Applications》

- Packaged Air Conditioner / Motor Drives / Servo Controller / Battery Charger / Power Supply



■ Maximum Ratings ($T_j=25^\circ\text{C}$ unless otherwise specified)

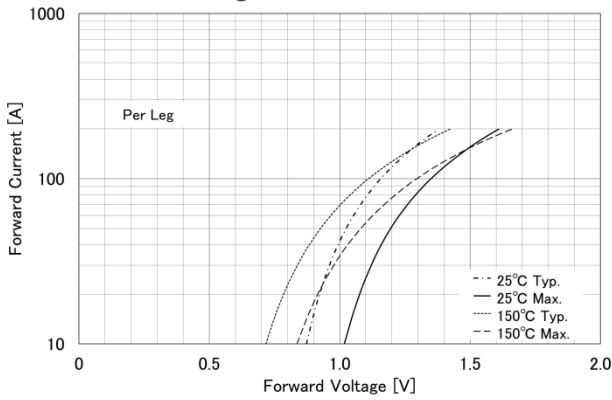
Item	Symbol	Unit	DF100NB160
Repetitive Peak Reverse Voltage	V_{RRM}	V	1600
Non-Repetitive Peak Reverse Voltage	V_{RSM}	V	1700

Item	Symbol	Unit	Ratings	Conditions
Average Output Current	I_D	A	100	Three Phase Full Wave, $T_c=98^\circ\text{C}$
Surge Forward Current	I_{FSM}	A	910/1000	50/60Hz Sin.Wave, Peak Value, Non-Repetitive
I^2t (for fusing)	I^2t	A^2s	4100	50/60Hz Sin.Wave
Isolation Voltage	V_{ISO}	V	2500	AC, RMS, 1min
Operating Junction Temperature	T_j	$^\circ\text{C}$	-40~+150	
Storage Temperature	T_{stg}	$^\circ\text{C}$	-40~+125	
Mounting Torque(M4)	-	N·m	1.5	Recommended Value 1.0~1.4
Weight	-	g	24	Typical Value

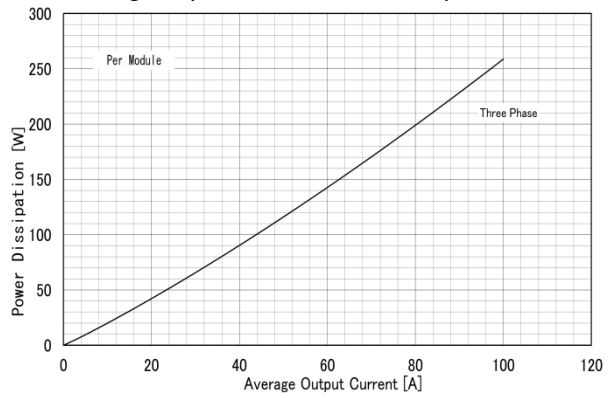
■ Electrical Characteristics ($T_j=25^\circ\text{C}$ unless otherwise specified)

Item	Symbol	Unit	Ratings			Conditions
			Min.	Typ.	Max.	
Reverse Current	I_R	mA		4.5	8.0	$T_j=T_{jmax}$, $V_R=V_{RRM}$, Per Leg
Forward Voltage	V_F	V		1.16	1.35	$I_F=100\text{A}$, Per Leg
Threshold Voltage	$V_{(TO)}$	V		0.9	1.0	$T_j=25^\circ\text{C}$
				0.7	0.9	$T_j=T_{jmax}$
Forward Slope Resistance	r_T	$\text{m}\Omega$		2.8	3.2	$T_j=25^\circ\text{C}$
				3.9	4.5	$T_j=T_{jmax}$
Thermal Resistance	$R_{th(j-c)}$	$^\circ\text{C}/\text{W}$			0.20	Junction to Case (Per Module)
	$R_{th(c-f)}$	$^\circ\text{C}/\text{W}$			0.14	Case to Fin (Per Module) Thermal conductivity (Si grease) $=9 \times 10^{-3} [\text{W}/\text{cm}\cdot^\circ\text{C}]$

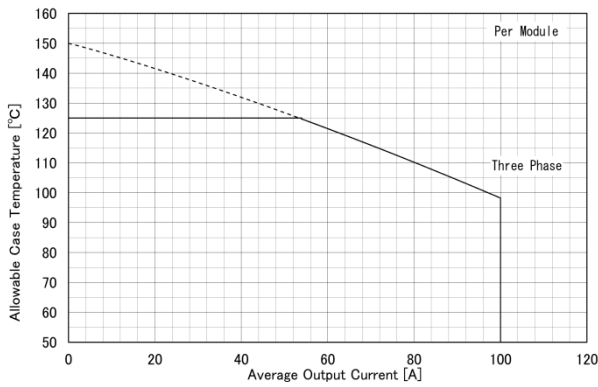
Forward Voltage Characteristics



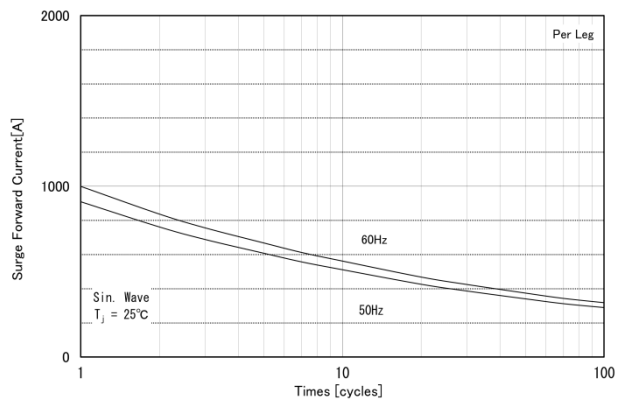
Average Output Current vs. Power Dissipation



Average Output Current vs. Allowable Case Temperature



Surge Forward Current Rating (Non-Repetitive)



Transient Thermal Impedance

