

# 3-Phase Diode Bridge

# DF100NB160

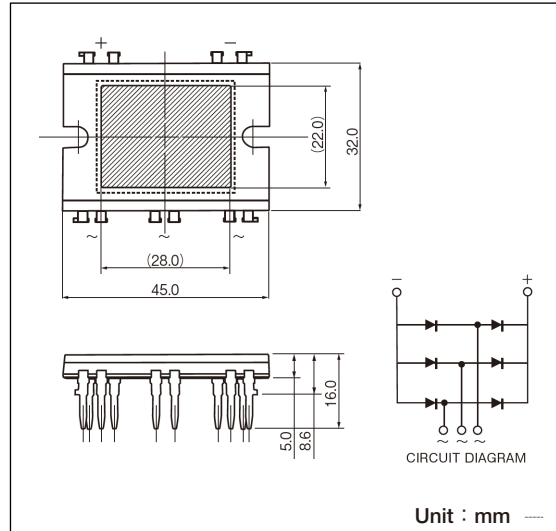
UL; E76102

《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)

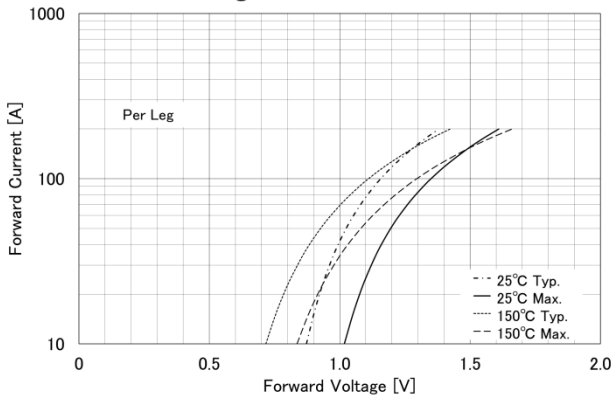
Item	Symbol	Unit	DF100NB160
Repetitive Peak Reverse Voltage	$V_{RRM}$	V	1600
Non-Repetitive Peak Reverse Voltage	$V_{RSM}$	V	1700

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)	$I^2t$	$\text{A}^2\text{s}$	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

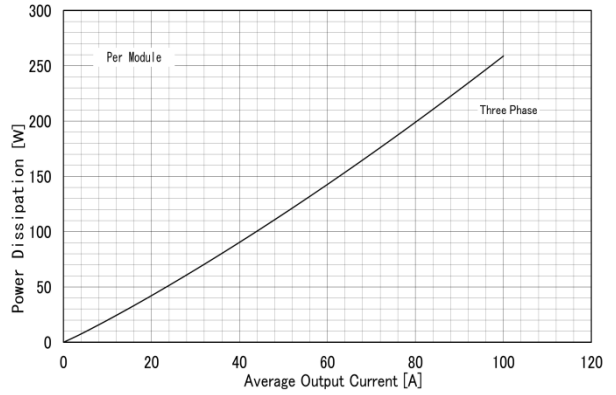
■ Electrical Characteristics ( $T_j=25^\circ\text{C}$  unless otherwise specified)

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	$r_T$	m $\Omega$		2.8	3.2	$T_j=25^\circ\text{C}$
				3.9	4.5	$T_j=T_{jmax}$
Thermal Resistance	$R_{th(j-c)}$	$^\circ\text{C/W}$			0.20	Junction to Case (Per Module)
	$R_{th(c-f)}$	$^\circ\text{C/W}$			0.14	Case to Fin (Per Module) Thermal conductivity (Si grease) $=9 \times 10^{-3}[\text{W}/\text{cm}\cdot^\circ\text{C}]$

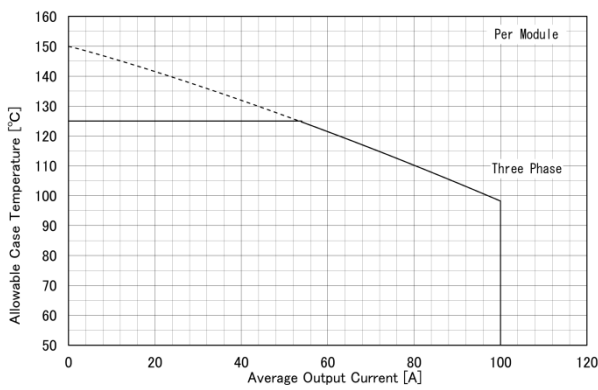
### Forward Voltage Characteristics



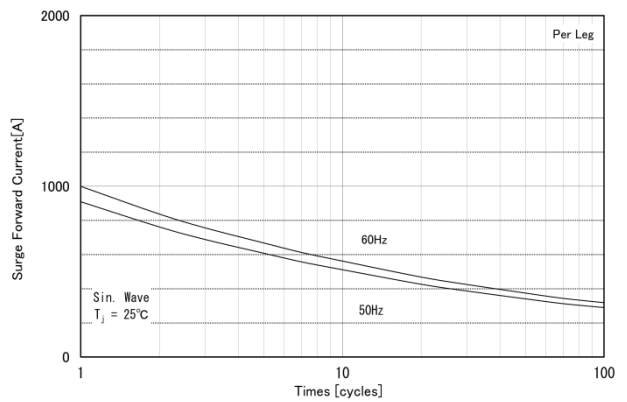
### Average Output Current vs. Power Dissipation



### Average Output Current vs. Allowable Case Temperature



### Surge Forward Current Rating (Non-Repetitive)



### Transient Thermal Impedance

