

THREE PHASE DIODE+THYRISTOR

DFA100BA80/160

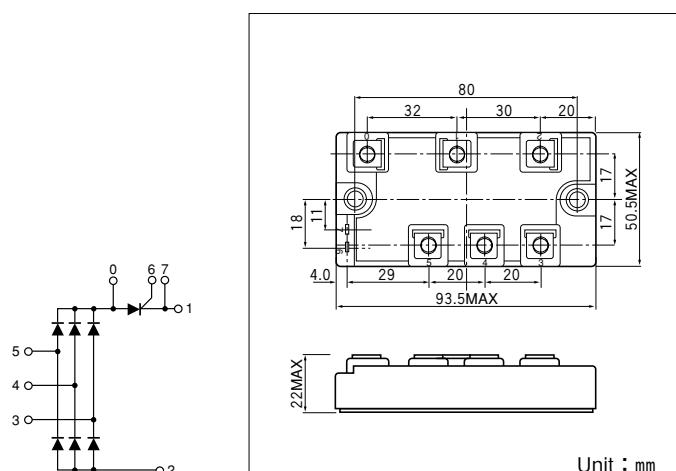
SanRex Power Module, **DFA100BA**, is complex isolated module which is designed for rash current circuit.

It contains six diodes connected in a three phase bridge configuration, and a thyristor connected to a direct current line.

- This Module is designed very compactly. Because diode module and thyristor put together.
- This Module is also isolated type between electrode terminal and mounting base. So you can put this Module and other one together in a same fin.

(Application)

- Inverter for AC or DC motor control, Current stabilized power supply, Switching power supply.



● DIODE

■ Maximum Ratings

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

Symbol	Item	Ratings		Unit
		DFA100BA80	DFA100BA160	
V_{RRM}	Repetitive Peak Reverse Voltage	800	1600	V
V_{RSM}	Non-Repetitive Peak Reverse Voltage	960	1700	V

Symbol	Item	Conditions	Ratings	Unit
I_D	Output Current (D.C.)	Three phase full wave, $T_c=98^\circ\text{C}$	100	A
I_{FSM}	Surge forward current	1 cycle, 50/60Hz, peak value, non-repetitive	1186/1300	A
T_j	Operating Junction Temperature		-40 to +150	°C
T_{stg}	Storage Temperature		-40 to +125	°C
V_{iso}	Isolation Breakdown Voltage (R.M.S.)	A.C. 1minute	2500	V
I_{FSM}	Mounting Torque	Mounting (M5) Recommended Value 1.5-2.5 (15-25)	2.7 (28)	N·m (kgf·cm)
	Terminal (M5)	Recommended Value 1.5-2.5 (15-25)	2.7 (28)	
	Mass	Typical Value	150	g

■ Electrical Characteristics

Symbol	Item	Conditions	Ratings	Unit
I_{RRM}	Repetitive Peak Reverse Current,max.	$T_j=150^\circ\text{C}$, $V_R=V_{RRM}$	12	mA
V_{FM}	Forward Voltage Drop,max.	$T_j=25^\circ\text{C}$, $I_F=100\text{A}$, Inst. measurement	1.30	V
$R_{th(j-c)}$	Thermal Impedance, max.	Junction to Case (TOTAL)	0.20	°C/W
$R_{th(c-f)}$	Thermal Impedance, max.	Case to Fin	0.10	°C/W

● THYRISTOR

■ Maximum Ratings

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

Symbol	Item	Ratings		Unit
		DFA100BA80	DFA100BA160	
V_{RRM}	Repetitive Peak Reverse Voltage	800	1600	V
V_{RSM}	Non-Repetitive Peak Reverse Voltage	960	1700	V
V_{DRM}	Repetitive Peak off-State Voltage	800	1600	V

Symbol	Item	Conditions	Ratings	Unit
$I_{T(AV)}$	Average On-State Current	Singl phase half wave. 180° conduction, $T_c=92^\circ\text{C}$	100	A
I_{TSM}	Surge On-State Current	1 cycle, 50/60Hz, peak value, non-repetitive	1186/1300	A
I^2t	I^2t		7030	A^2s
di/dt	Critical Rate of Rise of On-State Current	$I_G=100\text{mA}$, $V_D=\frac{1}{2}V_{DRM}$, $di/dt=0.1\text{A}/\mu\text{s}$	150	$\text{A}/\mu\text{s}$
V_{ISO}	Isolation Breakdown Voltage (R.M.S.)	A.C. 1minute	2500	V
T_j	Operating Junction Temperature		-40 to +135	$^\circ\text{C}$
T_{STG}	Storage Temperature		-40 to +125	$^\circ\text{C}$
Mounting Torque	Mounting (M5)	Recommended Value 1.5-2.5 (15-25)	2.7 (28)	$\text{N}\cdot\text{m}$ ($\text{kgf}\cdot\text{cm}$)
	Terminals (M5)	Recommended Value 1.5-2.5 (15-25)	2.7 (28)	
Mass		Typical Value	150	g

■ Electrical Characteristics

Symbol	Item	Conditions	Ratings	Unit
I_{DRM}	Repetitive Peak Off-State Current,max.	$T_j=135^\circ\text{C}$, $V_D=V_{DRM}$	70	mA
I_{RRM}	Repetitive Peak Reverse Current,max.	$T_j=135^\circ\text{C}$, $V_D=V_{RRM}$	70	mA
V_{TM}	Peak On-State Voltage,max.	$T_j=25^\circ\text{C}$, $I_T=100\text{A}$, Inst. measurement	1.20	V
I_{GT}	Gate Trigger Current,max.	$V_D=6\text{V}$, $I_T=1\text{A}$	70	mA
V_{GT}	Gate Trigger Voltage,max.	$V_D=6\text{V}$, $I_T=1\text{A}$	3	V
dv/dt	Critical Rate of Rise of Off-State Voltage,min.	$T_j=125^\circ\text{C}$, $V_D=\frac{2}{3}V_{DRM}$	500	$\text{V}/\mu\text{s}$
$R_{th(j-c)}$	Thermal Impedance, max.	Junction to Case	0.36	$^\circ\text{C}/\text{W}$
$R_{th(c-f)}$	Thermal Impedance, max.	Case to Fin	0.10	$^\circ\text{C}/\text{W}$

