

THREE PHASE DIODE+THYRISTOR

DFA75BA80/160

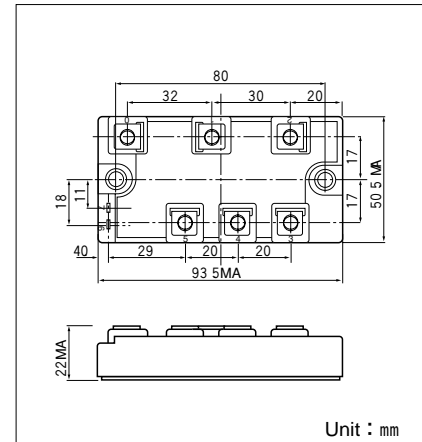
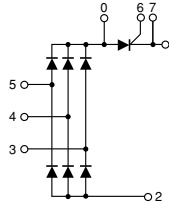
SanRex Power Module, DFA75BA, is complex isolated module which is designed for rash current circuit.

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 electorode 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

($T_j = 25^\circ\text{C}$, U_n l)

Symbol	Item	Ratings		Unit
		DFA75BA80	DFA75BA160	
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, $T_c = 101^\circ\text{C}$	75	A	
I_{FSM}	Surge forward current	1cycle, 50/60Hz, peak value, non-repetitive	910/1000	A	
T_j	Operating Junction Temperature		-40 to +150	$^\circ\text{C}$	
T_{stg}	Storage Temperature		-40 to +125	$^\circ\text{C}$	
V_{iso}	Isolation Breakdown Voltage (R.M.S.)	A.C. 1minute	2500	V	
	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.	$T_j = 150^\circ\text{C}$, $V_R = V_{RRM}$	8	mA
V_{FM}	Forward Voltage Drop, max.	$T_j = 25^\circ\text{C}$, $I_F = 75\text{A}$, Inst. measurement	1.30	V
$R_{th(j-c)}$	Thermal Impedance, max.	Junction to Case (TOTAL)	0.25	$^\circ\text{C}/\text{W}$
$R_{th(c-f)}$	Thermal Impedance, max.		0.10	$^\circ\text{C}/\text{W}$

DFA75BA80/160

● THYRISTOR

■ Maximum Ratings

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

Symbol	Item	Ratings		Unit
		DFA75BA80	DFA75BA160	
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 halfwave, 180° conduction, $T_c=99^\circ\text{C}$	75	A	
I_{TSM}	Surge On-State Current	1 cycle, 50/60Hz, peak value, non-repetitive	910/1000	A	
I^2t	I^2t		4150	A^2s	
di/dt	Critical Rate of Rise of On-State Current	$I_G=100\text{mA}$, $V_D=\frac{1}{2}V_{DRM}$, $di_G/dt=0.1\text{A}/\mu\text{s}$	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)	$\text{N}\cdot\text{m}$ ($\text{kgf}\cdot\text{cm}$)
		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_{DRM}	Repetitive Peak Off-State Current,max.	$T_j=135^\circ\text{C}$, $V_D=V_{DRM}$	60	mA
I_{RRM}	Repetitive Peak Reverse Current,max.	$T_j=135^\circ\text{C}$, $V_D=V_{RRM}$	60	mA
V_{TM}	Peak On-State Voltage,max.	$T_j=25^\circ\text{C}$, $I_{TM}=75\text{A}$, 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	0.40	$^\circ\text{C}/\text{W}$
$R_{th(c-f)}$	Thermal Impedance, max.	Case to Fin	0.10	$^\circ\text{C}/\text{W}$

