THREE PHASE DIODE＋THYRISTOR

DFA150AA80/160

UL;E76102（M）

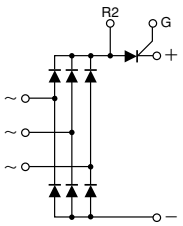
SanRex Power Module, **DFA150AA**, is complex isolated module which is designed for rash current circuit.

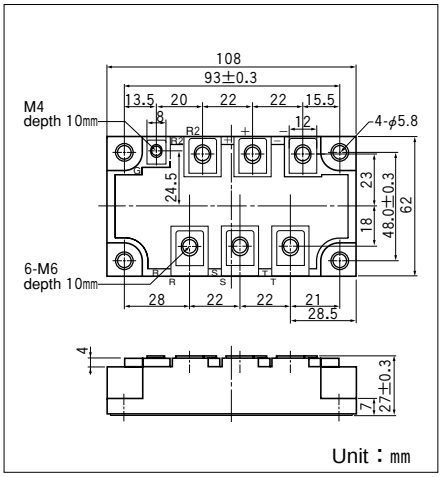
It contains six diodes connected in a three phase bridge configuration, and a thyristor connected to a direct current line.

- 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

（Tj＝25℃ unless otherwise specified）

Symbol	Item	Ratings		Unit
		DFA150AA80	DFA150AA160	
VRRM	Repetitive Peak Reverse Voltage	800	1600	V
VRSM	Non-Repetitive Peak Reverse Voltage	960	1700	V

Symbol	Item		Conditions	Ratings	Unit
ID	Output Current (D.C.)		Three phase full wave, Tc＝93℃	150	A
IFSM	Surge forward current		1 cycle, 50/60Hz, peak value, non-repetitive	1460/1600	A
Tj	Operating Junction Temperature			−40 to ＋150	℃
Tstg	Storage Temperature			−40 to ＋125	℃
VISO	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（M6）	Recommended Value 2.5-3.9（25-40）	4.7（48）	
		Terminal（M4）	Recommended Value 1.0-1.4（10-14）	1.5（15）	
	Mass		Typical Value	460	g

■Electrical Characteristics

Symbol	Item	Conditions	Ratings	Unit
IRRM	Repetitive Peak Reverse Current,max.	Tj＝150℃, VR=VRRM	15	mA
VFM	Forward Voltage Drop,max.	IF＝150A, Inst. measurement	1.35	V
Rth(j-c)	Thermal Impedance, max.	Junction to Case（TOTAL）	0.14	℃/W
Rth(c-f)	Thermal Impedance, max.	Case to fin	0.07	℃/W

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●THYRISTOR

■Maximum Ratings

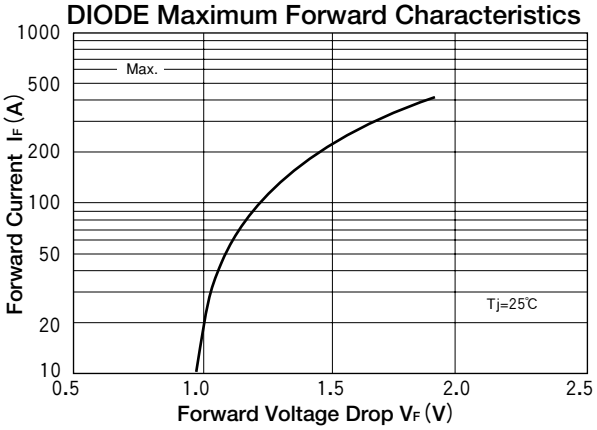
(Tj=25℃ unless otherwise specified)

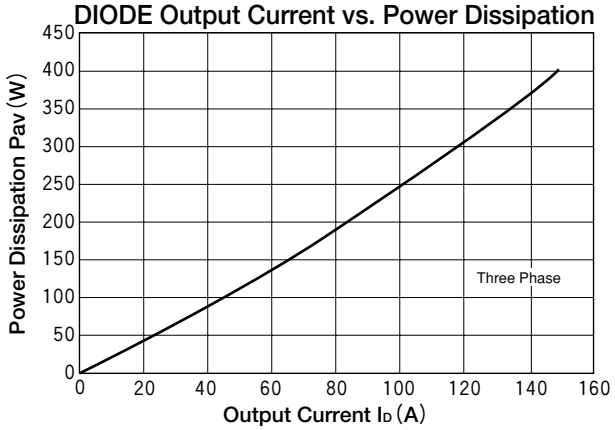
Symbol	Item	Ratings		Unit
		DFA150AA80	DFA150AA160	
V_{RRM}	Repetitive Peak Reverse Voltage	800	1600	V
V_{RSM}	Non-Repetitive Peak Reverse Voltage	960	1700	V
V_{DRM}	Repetitive Peak off-State Voltage	800	1600	V

Symbol	Item		Conditions	Ratings	Unit
$I_{T(AV)}$	Average On-State Current		Singl phase half wave. 180° conduction, Tc=93℃	150	A
I_{TSM}	Surge On-State Current		1 cycle, 50/60Hz, peak value, non-repetitive	1460/1600	A
I^2t	I^2t (for fusing)			10670	A^2S
di/dt	Critical Rate of Rise of On-State Current		I_G=100mA, $V_D=\frac{1}{2}V_{DRM}$, di_G/dt=0.1A/μs	150	A/μs
V_{ISO}	Isolation Breakdown Voltage (R.M.S.)		A.C. 1minute	2500	V
Tj	Operating Junction Temperature			−40 to +135	℃
Tstg	Storage Temperature			−40 to +125	℃
	Mounting Torque	Mounting (M5)	Recommended Value 1.5-2.5 (15-25)	2.7 (28)	N·m (kgf·cm)
		Terminal (M6)	Recommended Value 2.5-3.9 (25-40)	4.7 (48)	
		Terminal (M4)	Recommended Value 1.0-1.4 (10-14)	1.5 (15)	
	Mass		Typical Value	460	g

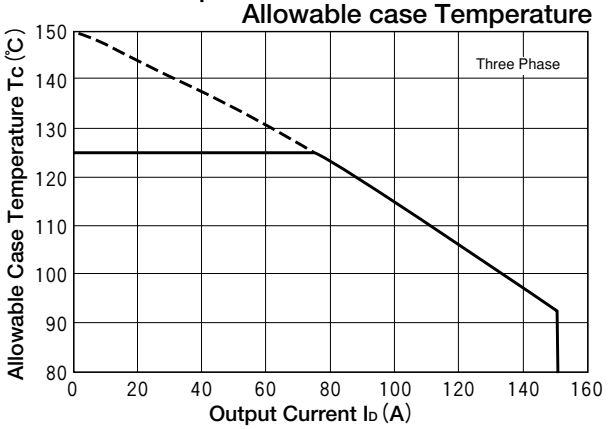
■Electrical Characteristics

Symbol	Item	Conditions	Ratings	Unit
I_{DRM}	Repetitive Peak Off-State Current,max.	Tj=135℃, $V_D=V_{DRM}$	100	mA
I_{RRM}	Repetitive Peak Reverse Current,max.	Tj=135℃, $V_D=V_{RRM}$	100	mA
V_{TM}	Peak On-State Voltage,max.	Tj=25℃, I_{TM}=150A,, Inst. measurement	1.35	V
I_{GT}	Gate Trigger Current,max.	Tj=25℃, V_D=6V, I_T=1A	70	mA
V_{GT}	Gate Trigger Voltage,max.	Tj=25℃, V_D=6V, I_T=1A	3	V
dv/dt	Critical Rate of Rise of Off-State Voltage,min.	Tj=125℃, $V_D=\frac{2}{3}V_{DRM}$	500	V/μs
Rth(j-c)	Thermal Impedance, max.	Junction to Case	0.21	℃/W
Rth(c-f)	Thermal Impedance, max.	Case to fin	0.07	℃/W

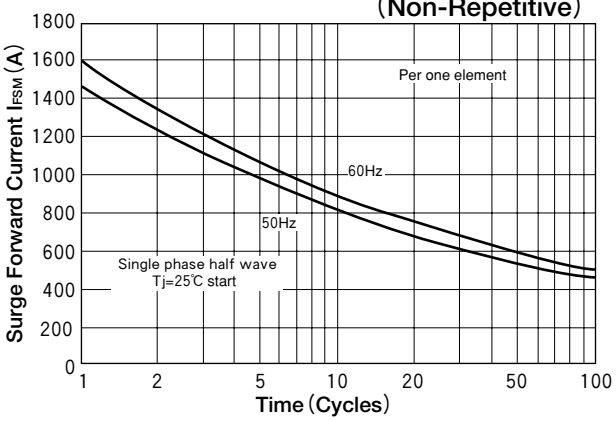




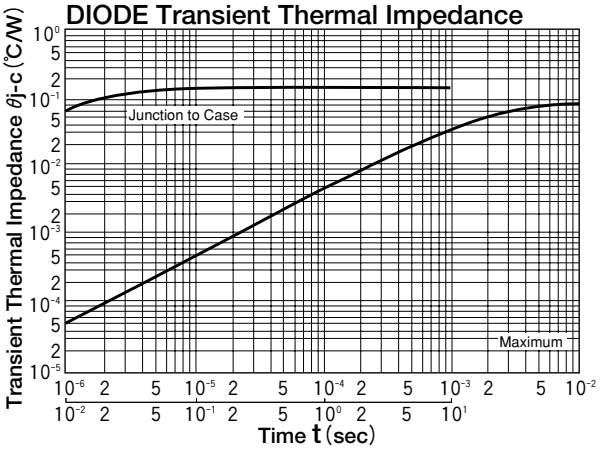
DIODE Output Current vs.
Allowable case Temperature



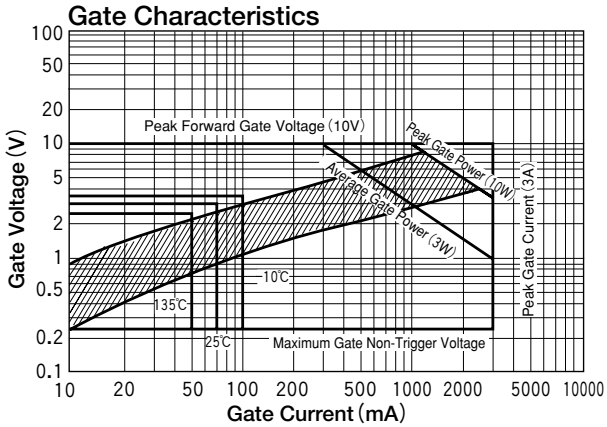
Surge Forward Current Rating
(Non-Repetitive)



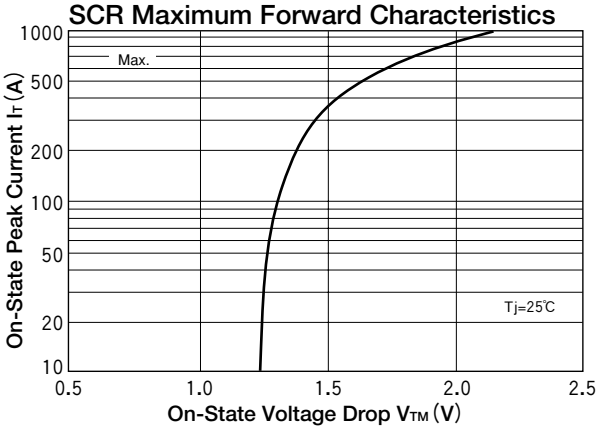
DIODE Transient Thermal Impedance



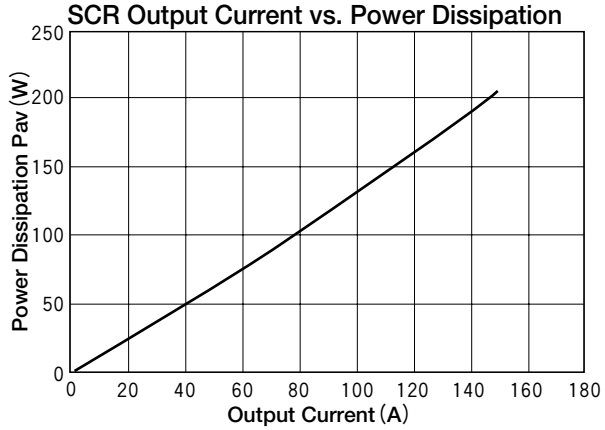
Gate Characteristics



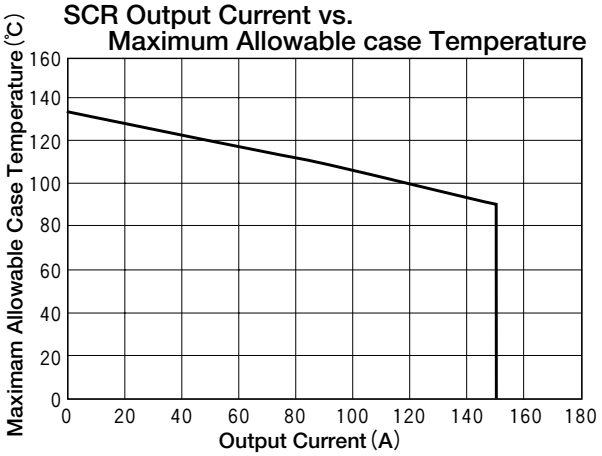
SCR Maximum Forward Characteristics



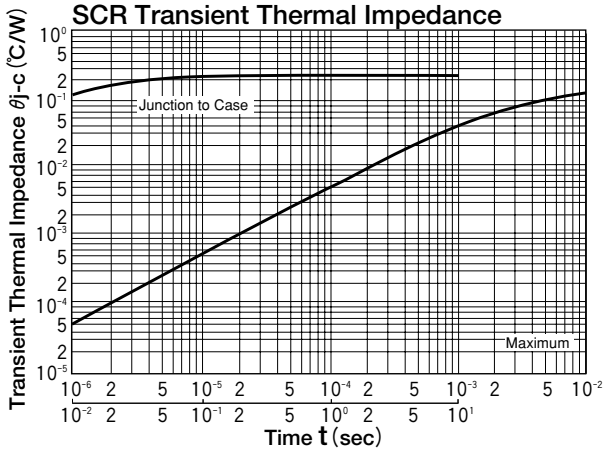
SCR Output Current vs. Power Dissipation



SCR Output Current vs.
Maximum Allowable case Temperature



SCR Transient Thermal Impedance



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