Three Phase Diode + Thyristor

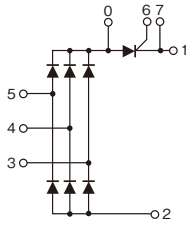
DFA75BA80/160

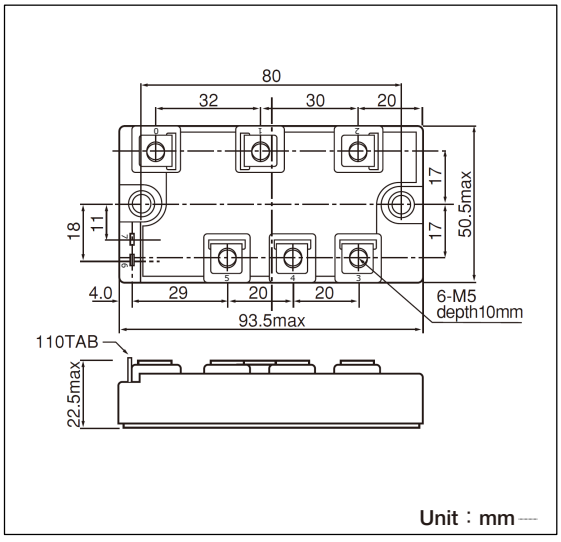
UL; E76102

《Features》
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.

《Applications》
・Inverter for AC or DC motor control / Current stabilized power supply / Switching power supply





Unit : mm

●DIODE

(Tj=25℃ unless otherwise specified)

Item	Symbol	Unit	DFA75BA80	DFA75BA160
Repetitive Peak Reverse Voltage	V_{RRM}	V	800	1600
Non-Repetitive Peak Reverse Voltage	V_{RSM}	V	960	1700

Item	Symbol	Unit	Ratings	Conditions
Output Current (D.C.)	I_D	A	75	Three phase full wave, T_C=101℃
Surge forward current	I_{FSM}	A	910/1000	1/2cycle, 50/60Hz, peak value, non-repetitive
Repetitive Peak Reverse Current,max	I_{RRM}	mA	8	T_j=150℃, V_R=V_{RRM}
Forward Voltage Drop,max	V_{FM}	V	1.30	I_F=75A, Inst. measurement
Operating Junction Temperature	T_j	℃	-40 to +150	
Thermal Resistance,max	$R_{th(j-c)}$	℃/W	0.25	Junction to Case (Total)

●THYRISTOR

(Tj=25℃ unless otherwise specified)

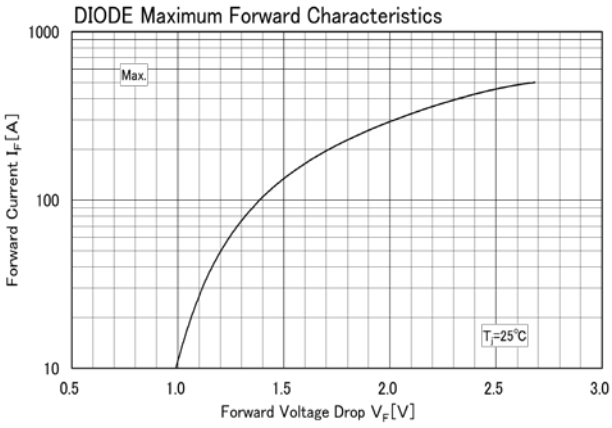
Item	Symbol	Unit	DFA75BA80	DFA75BA160
Repetitive Peak Reverse Voltage	V_{RRM}	V	800	1600
Non-Repetitive Peak Reverse Voltage	V_{RSM}	V	960	1700
Repetitive Peak Off-State Voltage	V_{DRM}	V	800	1600

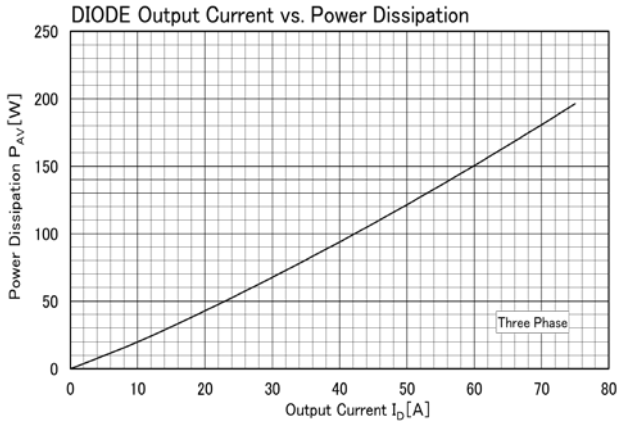
Item	Symbol	Unit	Ratings	Conditions
Average On-State Current	$I_{T(AV)}$	A	75	Single phase half wave. 180° condution,T_C=99℃
Surge On-State Current	I_{TSM}	A	910/1000	1/2cycle,50/60Hz,Peak value,non-repetitive
I^2t(for fusing)	I^2t	A^2S	4150	Value for one cycle of surge current
Critical Rate of Rise of On-State Current	di/dt	A/μs	150	I_G=100mA V_D=1/2V_{DRM} dI_G/dt=0.1A/μs
Operating Junction Temperature	T_j	℃	-40 to +135	
Repetitive Peak Off-State Current,max.	I_{DRM}	mA	60	Tj=135 ℃,V_D=V_{DRM}
Repetitive Peak Reverse Current,max.	I_{RRM}	mA	60	Tj=135 ℃,V_R=V_{RRM}
Peak On-State Voltage,max.	V_{TM}	V	1.20	I_T= 75A Inst. measurement
Gate Trigger Current,max.	I_{GT}	mA/V	70	I_T=1A V_D=6V Tj=25℃
Gate Trigger Voltage,max.	V_{GT}	mA/V	3	I_T=1A V_D=6V Tj=25℃
Critical Rate of Rise of Off-State Voltage,min.	dv/dt	V/μs	500	T_j=125℃ V_D=2/3V_{DRM} Exponential wave
Holding Current	I_H	mA	100	Tj=25℃
Latching Current	I_L	mA	80	Tj=25℃
Thermal Resistance,max	$R_{th(j-c)}$	℃/W	0.40	Junction to Case

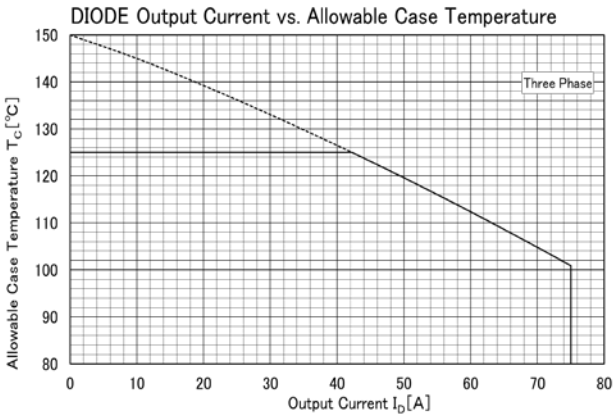
●GENERAL

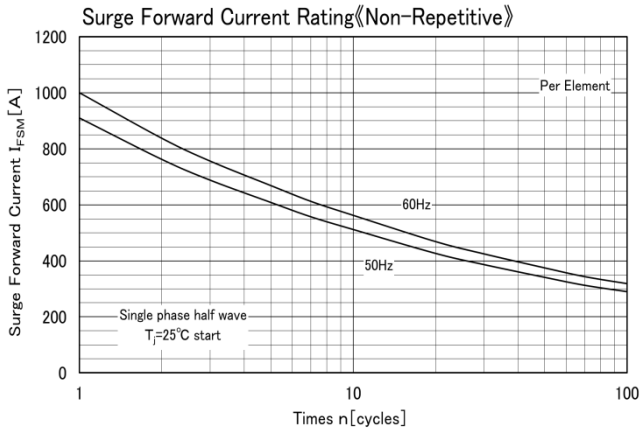
(Tj=25℃ unless otherwise specified)

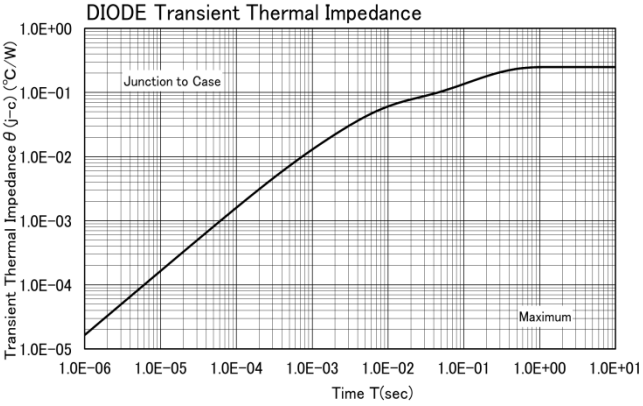
Item		Symbol	Unit	Ratings	Conditions
Isolation Breakdown Voltage (R.M.S.)		V_{ISO}	V	2500	A.C., 1minute
Storage Temperature		T_{stg}	℃	−40 to +125	
Thermal Resistance,max		$R_{th(c-f)}$	℃/W	0.10	Case to fin
Mounting Torque	Mounting (M5)		N·m (kgf·cm)	2.7(28)	Recommended Value 1.5 to 2.5 (15 to 25)
	Terminal (M5)			2.7(28)	Recommended Value 1.5 to 2.5 (15 to 25)
Mass			g	150	Typical value

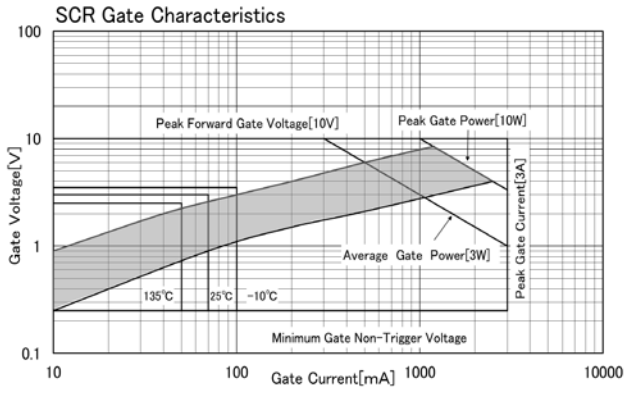




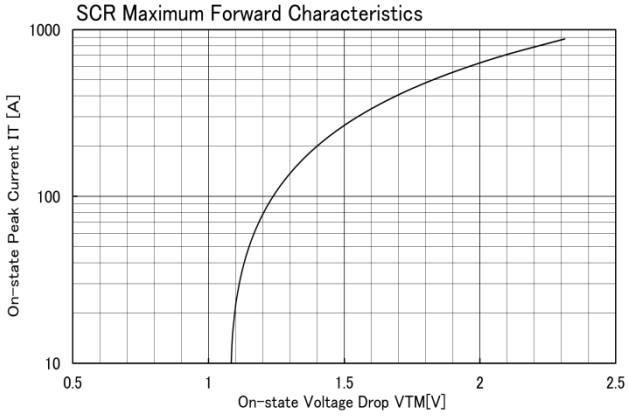




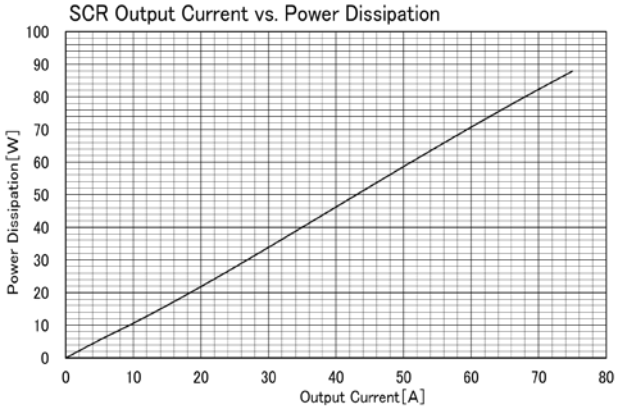




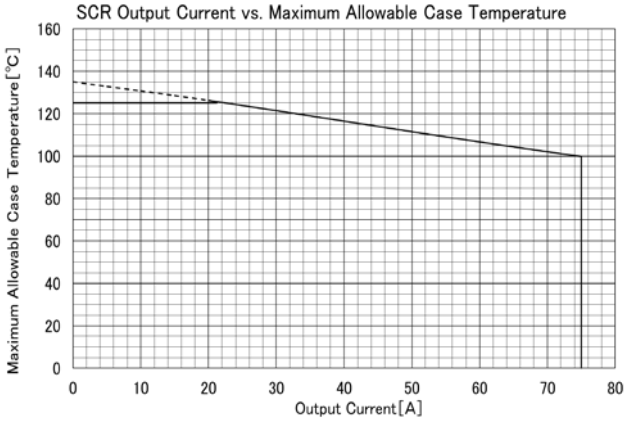
SCR Maximum Forward Characteristics



SCR Output Current vs. Power Dissipation



SCR Output Current vs. Maximum Allowable Case Temperature



SCR Transient Thermal Impedance