



**THE DATASHEET OF  
DFA200AA160**



# Three Phase Diode + Thyristor

# DFA200AA80/160

UL; E76102

## 《Features》

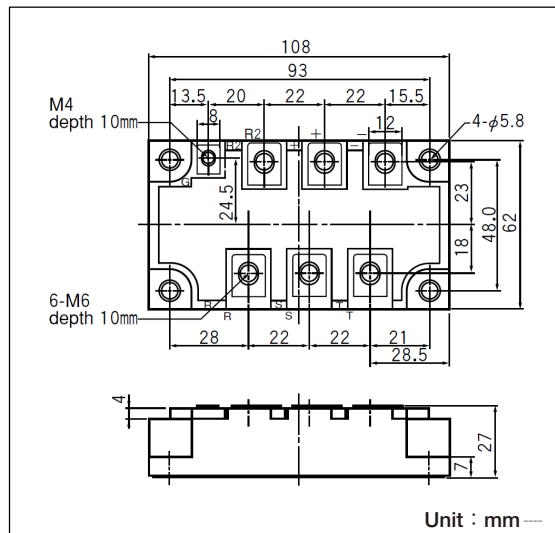
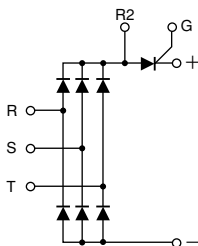
Power Module DFA200AA is complex isolated module which is designed for rash current circuit.

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.

## 《Applications》

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



## ● DIODE

(T<sub>j</sub>=25°C unless otherwise specified)

Item	Symbol	Unit	DFA200AA80	DFA200AA160
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	V	800	1600
Non-Repetitive Peak Reverse Voltage	V <sub>RSM</sub>	V	960	1700

Item	Symbol	Unit	Ratings	Conditions
Output Current (D.C.)	I <sub>D</sub>	A	200	Three phase full wave, T <sub>C</sub> =96°C
Surge forward current	I <sub>FSM</sub>	A	1850/2000	1/2cycle, 50/60Hz, peak value, non-repetitive
I <sup>2</sup> t(for fusing)	I <sup>2</sup> t	A <sup>2</sup> S	17000	Value for one cycle of surge current
Repetitive Peak Reverse Current,max	I <sub>RRM</sub>	mA	20	T <sub>j</sub> =150°C, V <sub>R</sub> =V <sub>RRM</sub>
Forward Voltage Drop,max	V <sub>FM</sub>	V	1.35	I <sub>F</sub> =200A, Inst. measurement
Operating Junction Temperature	T <sub>j</sub>	°C	-30 to +150	
Thermal Resistance,max	R <sub>th(j-c)</sub>	°C/W	0.1	Junction to Case (per Module)

## ● THYRISTOR

(T<sub>j</sub>=25°C unless otherwise specified)

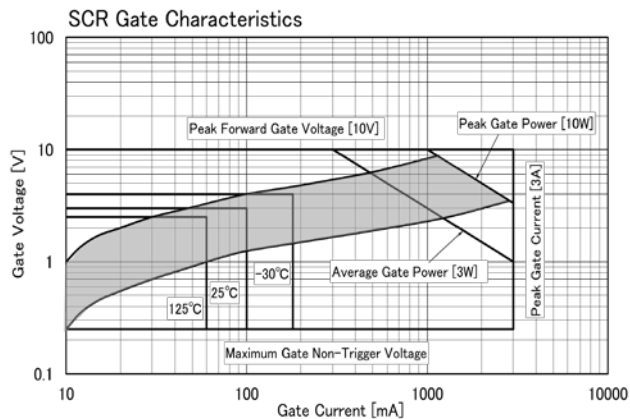
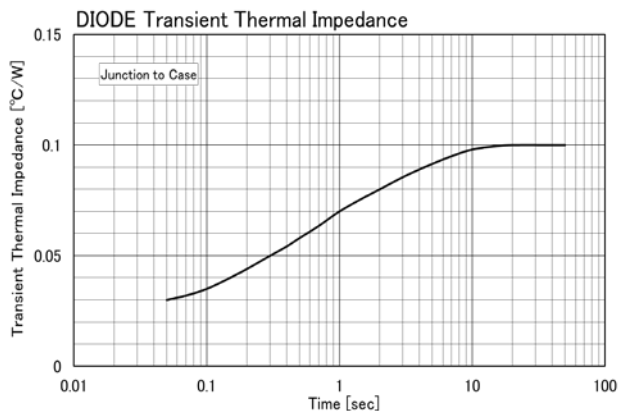
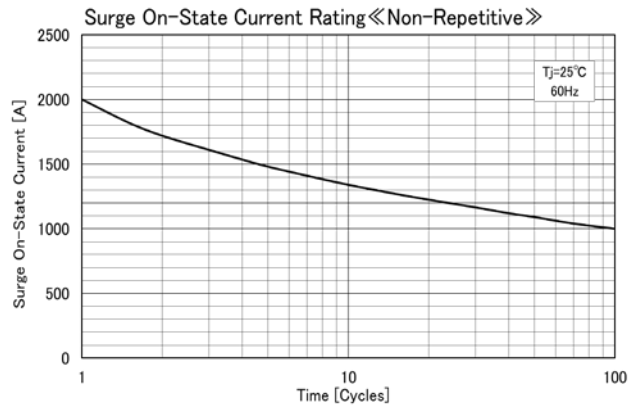
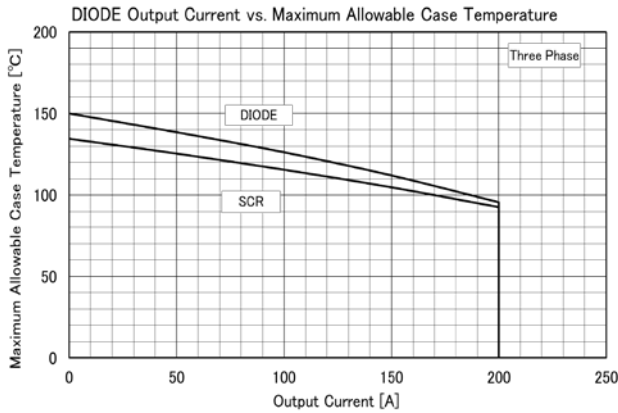
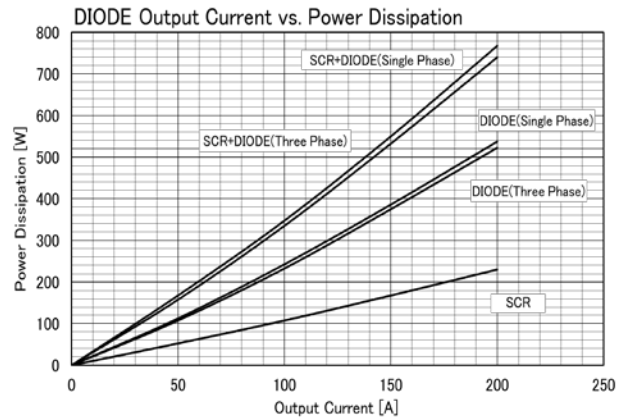
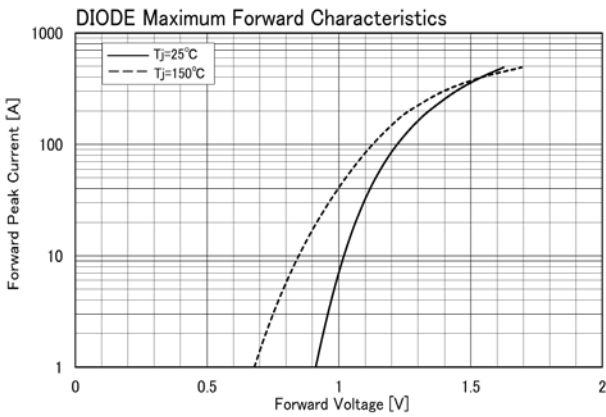
Item	Symbol	Unit	DFA200AA80	DFA200AA160	Conditions
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	V	800	1600	T <sub>j</sub> ≤ 125°C
Non-Repetitive Peak Reverse Voltage	V <sub>RSM</sub>	V	960	1700	T <sub>j</sub> ≤ 125°C
Repetitive Peak Off-State Voltage	V <sub>DRM</sub>	V	800	1600	T <sub>j</sub> ≤ 125°C

Item	Symbol	Unit	Ratings	Conditions
Average On-State Current	I <sub>T(AV)</sub>	A	200	Single phase, half wave, 180° conduction, T <sub>C</sub> =93°C
Surge On-State Current	I <sub>TSM</sub>	A	1850/2000	1/2cycle, 50/60Hz, Peak value, non-repetitive
I <sup>2</sup> t(for fusing)	I <sup>2</sup> t	A <sup>2</sup> S	17000	Value for one cycle of surge current
Critical Rate of Rise of On-State Current	di/dt	A/μs	200	I <sub>G</sub> =100mA V <sub>D</sub> =1/2V <sub>DRM</sub> di <sub>G</sub> /dt=0.1A/μs
Operating Junction Temperature	T <sub>j</sub>	°C	-30 to +135	
Repetitive Peak Off-State Current,max.	I <sub>DRM</sub>	mA	50	T <sub>j</sub> =135 °C, V <sub>D</sub> =V <sub>DRM</sub>
Repetitive Peak Reverse Current,max.	I <sub>RRM</sub>	mA	50	T <sub>j</sub> =135 °C, V <sub>R</sub> =V <sub>RRM</sub>
Peak On-State Voltage,max.	V <sub>TM</sub>	V	1.15	I <sub>T</sub> = 200A Inst. measurement
Gate Trigger Current,max.	I <sub>GT</sub>	mA/V	100	I <sub>T</sub> =1A V <sub>D</sub> =6V
Gate Trigger Voltage,max.	V <sub>GT</sub>	mA/V	3	I <sub>T</sub> =1A V <sub>D</sub> =6V
Critical Rate of Rise of Off-State Voltage,min.	dv/dt	V/μs	500	T <sub>j</sub> =125°C V <sub>D</sub> =2/3V <sub>DRM</sub> Exponential wave
Thermal Resistance,max	R <sub>th(j-c)</sub>	°C/W	0.18	Junction to Case

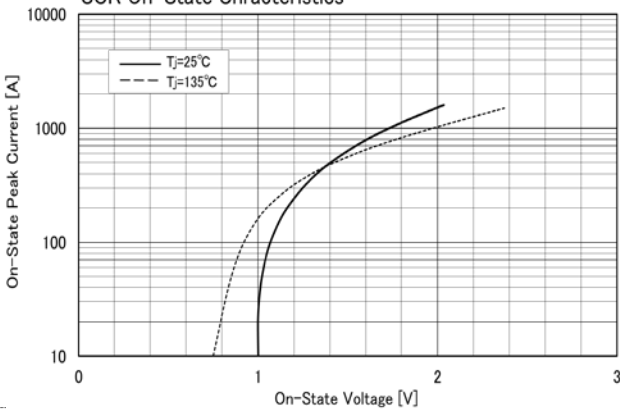
## ● GENERAL

(T<sub>J</sub>=25°C unless otherwise specified)

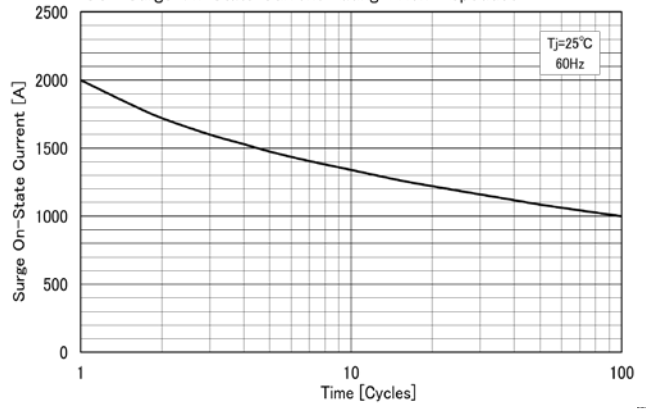
Item	Symbol	Unit	Ratings	Conditions
Isolation Breakdown Voltage (R.M.S.)	V <sub>ISO</sub>	V	2500	A.C., 1minute
Storage Temperature	T <sub>stg</sub>	°C	-30 to +135	
Mounting Torque	Mounting (M5)	N·m (kgf·cm)	2.7(28)	Recommended Value 1.5 to 2.5 (15 to 25)
	Terminal (M6)		4.7(48)	Recommended Value 2.5 to 3.9 (25 to 40)
	Terminal (M4)		1.5(15)	Recommended Value 1.0 to 1.4 (10 to 14)
Mass		g	460	Typical value



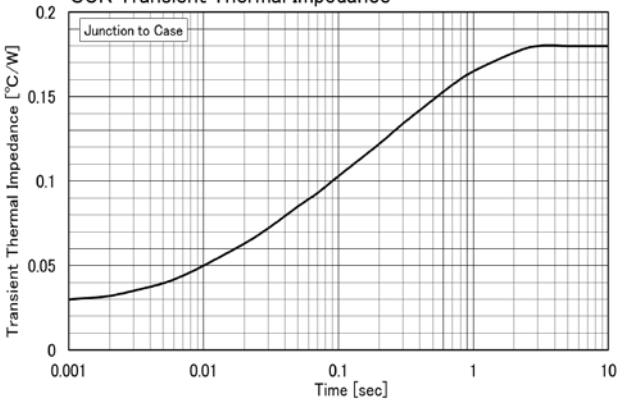
SCR On-State Characteristics



SCR Surge On-State Current Rating «Non-Repetitive»



SCR Transient Thermal Impedance



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