



**THREE PHASE DIODE + THYRISTOR 200A**

**Description**

SCR3P200AA, 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.

**Features & Benefits**

- 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.

**Preliminary**



Dimensions in mm (1 mm = 0.0394")

**DIODE Maximum Ratings**

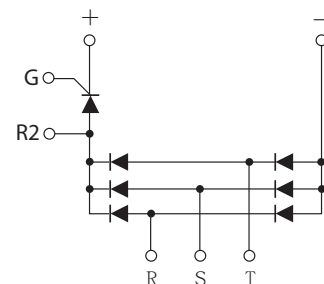
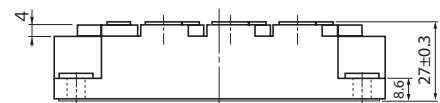
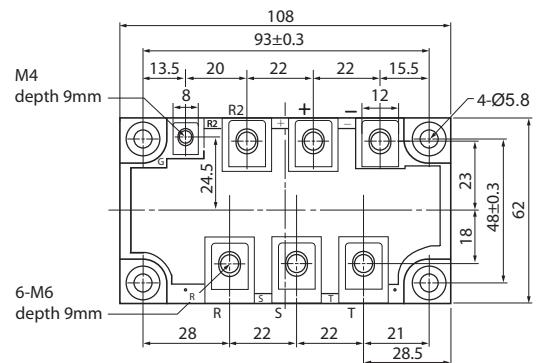
Operating Temperature : -30 °C to + 150 °C  
Storage Temperature : -30 °C to + 135 °C

Part Number	Maximum Recurrent Peak Reverse Voltage	Maximum DC Blocking Voltage
SCR3P200AA080	800V	800V
SCR3P200AA160	1600V	1600V

**Electrical Characteristics @ 25 °C Unless Otherwise Specified.**

Item	Symbol	Rating	Conditions
		Max	
Output Current (D.C.)	I <sub>D</sub>	200A	Three phase full wave, T <sub>C</sub> = 100 °C
Forward Surge Current	I <sub>FSM</sub>	2000A	8.3ms , half sine
Isolation Voltage	V <sub>iso</sub>	2500 V	A.C. 1 minute
Mounting torque		2 ± 0.5Nm 3 ± 0.5Nm 1 + 0.5Nm	to heatsink (M5) to terminals(M6) to terminals(M4)
Maximum Instantaneous Forward Voltage *	V <sub>F</sub>	1.25V	I <sub>FM</sub> = 200A ; T <sub>J</sub> = 25 °C
Maximum Instantaneous Reverse Current At Rated DC Blocking Voltage	I <sub>R</sub>	20 mA	T <sub>J</sub> = 150 °C
Maximum Thermal Resistance Junction To Case	R <sub>θjc</sub>	0.10 °C/W	

NOTE : (1) Pulse Test: Pulse Width 300 μ sec. Duty Cycle < 2%





**THYRISTOR Maximum Ratings**

Operating Temperature : -30 °C to +135 °C  
Storage Temperature : -30 °C to +135 °C

Part Number	Maximum Recurrent Peak Reverse Voltage	Maximum DC Blocking Voltage
SCR3P200AA080	800V	800V
SCR3P200AA160	1600V	1600V

**Electrical Characteristics@25°C Unless Otherwise Specified.**

Item	Symbol	Rating	Conditions
Average Forward Current	$I_{T(AV)}$	200A	Singl phase half wave. 180° conduction, $T_c=95^\circ\text{C}$
Peak Forward Surge Current	$I_{FSM}$	2000A	8.3ms , half sine
Isolation Voltage	$V_{iso}$	2500 V	A.C. 1 minute
Mounting torque		2 ± 0.5Nm 3 ± 0.5Nm 1 + 0.5Nm	to heatsink (M5) to terminals(M6) to terminals(M4)
Maximum Repetitive Peak off-State Current	$I_{DRM}$	50 mA	$T_J = 135^\circ\text{C}$ , $V_D = V_{DRM}$
Maximum Repetitive Peak Reverse Current	$I_{RRM}$	50 mA	$T_J = 135^\circ\text{C}$ , $V_D = V_{DRM}$
Maximum Peak on-State Voltagea	$V_{TM}$	1.15 V	$I_T = 200\text{A}$ Inst. measurement
Maximum Gate Trigger Current	$I_{GT}$	100 mA	$V_D = 6\text{ V}$ , $I_T = 1\text{ A}$
Maximum Gate Trigger Voltage	$V_{GT}$	3 V	$V_D = 6\text{ V}$ , $I_T = 1\text{ A}$
Critical Rate of off-State Voltage, min	$dv / dt$	500 V/ $\mu\text{s}$	$T_J = 125^\circ\text{C}$ , $V_D = 2/3V_{DRM}$
Maximum Thermal Resistance Junction To Case	$R_{\theta jc}$	0.18 °C/W	Junction to Case



Figure 1. DIODE Maximum Forward Characteristics

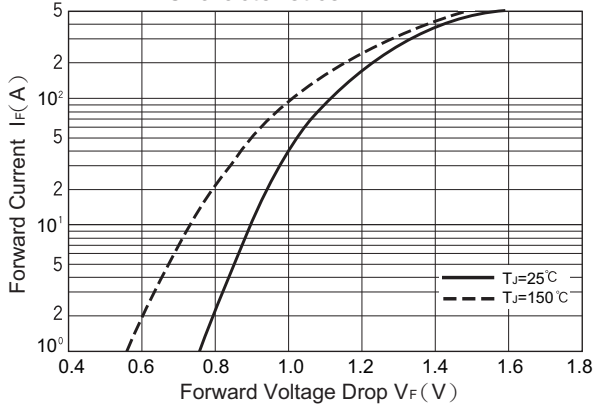


Figure 2. Output Current vs. Power Dissipation

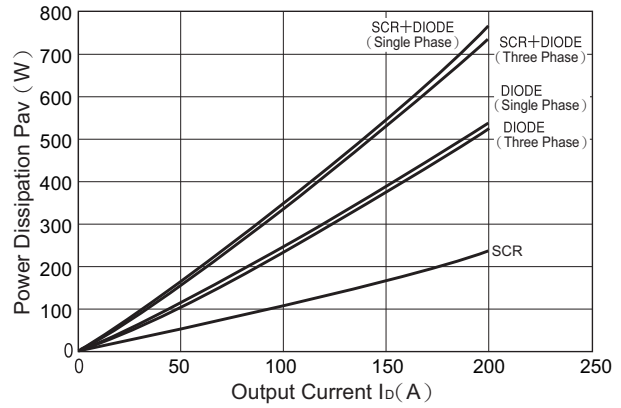


Figure 3. Output Current vs. Allowable case Temperature

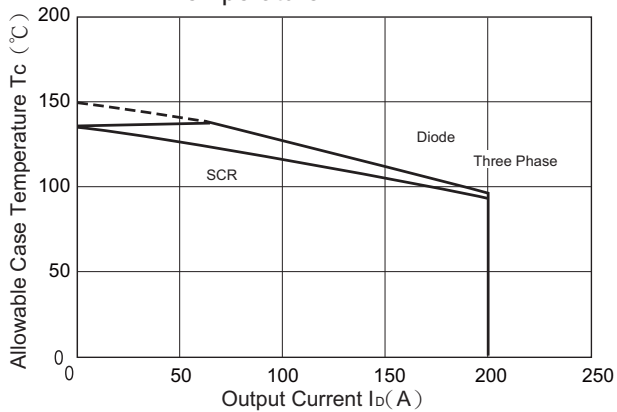


Figure 4. DIODE Surge Forward Current Rating (Non-Repetitive)

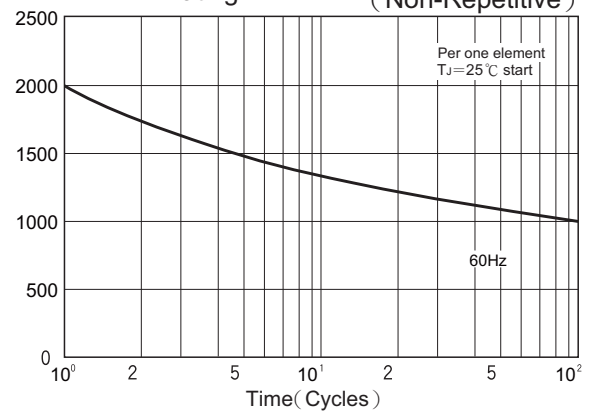


Figure 5. DIODE Transient Thermal Impedance

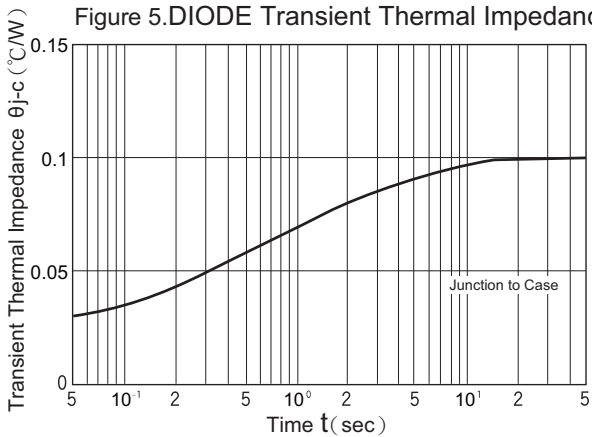


Figure 6. Gate Characteristics

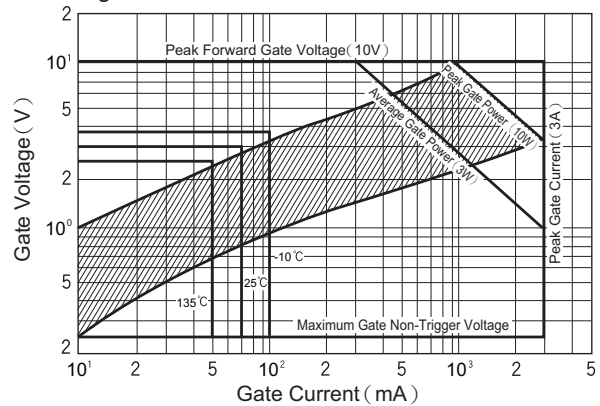




Figure 7. SCR On-State Characteristics

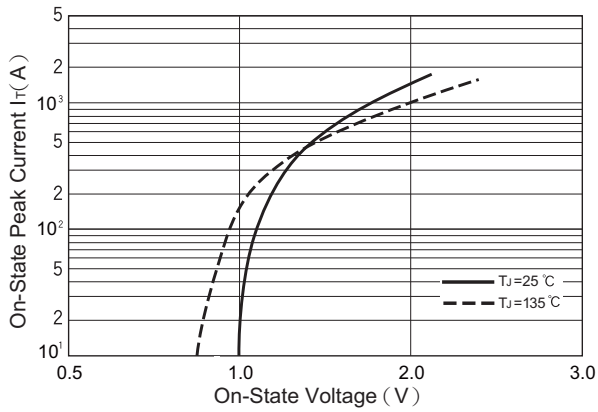


Figure 8. Surge On-State Current Rating (Non-Repetitive)

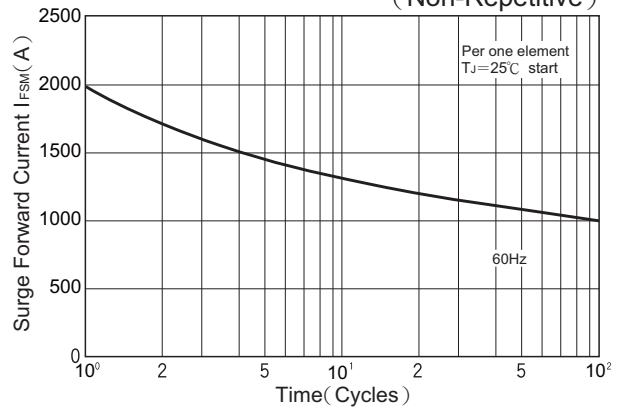


Figure 9. SCR Transient Thermal Impedance

