

POWER DIODE MODULE

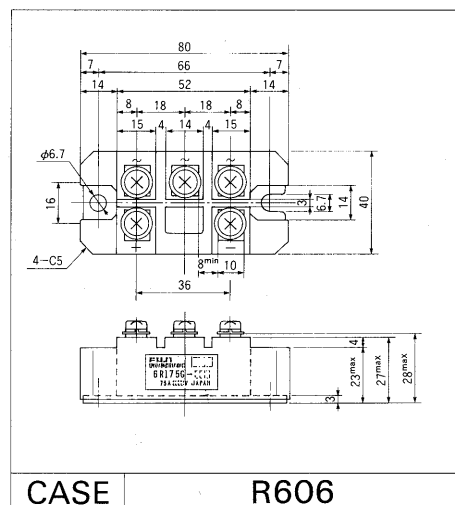
Features

- All the terminals and the mounting plate are electrically isolated. These modules can be installed in the same cooling fin as other modules, thus saving installation space – a cost-effective feature.
- The diode chips are coated with a glass of zinc oxide, making them highly resistant to temperature and humidity variation.
- 6 diode chips are connected to the 3-phase bridge rectifying circuit inside the module-a cost-effective feature.

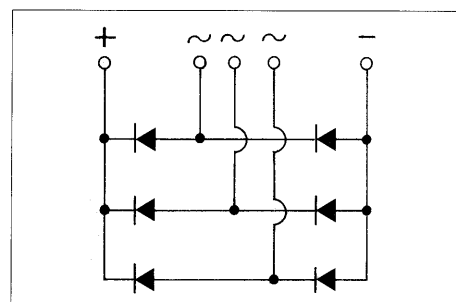
Applications

- Inverters for AC motors
- Power supply units for DC motors
- DC power supply units for battery chargers
- General purpose DC power supply units

■ Outline Drawings



■ Inner Circuit Schematic



■ Maximum Ratings and Characteristics

- Absolute Maximum Ratings

Items	Symbols	Conditions	6R175G		Units
			- 120	- 160	
Repetitive peak reverse voltage	V_{RRM}		1200	1600	V
Non-repetitive peak reverse voltage	V_{RSM}		1320	1760	V
Average output current	I_O	50/60 Hz Sinewave, $T_C = 93^{\circ}C$	75		A
Surge current	I_{FSM}	Rated load conditions	1000		A
I_t^2	I_t^2	Rated load conditions	4000		A ² s
Junction temperature	T_j		-40~+150		°C
Storage temperature	T_{stg}		-40~+125		°C
Tightening torque		Mounting screw: M5	25±5		kg·cm
Vibration resistance			5		G
Dielectric strength		Between terminals and base	2500 VAC 1 min		
Net. Weight			230		g

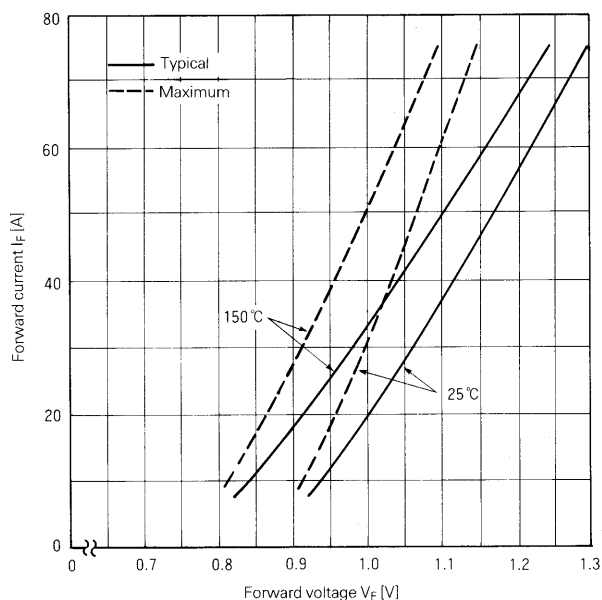
- **Electrical Characteristics**

Items	Symbols	Conditions	Min	Typ	Max	Units
Forward voltage	V_{FM}	$T_J=25^{\circ}C, I_{FM}=75\text{ A}$			1.30	V
Reverse current	I_{RRM}	$T_J=150^{\circ}C, V_R=V_{RRM}$			15	mA

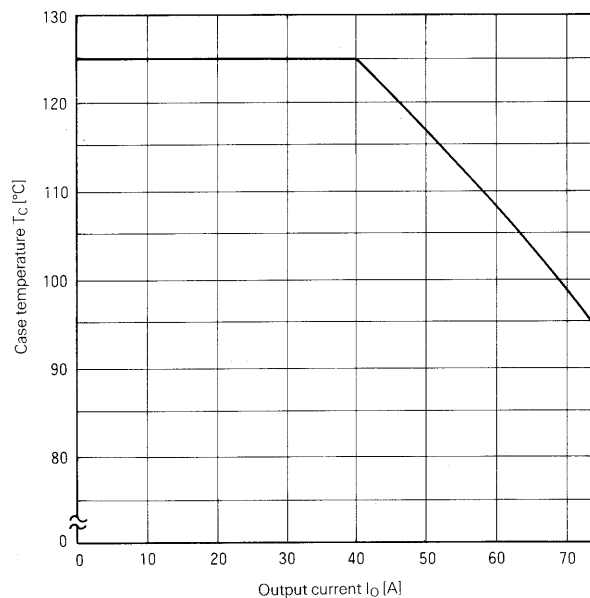
- Thermal Characteristics

Items	Symbols	Conditions	Min	Typ	Max	Units
Thermal resistance (Junction to case)	$R_{th(j-c)}$	50/60 Hz Sinewave, Thermal resistance for total loss			0.30	°C/W
Thermal resistance	$R_{th(c-f)}$	With thermal compound			0.06	°C/W

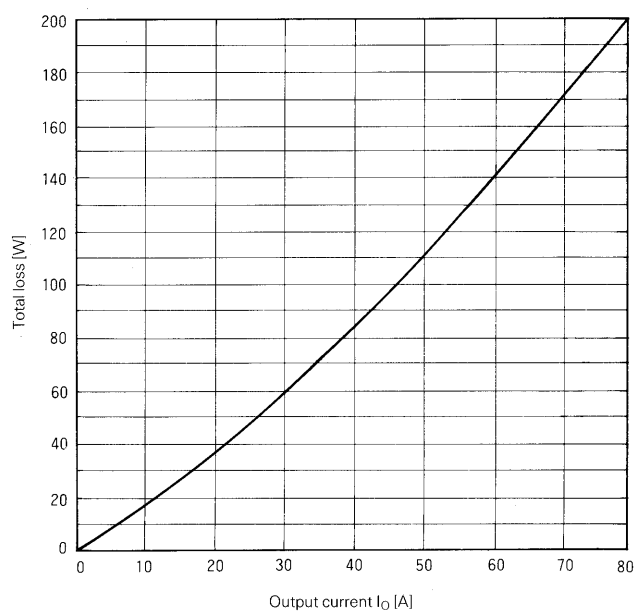
■ Characteristic curves



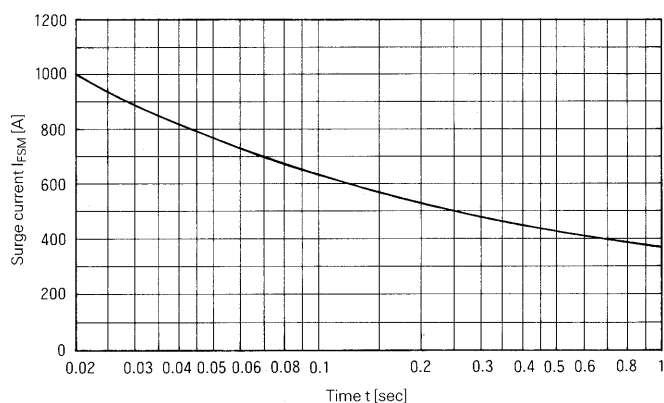
Forward Characteristics



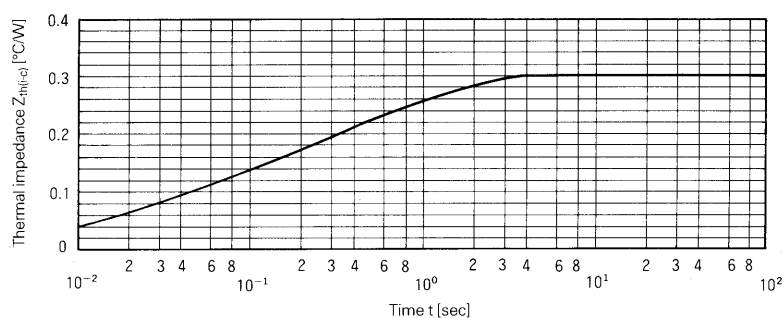
Case Temperature vs. Output Current



Output Current vs. Total Loss



Surge Current



Transient Thermal Impedance