

# HGKB Series Solid State Booster

Load current 10,15,25,40, Adjustable voltage range 0-220VAC or 0-380VAC  
Control 470Kohms(2W) a potentiometer in need only

## Electronic

### DESCRIPTION

QT/YHL3852-2000  
Technical information

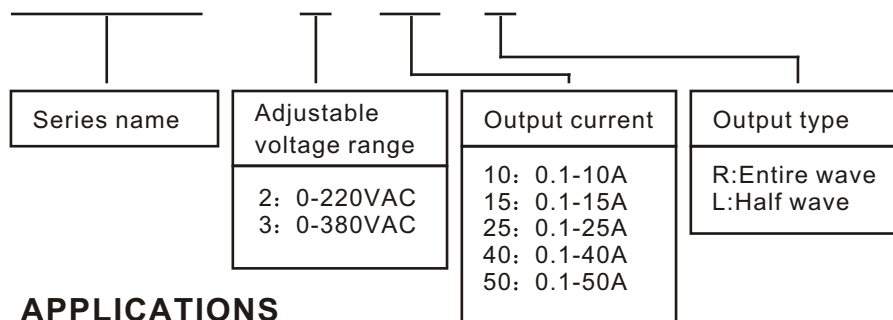
### FEATURES

- ▶ Input/output-base 2,500V isolation
- ▶ 100% tested at rated current, CE compliant
- ▶ Only a potentiometer in need to implement line adjust of output voltage, easy to use
- ▶ Internal varistor (MOV) and RC snubber dual surge absorb protect
- ▶ Thyristor phase control output, adjustable range wide
- ▶ With safety cover, panel mount



### SELECTING CODE

**HGKB - 2 10 R**



### APPLICATIONS

HGKB series solid state booster, is made up of TRIAC and RC phase control circuit, hysteresis elimination circuit, over voltage snubber, adapting ignition-proof covering, filled with EPOXY, screw thread connection, and have the features of hard structure, vibration-proof capability high, unique sculpt, original architecture, with safety cover, convenient and safe to mount and check. only a potentiometer is needed to implement AC power adjust, used widely instead of cumbersome contacting booster in many fields.

"L" type outputs through SCRs to implement half-wave adjust, mainly used for vibratory feeders.

This series are widely used in the fields of oil apparatus, foodstuff producing mechanisms, packaging and textile machines, manual adjust of power, voltage, temperature, speed etc, analog.

Typical Application:  
Industrial temperature controllers  
Lighting dimming  
Vibratory feeders  
Resistive heating element  
Conveyor speed control  
Other occasion of power adjusting

Unsuitable application:  
AC motor control  
Three-phase control  
Transformers requiring pure sine wave input  
Application which cannot withstand thyristor noise  
Zero Crossing Application

# HGKB Series Solid State Booster

Load current 10,15,25,40, Adjustable voltage range 0-220VAC or 0-380VAC  
Control 470Kohms(2W) a potentiometer in need only

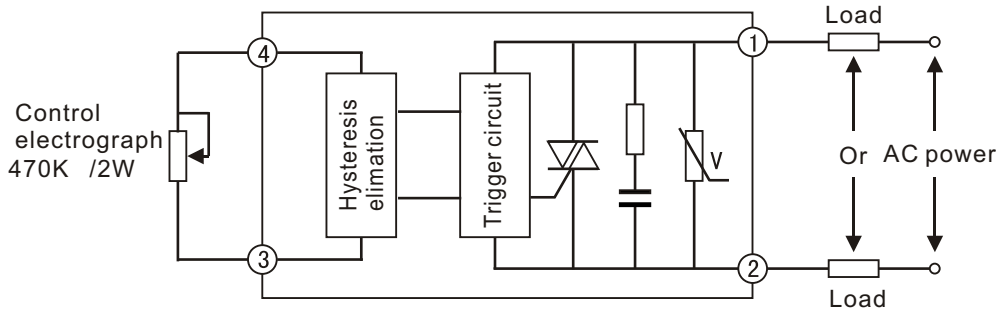
## Electronic

### OUTPUT PARAMETERS(Ta=25°C)

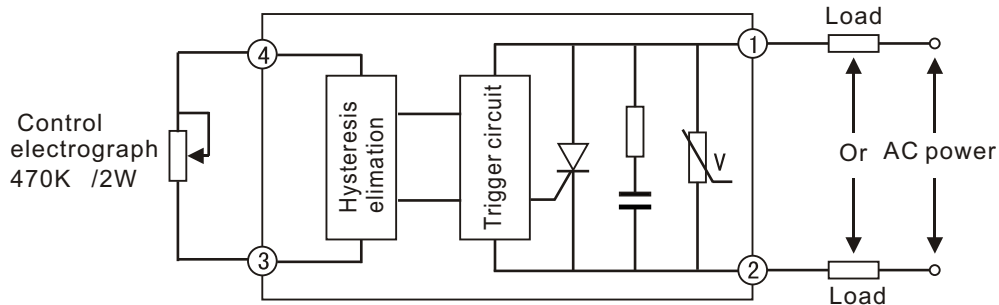
Output current type	10	15	25	40
Operating voltage range	2:0~220VAC 3:0~380VAC			
Max. Load current	10A	15A	25A	40A
Max. Surge current-Non repetitive(10ms)	120Apk	160Apk	250Apk	300Apk
Max. I <sup>2</sup> t for fusing(10ms)	72A <sup>2</sup> s	128A <sup>2</sup> s	312. 5A <sup>2</sup> s	450A <sup>2</sup> s
Thermal resistance junction to case(Rjc)	2.5°C/W	2.3°C/W	1.1°C/W	0.9°C/W
Minum off-state dv/dt	250V/usec	500V/usec	250V/usec	250V/usec
Min. Load current	100 mA			
Max. On-state voltage drop	2.2VAC@rated current			
Max. Off-state leakage current	5mA@rated voltage			
Transient over voltage	2:800Vpk 3:1000Vpk			
Operating frequency range	47~63Hz			
Dielectric strength(50Hz 1Min)	2500VAC input/output-base			
Insulation resistance	1000MΩ 500VDC Voltage Test			
Vibration resistance	Destructive	117.6mm/s <sup>2</sup> (12G),10-55 Hz double Amplitude of 2 mm		
	Functional	117.6mm/s <sup>2</sup> (12G),10-55 Hz double Amplitude of 2 mm		
Shock resistance	Destructive	Min.980m/s <sup>2</sup> (100G)(5 times each for X,Y,Z axis)		
	Functional	Min.980m/s <sup>2</sup> (100G)(4 times each for X,Y,Z axis)		
Ambient operating temperature	-30°C to 80°C			
Ambient storage temperature	-30°C to 120°C			
Ambient humidity relative	45% to 85%			
Weight typical	≤85g			

### CONNECTION/WIRING

HGKB-210R/280R  
HGKB-310R/380R



HGKB-210L/280L  
HGKB-310L/380L

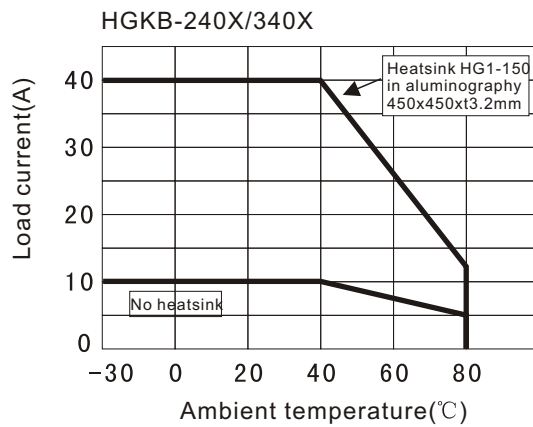
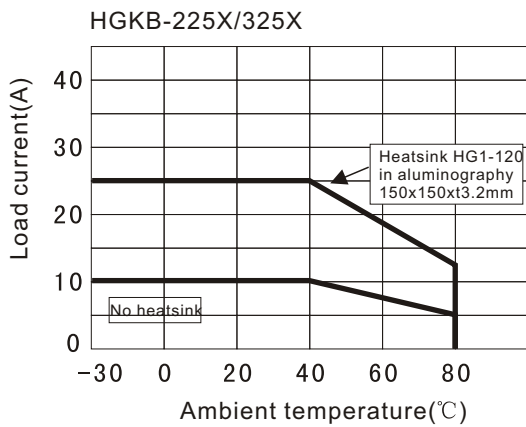
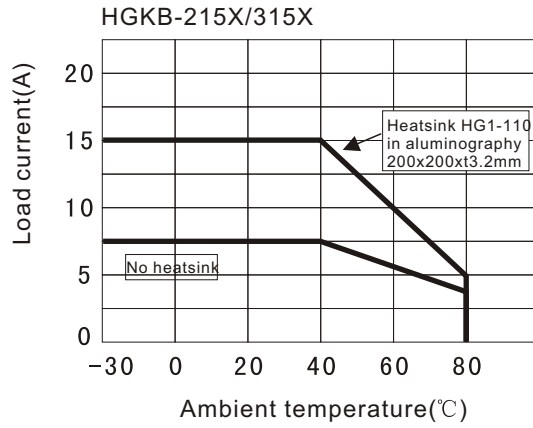
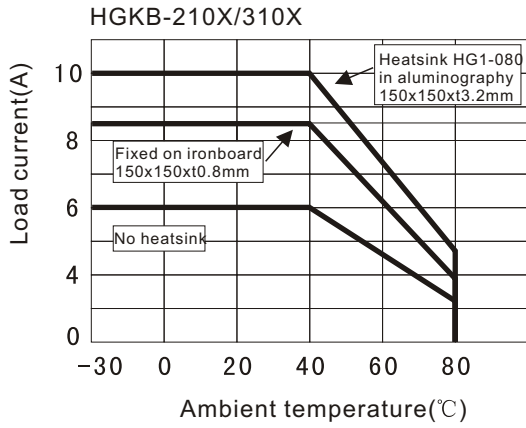


# HGKB Series Solid State Booster

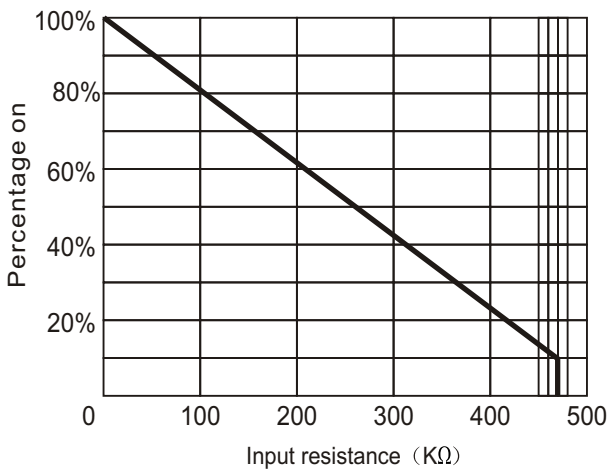
Load current 10,15,25,40, Adjustable voltage range 0-220VAC or 0-380VAC  
Control 470Kohms(2W) a potentiometer in need only

## Electronic

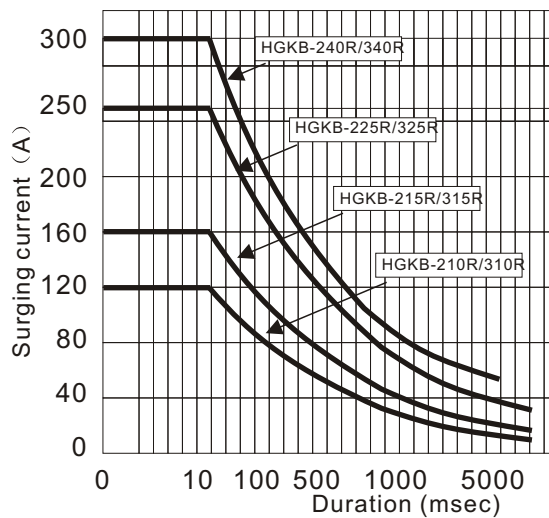
### CURRENT DERATING CURVES



### PERCENTAGE ON vs. INPUT RESISTANCE



### MAX.SURGE vs.DURATION



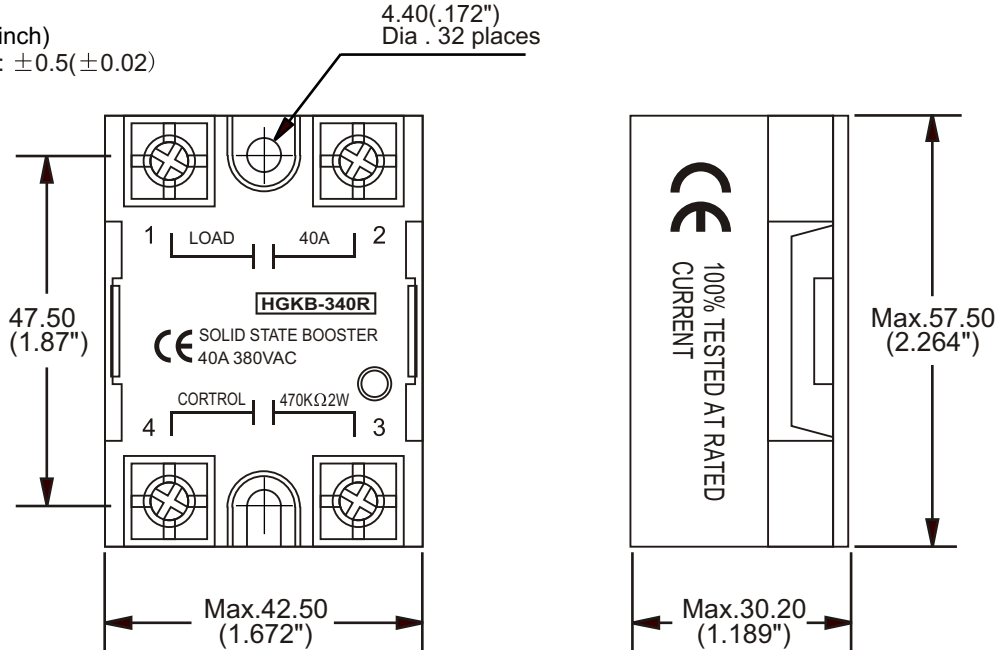
# HGKB Series Solid State Booster

Load current 10,15,25,40, Adjustable voltage range 0-220VAC or 0-380VAC  
Control 470Kohms(2W) a potentiometer in need only

## Electronic

### DIMENSIONS

Unit: mm(inch)  
Tolerance:  $\pm 0.5(\pm 0.02)$



### PRECAUTIONS

- ▶ RFI will be brought on the output with Thyristor phase control output (The interference will be reduced when seriesing an inductive with the load).
- ▶ Shielding wires or metal tube should be used when the control potentiometer connection line is too long.
- ▶ This series products control to load is not isolated:
  - Potentiometer should be selected with regards to line voltage isolation;
  - Exercise care to avoid the risk of electric shock;
  - The control end can not be connected to other electro circuit.
- ▶ Heatsink should be used when the current is up to 5 Amperes, and heat-conductive silicate should be spreaded between the heatsink and the base.
- ▶ When controlling inductive load, the SSR may be damaged by the high transient voltage and surge current added on the output, so some special clamping devices should be used to control voltage, such as zener diode, varistor (MOV).
- ▶ When controlling a small current(close to Min. Load current), a dummy load resistance should be paralleled to reduce the rest higher voltage produced by the leakage current on the output.
- ▶ To avoid the temperature exceeding the allowance, heatsink efficiency and the mounting position should be regarded, suitable space will be left when two or more SSR are mounted.
- ▶ The output end must not be used in parallel to enlarge the current, nor can it be used in series for higher suitable operating voltage.