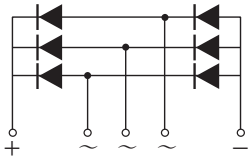
# SGBPC5010/5012/5016

18-Nov-2023

## Three-phase Bridge Rectifiers

SGBPC



### Features

- Glass blunt chip, high reliability
- Low forward pressure drop
- Insulation voltage 2500V ~
- Small size and light weight
- Low thermal resistance, high thermal conductivity, low temperature rise

### Applications

- Power supply for DC devices
- Input rectifier of PWM converter
- DC motor

### Maximum Ratings and Electrical characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.
Single phase half-wave 60 Hz, resistive or inductive load, for capacitive load current derate by 20 %.

| Parameter | Symbols | SGBPC5010 | SGBPC5012 | SGBPC5016 | Units |
|---|---|---|---|---|---|
| Maximum Repetitive Peak Reverse Voltage | $V_{RRM}$ | 1000 | 1200 | 1600 | V |
| Maximum RMS voltage | $V_{RMS}$ | 700 | 840 | 1120 | V |
| Maximum DC Blocking Voltage | $V_{DC}$ | 1000 | 1200 | 1600 | V |
| Average Rectified Output Current | $I_O$ | 50.0 | | | A |
| Peak Forward Surge Current 8.3ms Single Half Sine-Wave Super Imposed on Rated Load | $I_{FSM}$ | 500 | | | A |
| $I^2t$ rating for fusing ( 1ms< t < 8.3ms) | $I^2t$ | 1037 | | | $A^2S$ |
| Maximum Forward Voltage Drop Per Element at 25A Peak | VF | 1.1 | | | V |
| Maximum Reverse Current at Rate DC Blocking Voltage Per Element @TJ=25 °C | IR | 10 | | | uA |
| Operating and Storage Temperature Range | Tj,Tstg | -55 ~ +150 | | | °C |
| Junction-to-case thermal resistance | RthJC | 0.5 | | | °C/W |

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## RATINGS AND CHARACTERISTICS CURVES (TA = 25 ˚C unless otherwise noted)

FIG.1-MAXIMUM FORWARD SURGE CURRENT

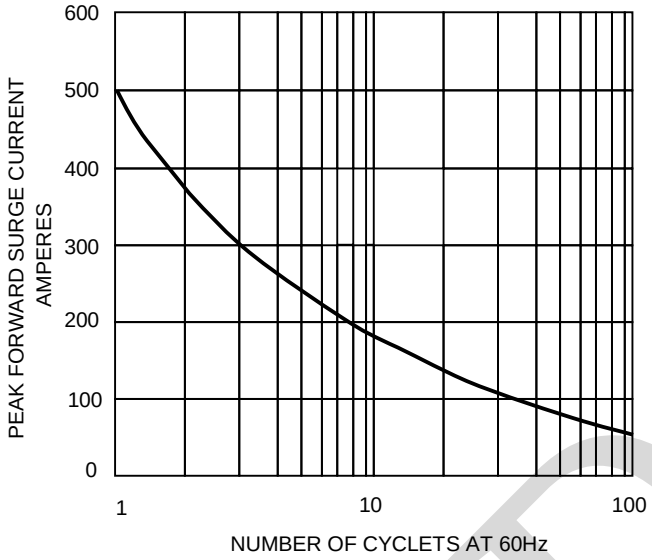



FIG.2- DERATING CURVE
OUTPUT RECTIFIED CURRENT

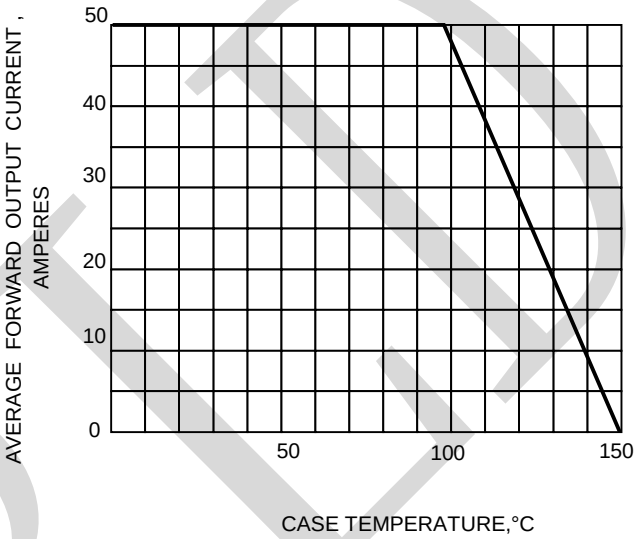



FIG.3-TYPICAL FORWARD
CHARACTERISTICS

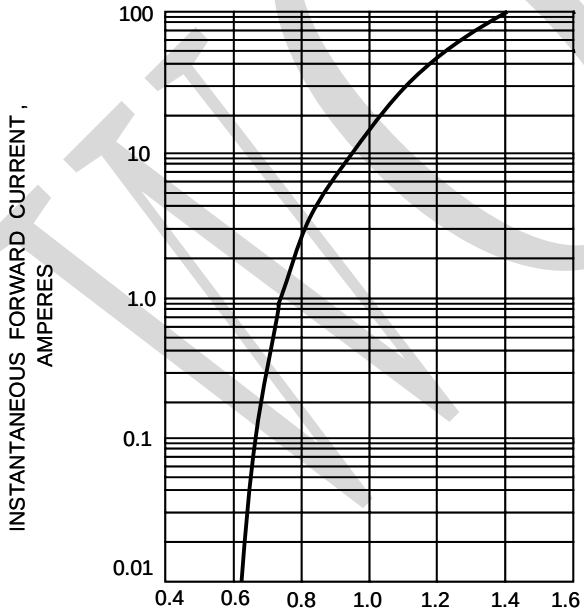
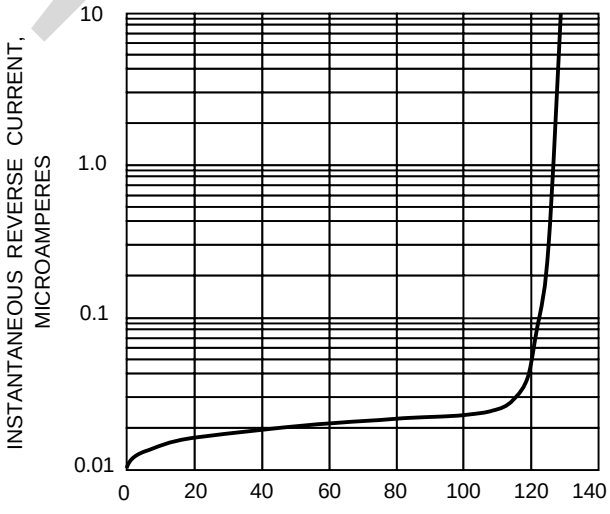


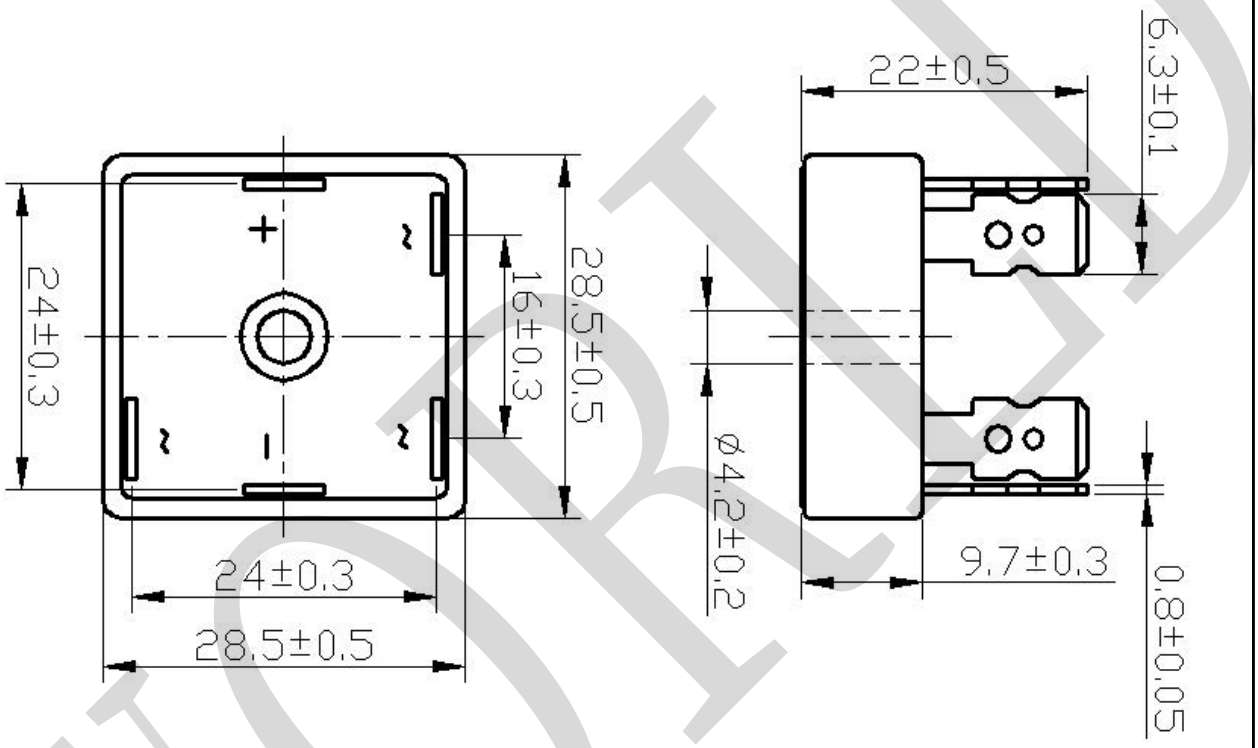

FIG.4-TYPICAL REVERSE
CHARACTERISTICS



## PACKAGE OUTLINE DIMENSIONS

Note:unit mm

### SGBPC




### Description of model and identification

SGBPC 50 10

- SGBPC — Package type
- 50 — Current: 50=50A
- 10 — Voltage: 10=1000V, 12=1200V, 16=1600V

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