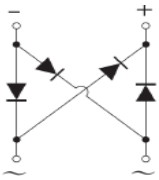
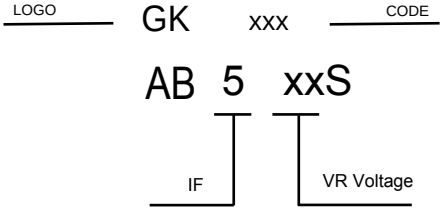
## FEATURES

* Ideal for printed circuit board
* Reliable low cost construction utilizing molded plastic technique
* High surge current capability
* Polarity: Symbol molded on body
* Mounting position: Any

**VOLTAGE RANGE**
20 to 200 Volts
**CURRENT**
5.0 Ampere




Internal Schematic




## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°C ambient temperature uniess otherwies specified.
Single phase half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

| TYPE NUMBER | AB52S | AB54S | AB56S | AB58S | AB510S | AB515S | AB520S | UNIT |
|---|---|---|---|---|---|---|---|---|
| Maximum Recurrent Peak Reverse Voltage | 20 | 40 | 60 | 80 | 100 | 150 | 200 | V |
| Maximum RMS Voltage | 14 | 28 | 42 | 56 | 70 | 105 | 140 | V |
| Maximum DC Blocking Voltage | 20 | 40 | 60 | 80 | 100 | 150 | 200 | V |
| Maximum Average Forward Rectified Current | 5.0 | | | | | | | A |
| Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | 120 | | | | | | | A |
| Maximum Forward Voltage Drop per Bridge Element at 5.0A D.C. | 0.55 | | 0.7 | 0.85 | | 0.9 | | V |
| Maximum DC Reverse Current Ta=25°C | 0.3 | | | 0.2 | | 0.1 | | mA |
| at Rated DC Blocking Voltage Ta=125°C | 10 | | | 5 | | 2 | | mA |
| Typical Thermal Resistance R JA (Note 1) | 75 | | | | | | | °C/W |
| Operating Temperature Range, $T_J$ | -55 —+150 | | | | | | | °C |
| Storage Temperature Range, $T_{STG}$ | -55 —+150 | | | | | | | °C |

NOTE 1: Thermal Resistance Junction to Ambient.

## RATING AND CHARACTERISTIC CURVES

**Fig.1 Forward Current Derating Curve**

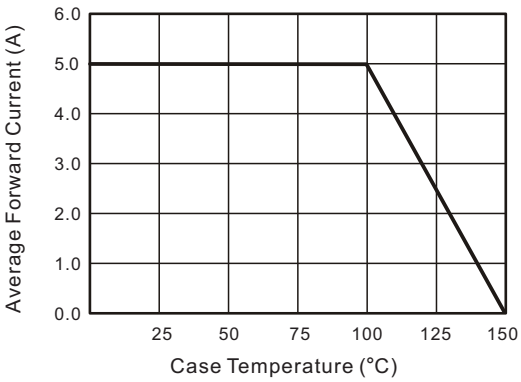



**Fig.2 Typical Reverse Characteristics**

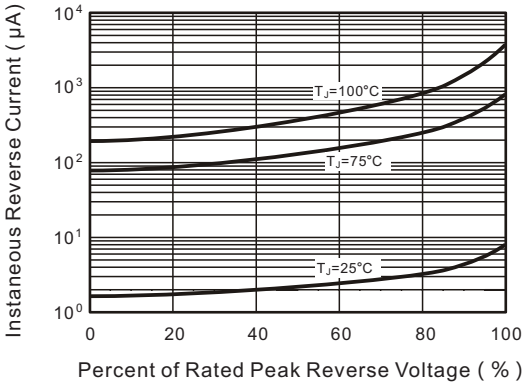



**Fig.3 Typical Forward Characteristic**

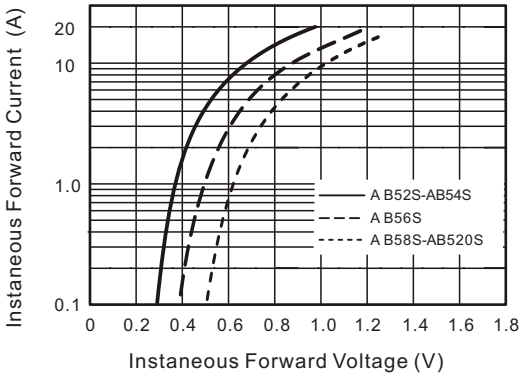



**Fig.4 Typical Junction Capacitance**

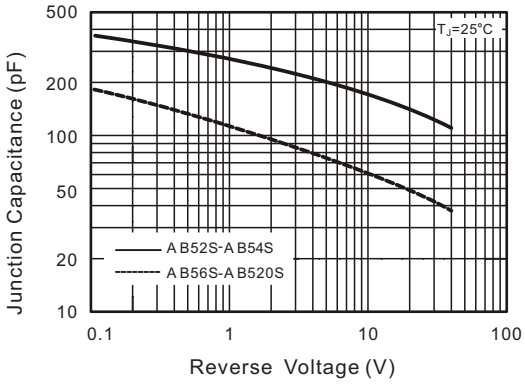



**Fig.5 Maximum Non-Repetitive Peak Forward Surage Current**

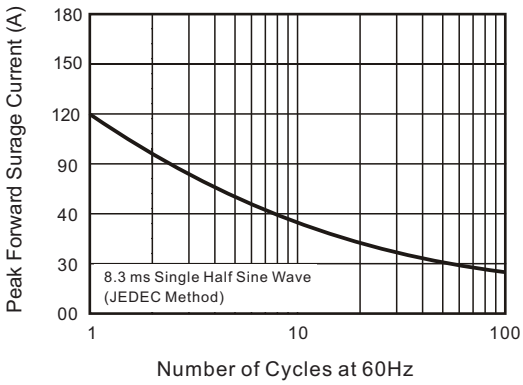
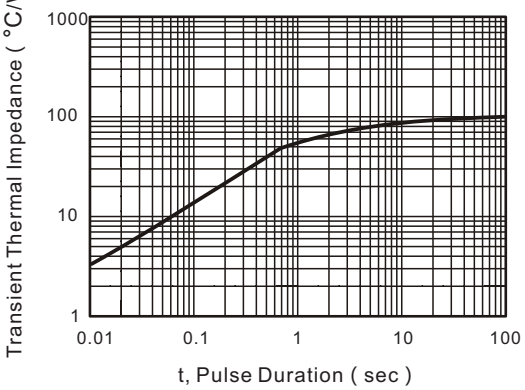


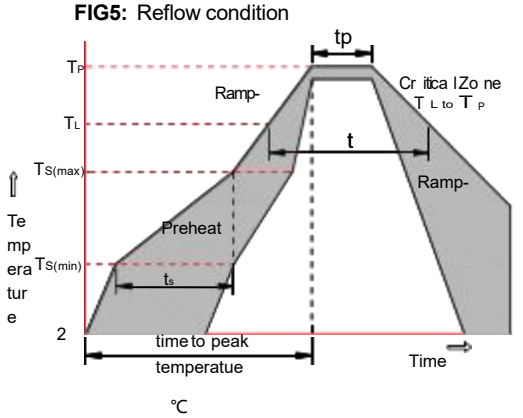

**Fig.6- Typical Transient Thermal Impedance**



## Soldering parameters

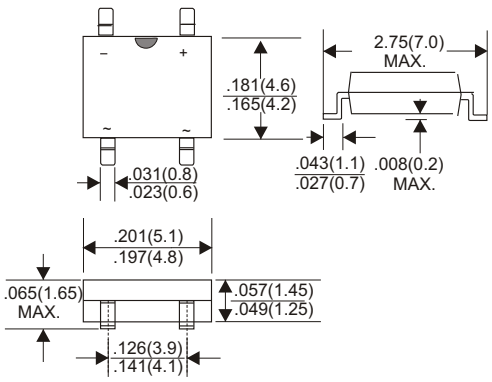
| Reflow Condition | | Pb-Free assembly (see as bellow) |
|---|---|---|
| Pre Heat | -Temperature Min ($T_{s(min)}$) | +150℃ |
| | -Temperature Max($T_{s(max)}$) | +200℃ |
| | -Time (Min to Max) (ts) | 60-180 secs. |
| Average ramp up rate (Liquid us Temp ($T_L$) to peak) | | 3℃/sec. Max |
| $T_{s(max)}$ to $T_L$ - Ramp-up Rate | | 3℃/sec. Max |
| Reflow | -Temperature($T_L$)(Liquid us) | +217℃ |
| | -Temperature($t_L$) | 60-150 secs. |
| Peak Temp ($T_p$) | | +260(+0/-5)℃ |
| Time within 5℃ of actual Peak Temp ($t_p$) | | 30 secs. Max |
| Ramp-down Rate | | 6℃/sec. Max |
| Time 25℃ to Peak Temp ($T_P$) | | 8 min. Max |
| Do not exceed | | +260℃ |

**FIG5:** Reflow condition

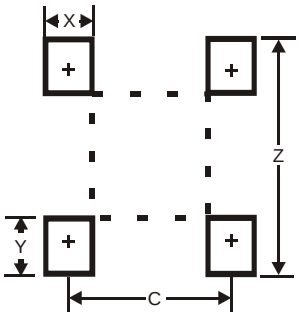



## Package Dimensions & Suggested Pad Layout

**ABS**



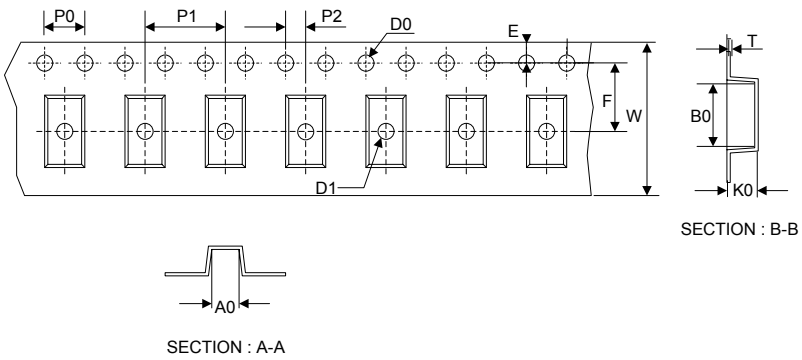

Dimensions in inches and (millimeters)




| Dimensions | |
|---|---|
| Z | 8.4 |
| X | 1.0 |
| Y | 2.2 |
| C | 4.0 |

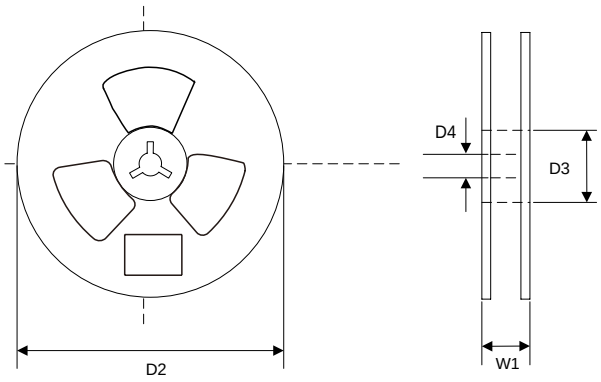
## Tape & rell specification

Tape




| Symbol | Dimension (mm) |
|---|---|
| P0 | 4.00±0.20 |
| P1 | 8.00±0.20 |
| P2 | 2.00±0.20 |
| D0 | 1.60±0.15 |
| D1 | 1.60±0.15 |
| E | 1.75±0.20 |
| F | 5.50±0.15 |
| W | 12.00±0.20 |
| A0 | 5.30±0.20 |
| B0 | 6.80±0.20 |
| K0 | 1.65±0.15 |
| T | 0.23±0.10 |

13” Reel




| | |
|---|---|
| D2 | 330.0±5.0 |
| D3 | 73Min. |
| D4 | 16.0±2.5 |
| W1 | 18.0±3.0 |
| Quantity: 5000PCS | |