

# ABS212

## List

|                                                         |   |
|---------------------------------------------------------|---|
| List.....                                               | 1 |
| Package outline.....                                    | 2 |
| Features.....                                           | 2 |
| Mechanical data.....                                    | 2 |
| Maximum ratings and Electrical characteristics .....    | 2 |
| Rating and characteristic curves.....                   | 3 |
| Pinning information.....                                | 4 |
| Marking.....                                            | 4 |
| Suggested solder pad layout.....                        | 4 |
| Packing information.....                                | 5 |
| Reel packing .....                                      | 6 |
| Suggested thermal profiles for soldering processes..... | 6 |
| High reliability test capabilities.....                 | 7 |

# ABS212

## 2.0A Miniature Glass Passivated Single-Phase Surface Mount Bridge Rectifiers 1200V

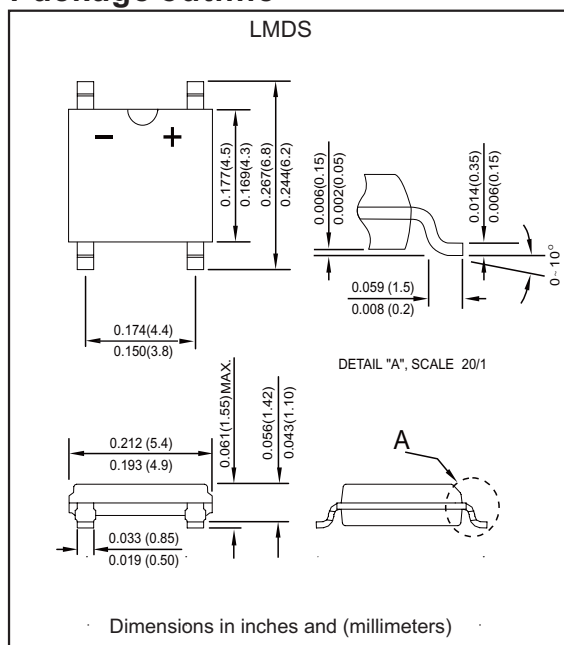
### Features

- Glass passivated junction
- Ideal for printed circuit board
- Reliable low cost construction utilizing molded plastic technique
- High temperature soldering guaranteed:  
260°C / 10 seconds / 0.375" ( 9.5mm )  
lead length at 5 lbs., ( 2.3 kg ) tension
- High surge current capability
- Lead-free parts meet RoHS requirements
- Suffix "-H" indicates Halogen-free part, ex. ABS212-H

### Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, LMDS
- Terminals : Solder plated, solderable per  
MIL-STD-202, Method 208
- Polarity : marked on body
- Mounting Position : Any
- Weight : Approximated 0.0992 gram

### Package outline



### Maximum ratings (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

| PARAMETER                                                                           | SYMBOLS   | ABS212      | UNIT             |
|-------------------------------------------------------------------------------------|-----------|-------------|------------------|
| Repetitive peak reverse voltage                                                     | $V_{RRM}$ | 1200        | V                |
| RMS voltage                                                                         | $V_{RMS}$ | 840         | V                |
| DC Blocking voltage                                                                 | $V_R$     | 1200        | V                |
| Average forward rectified current                                                   | $I_o$     | 2.0         | A                |
| Non-repetitive peak forward surge current 8.3ms single half sine-wave(JEDEC method) | $I_{FSM}$ | 50          | A                |
| Operating junction temperature range                                                | $T_J$     | -55 to +150 | $^\circ\text{C}$ |
| Storage temperature range                                                           | $T_{STG}$ | -55 to +150 | $^\circ\text{C}$ |

### Maximum Electrical characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

| PARAMETER                                       | SYMBOLS | ABS212     | UNIT          |
|-------------------------------------------------|---------|------------|---------------|
| Peak forward voltage at $I_F = 2.0\text{A}$     | $V_F$   | 1.1        | V             |
| DC Reverse current at rated DC Blocking voltage | $I_R$   | 5.0<br>500 | $\mu\text{A}$ |

## Rating and characteristic curves (ABS212)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

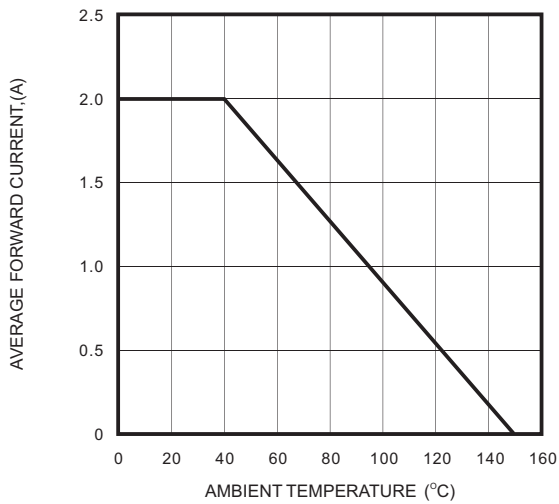


FIG.2-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

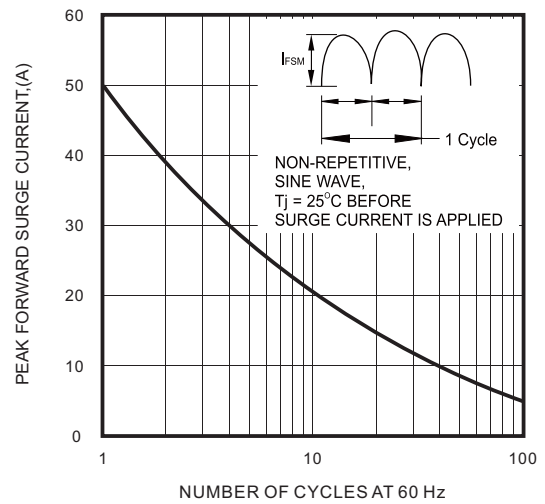


FIG.3-TYPICAL FORWARD CHARACTERISTICS

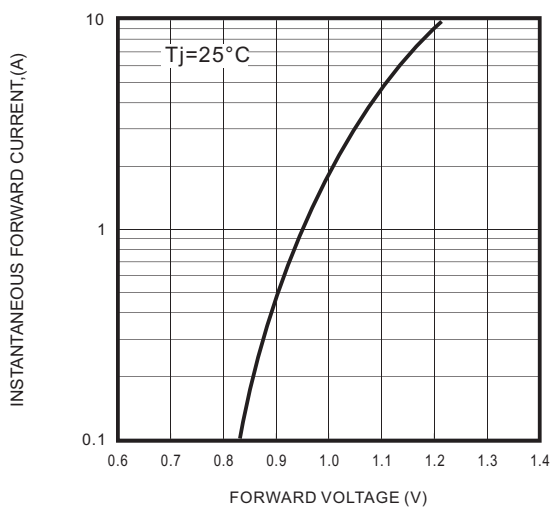
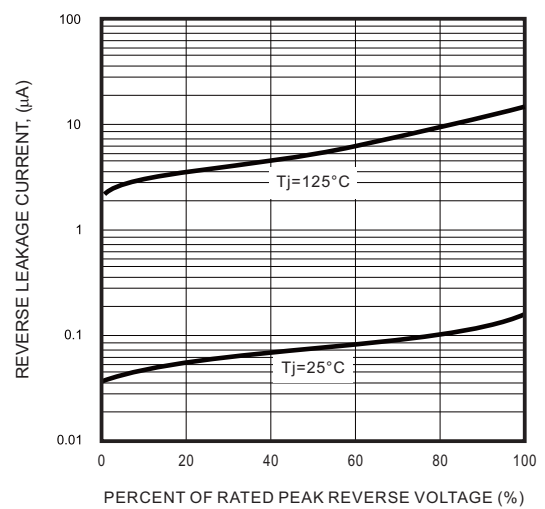
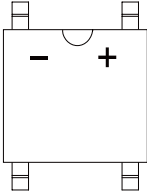
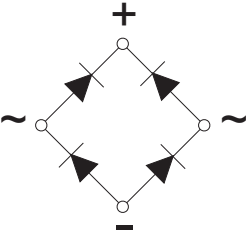


FIG.4-TYPICAL REVERSE CHARACTERISTICS

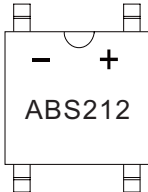
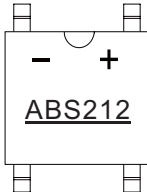


ABS212

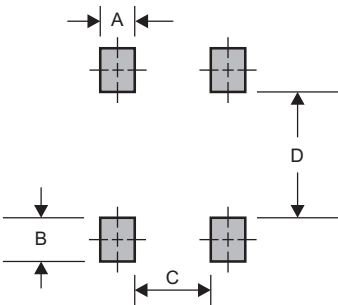
Pinning information

| Simplified outline                                                                | Symbol                                                                            |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  |  |

Marking

| Type number | Marking code                                                                                                                                                                                                                             |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ABS212      | <div>For halogen device</div>  <div>For halogen-free device</div>  |

Suggested solder pad layout

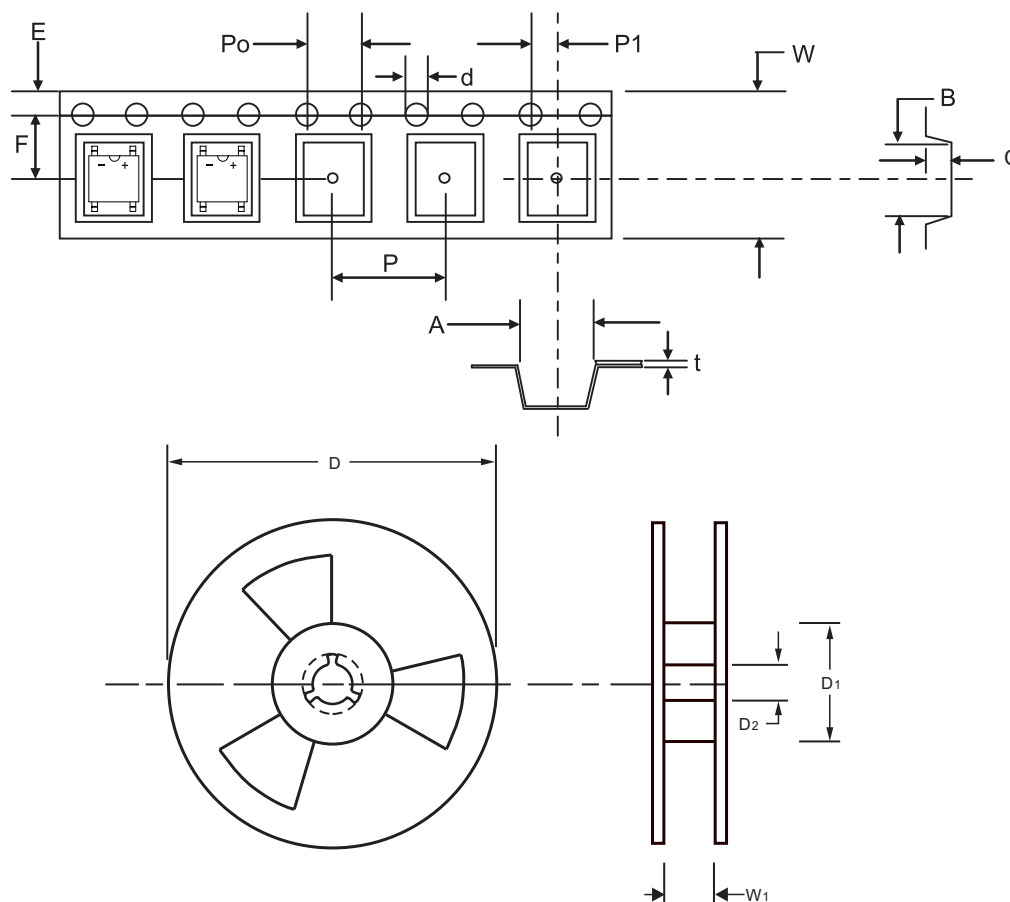


Dimensions in inches and (millimeters)

| PACKAGE | A            | B            | C            | D            |
|---------|--------------|--------------|--------------|--------------|
| LMDS    | 0.032 (0.80) | 0.032 (0.80) | 0.132 (3.35) | 0.193 (4.90) |

# ABS212

## Packing information



unit:mm

| Item                      | Symbol | Tolerance | LMDS    |
|---------------------------|--------|-----------|---------|
| Carrier width             | A      | 0.1       | 5.31    |
| Carrier length            | B      | 0.1       | 6.68    |
| Carrier depth             | C      | 0.1       | 1.60    |
| Sprocket hole             | d      | 0.05      | 1.55    |
| 13" Reel outside diameter | D      | 2.0       | 330.00  |
| 13" Reel inner diameter   | D1     | min       | 50.00   |
| 7" Reel outside diameter  | D      | 2.0       | -       |
| 7" Reel inner diameter    | D1     | min       | -       |
| Feed hole diameter        | D2     | 0.5       | 13.00   |
| Sprocket hole position    | E      | 0.1       | 1.75    |
| Punch hole position       | F      | 0.05      | 5.50    |
| Punch hole pitch          | P      | 0.1       | 8.00    |
| Sprocket hole pitch       | P0     | 0.1       | 4.00    |
| Embossment center         | P1     | 0.05      | 2.00    |
| Overall tape thickness    | t      | 0.1       | 0.30    |
| Tape width                | W      | 0.3       | 12.00   |
| Reel width                | W1     | 1.0       | 12~14.4 |

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

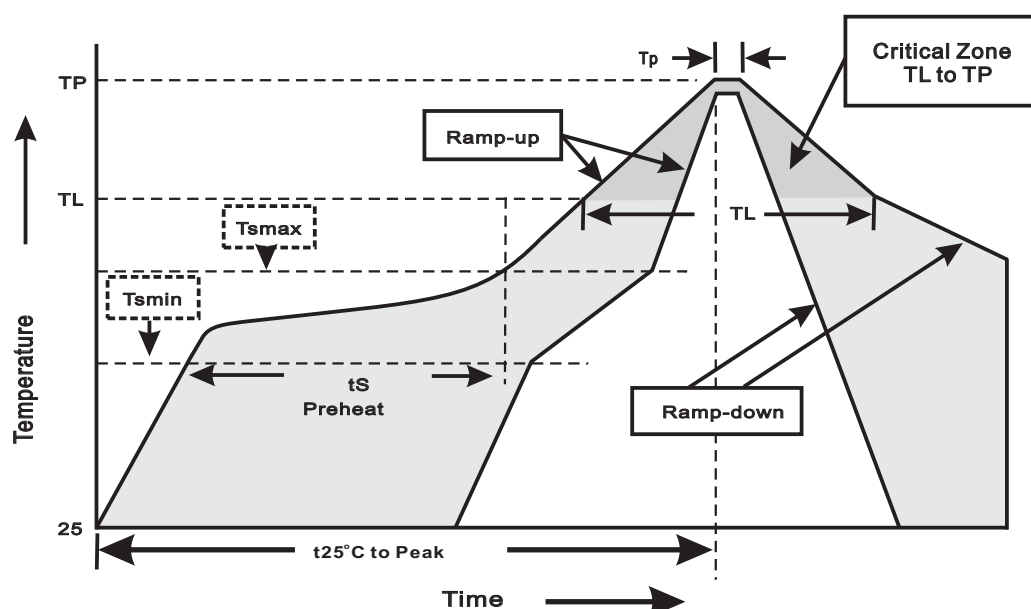
# ABS212

## Reel packing

| PACKAGE | REEL SIZE | REEL (pcs) | COMPONENT SPACING (m/m) | BOX (pcs) | INNER BOX (m/m) | REEL DIA, (m/m) | CARTON SIZE (m/m) | CARTON (pcs) | APPROX. GROSS WEIGHT (kg) |
|---------|-----------|------------|-------------------------|-----------|-----------------|-----------------|-------------------|--------------|---------------------------|
| LMDS    | 11"       | 3,000      | 8.0                     | 6,000     | 335*335*38      | 330             | 350*330*360       | 48,000       | 12.4                      |
|         | 13"       | 5,000      | 8.0                     | 10,000    | 335*335*38      | 330             | 350*330*360       | 80,000       | 19.0                      |

## Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



### 3.Reflow soldering

| Profile Feature                                                                        | Soldering Condition         |
|----------------------------------------------------------------------------------------|-----------------------------|
| Average ramp-up rate(TL to TP)                                                         | <3°C/sec                    |
| Preheat<br>-Temperature Min(Tsmin)<br>-Temperature Max(Tsmax)<br>-Time(min to max)(ts) | 150°C<br>200°C<br>60~120sec |
| Tsmax to TL<br>-Ramp-upRate                                                            | <3°C/sec                    |
| Time maintained above:<br>-Temperature(TL)<br>-Time(tL)                                | 217°C<br>60~260sec          |
| Peak Temperature(TP)                                                                   | 255°C-0/+5°C                |
| Time within 5°C of actual Peak Temperature(tp)                                         | 10~30sec                    |
| Ramp-down Rate                                                                         | <6°C/sec                    |
| Time 25°C to Peak Temperature                                                          | <6minutes                   |

# ABS212

## High reliability test capabilities

| Item Test                         | Conditions                                                                                                                               | Reference                     |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| 1. Solder Resistance              | at $260 \pm 5^\circ\text{C}$ for 10 sec.                                                                                                 | MIL-STD-750D<br>METHOD-2031   |
| 2. Solderability                  | at $245 \pm 5^\circ\text{C}$ for 5 sec.                                                                                                  | MIL-STD-202F<br>METHOD-208    |
| 3. High Temperature Reverse Bias  | $V_R = 80\%$ rate at $T_J = 150^\circ\text{C}$ for 168 hrs.                                                                              | MIL-STD-750D<br>METHOD-1038   |
| 4. Forward Operation Life         | Rated average rectifier current at $T_A = 25^\circ\text{C}$ for 500hrs.                                                                  | MIL-STD-750D<br>METHOD-1027   |
| 5. Intermittent Operation Life    | $T_A = 25^\circ\text{C}$ , $I_F = I_O$<br>On state: power on for 5 min.<br>off state: power off for 5 min.<br>on and off for 500 cycles. | MIL-STD-750D<br>METHOD-1036   |
| 6. Pressure Cooker                | $15P_{SIG}$ at $T_A = 121^\circ\text{C}$ for 4 hrs.                                                                                      | JESD22-A102                   |
| 7. Temperature Cycling            | $-55^\circ\text{C}$ to $+125^\circ\text{C}$ dwelled for 30 min.<br>and transferred for 5min. total 10 cycles.                            | MIL-STD-750D<br>METHOD-1051   |
| 8. Forward Surge                  | 8.3ms single half sine-wave , one surge.                                                                                                 | MIL-STD-750D<br>METHOD-4066-2 |
| 9. Humidity                       | at $T_A = 85^\circ\text{C}$ , RH=85% for 1000hrs.                                                                                        | MIL-STD-750D<br>METHOD-1021   |
| 10. High Temperature Storage Life | at $150^\circ\text{C}$ for 1000 hrs.                                                                                                     | MIL-STD-750D<br>METHOD-1031   |