# B1AW-S THRU B1JW-S

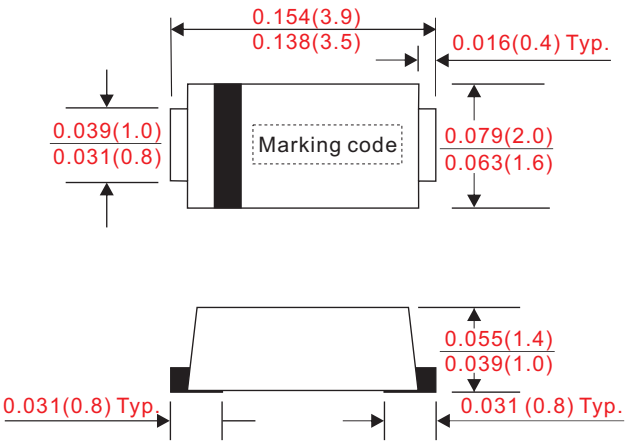
**1A Surface Mount Super Fast Rectifiers**

## ■ Features

- Low profile surface mounted application in order to optimize board space.
- High current capability, low forward voltage drop.
- High surge capability.
- Superfast recovery time for switching mode application.
- Glass passivated chip junction.
- Suffix "G" indicates Halogen-free part, ex.B1AWG-S.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

## ■ Outline

SOD-123S




Dimensions in inches and (millimeters)

## ■ Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SOD-123S
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Weight : Approximated 0.018 gram

## ■ Maximum ratings and electrical characteristics

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

| Parameter | Conditions | Symbol | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Forward rectified current | | $I_O$ | | | 1.0 | A |
| Forward surge current | 8.3ms single half sine-wave superimposed on rate load (JEDEC method) | $I_{FSM}$ | | | 30 | A |
| Reverse current | $V_R = V_{RRM}$ $T_A = 25°C$ | $I_R$ | | | 5.0 | uA |
| | $V_R = V_{RRM}$ $T_A = 125°C$ | | | | 100 | |
| Diode junction capacitance | f=1MHz and applied 4V DC reverse voltage | $C_J$ | | 10 | | pF |
| Storage temperature | | $T_{STG}$ | -55 | | +150 | °C |

| Symbol | Marking code | Max. repetitive peak reverse voltage $V_{RRM}$ (V) | Max. RMS voltage $V_{RMS}$ (V) | Max. DC blocking voltage $V_R$ (V) | Max. forward voltage @1A, $T_A = 25°C$ $V_F$ (V) | Max. reverse recovery time(1) $T_{rr}$ (ns) | Operating temperature $T_J$ (°C) |
|---|---|---|---|---|---|---|---|
| B1AW-S | 1A | 50 | 35 | 50 | 0.95 | 35 | -55 ~ +150 |
| B1BW-S | 1B | 100 | 70 | 100 | | | |
| B1DW-S | 1D | 200 | 140 | 200 | | | |
| B1GW-S | 1G | 400 | 280 | 400 | 1.25 | | |
| B1JW-S | 1J | 600 | 420 | 600 | 1.70 | | |

Note : 1. $I_F$ = 0.5A, $I_R$ = 1.0A , $I_{RR}$ = 0.25A



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■ Rating and characteristic curves

FIG.1-TYPICAL FORWARD CHARACTERISTICS

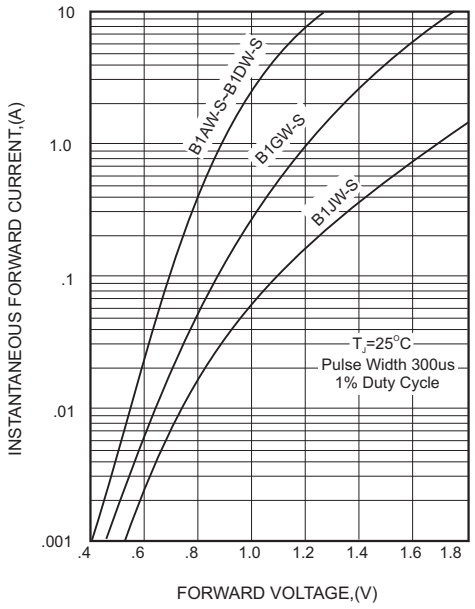



FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE

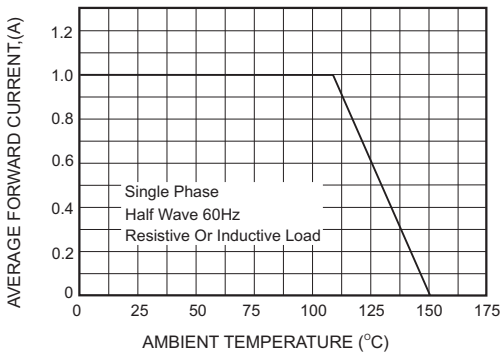
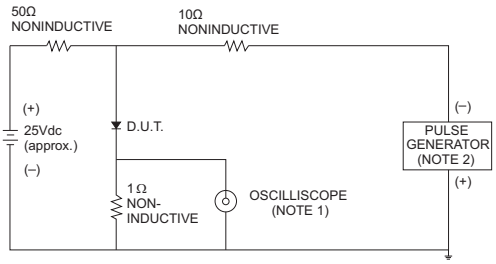
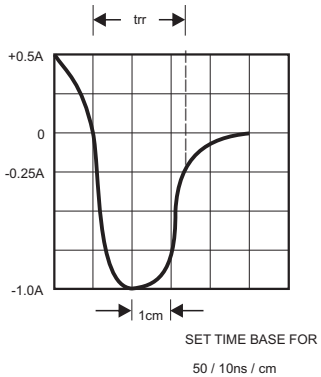



FIG.3- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS




NOTES: 1. Rise Time= 7ns max., Input Impedance= 1 megohm.22pF.

2. Rise Time= 10ns max., Source Impedance= 50 ohms.




SET TIME BASE FOR
50 / 10ns / cm

FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

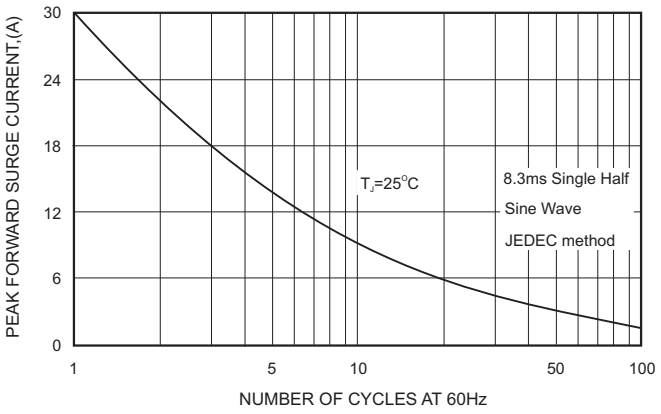
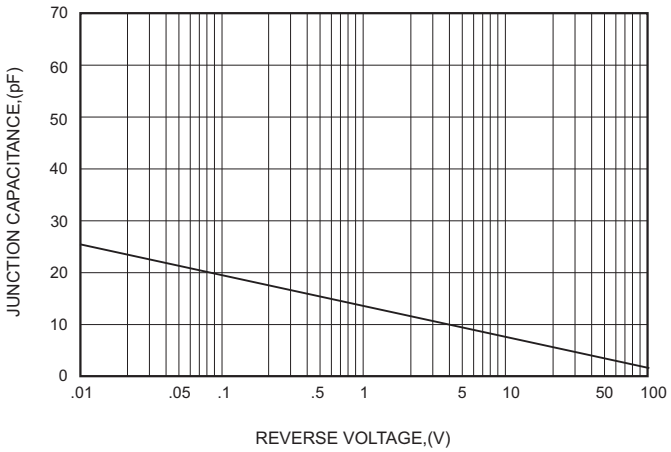



FIG.5-TYPICAL JUNCTION CAPACITANCE







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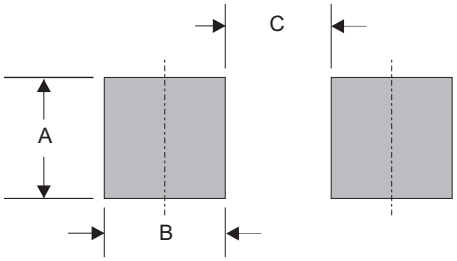
■ SOD-123S foot print




| A | B | C |
|---|---|---|
| 0.044 (1.10) | 0.039 (1.00) | 0.079 (2.00) |

Dimensions in inches and (millimeters)

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