

## MBR120HW/MBR140HW SURFACE MOUNT SCHOTTKY BARRIER DIODE

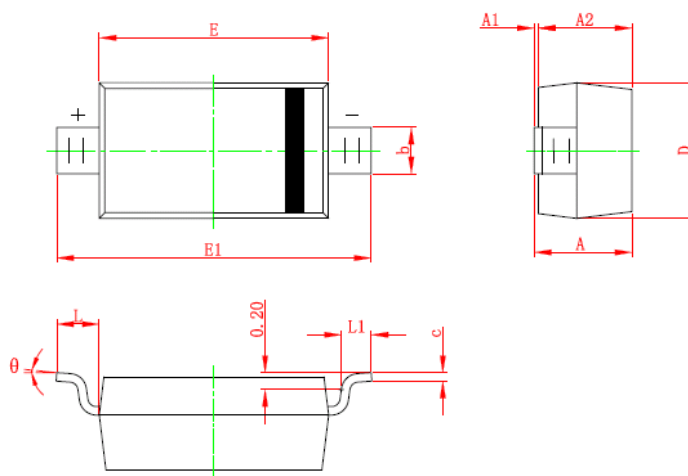
### Features:

- Low Turn-on Voltage
- Fast Switching
- PN Junction Guard Ring Transient and ESD Protection
- Designed for Surface Mount Application
- Plastic Material —UL Recognition Flammability Classification 94V-O
- Green Products in Compliance with the ROHS Directive
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Mechanical Data:

- Case: SOD-123, Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.01 grams(approx)

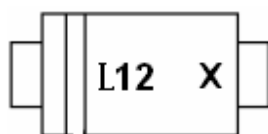
### Mechanical Dimensions: In mm / Inches



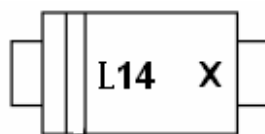
| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 1.050                     | 1.250 | 0.041                | 0.049 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 1.050                     | 1.150 | 0.041                | 0.045 |
| b      | 0.450                     | 0.650 | 0.018                | 0.026 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 1.500                     | 1.700 | 0.059                | 0.067 |
| E      | 2.600                     | 2.800 | 0.102                | 0.110 |
| E1     | 3.550                     | 3.850 | 0.140                | 0.152 |
| L      | 0.500 REF                 |       | 0.020 REF            |       |
| L1     | 0.250                     | 0.450 | 0.010                | 0.018 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |

### SOD-123(CJ)

## Marking Diagram:



**MBR120HW**



**MBR140HW**

Where X is Date Code

L12/L14 = Part Name

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

## Ordering Information:

| Device            | Package          | Shipping       |
|-------------------|------------------|----------------|
| MBR120HW/MBR140HW | SOD-123(Pb-Free) | 3000pcs / reel |

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.



**Maximum Ratings** @T<sub>A</sub>=25°C unless otherwise specified

| Characteristic                                                                                                        | Symbol                            | MBR120HW    | MBR140HW | Unit |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------|----------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                                | VRRM<br>VRWM<br>VR                | 20          | 40       | V    |
| Forward Continuous Current (Note 1)                                                                                   | IF                                | 1.0         |          | A    |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single half sine-wave superimposed on rated load<br>(JEDEC Method) | IFSM                              | 25          |          | A    |
| Power Dissipation (Note 1)                                                                                            | Pd                                | 450         |          | mW   |
| Typical Thermal Resistance, Junction to Ambient Air (Note 1)                                                          | R <sub>θJA</sub>                  | 222         |          | °C/W |
| Operating and Storage Temperature Range                                                                               | T <sub>J</sub> , T <sub>STG</sub> | -65 to +125 |          | °C   |

**Electrical Characteristics** @T<sub>A</sub>=25°C unless otherwise specified

| Characteristic                                                  | Symbol          | MBR120HW | MBR140HW | Unit |
|-----------------------------------------------------------------|-----------------|----------|----------|------|
| Forward Voltage Drop @I <sub>F</sub> = 1.0A                     | V <sub>FM</sub> | 0.45     | 0.55     | V    |
| Peak Reverse Leakage Current @ DC Blocking Voltage              | I <sub>RM</sub> | 0.4      | 0.5      | mA   |
| Typical Junction Capacitance (V <sub>R</sub> = 4V DC, f = 1MHz) | C <sub>J</sub>  | 50       |          | pF   |

Note: 1. Valid provided that terminals are kept at ambient temperature.

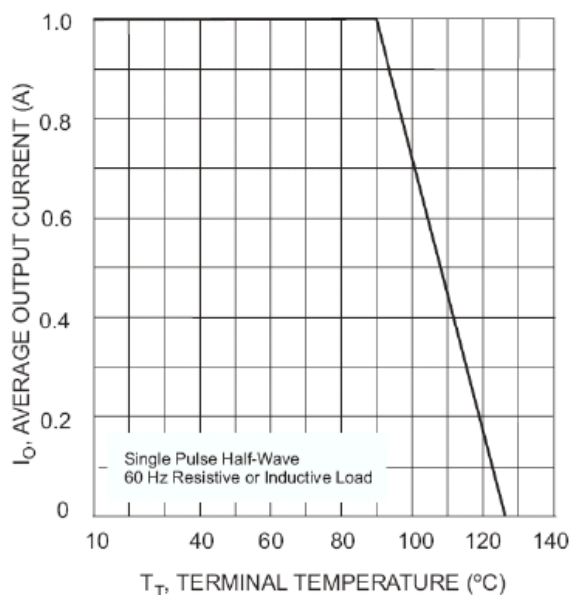


Fig. 1 Forward Current Derating Curve

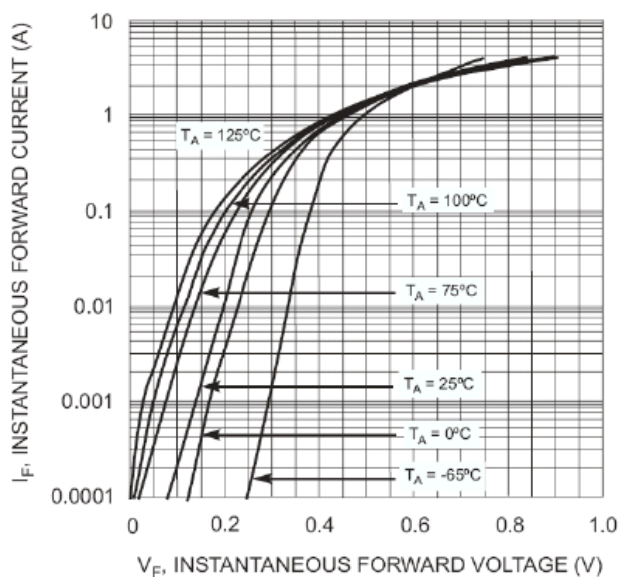


Fig. 2 Typical Forward Characteristics

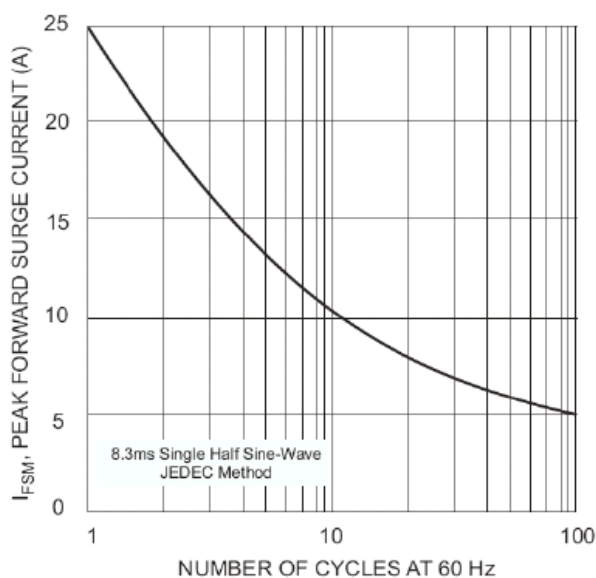


Fig. 3 Maximum Non-Repetitive Peak Fwd Surge Current

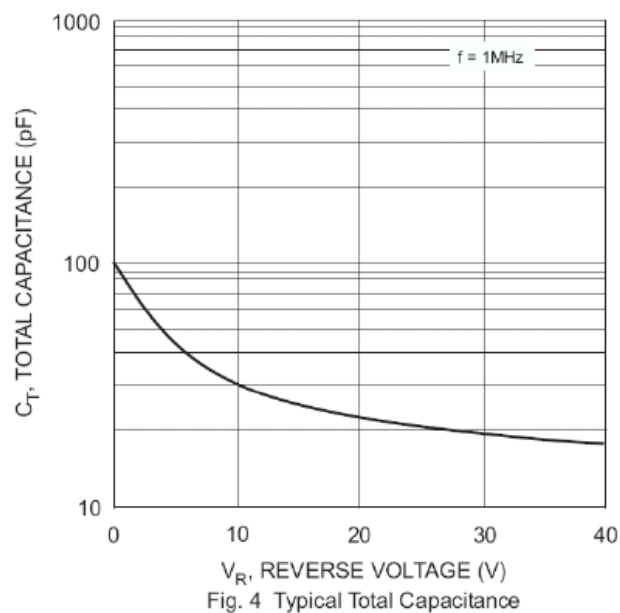


Fig. 4 Typical Total Capacitance

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