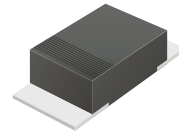


## CDBM120-G Thru. CDBM1150-G

**Reverse Voltage: 20 to 150 Volts**

**Forward Current: 1.0 Amp**

**RoHS Device**

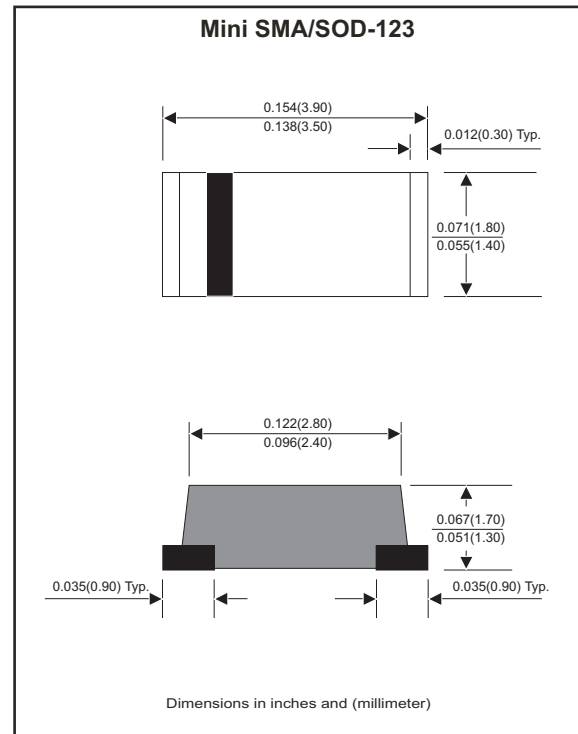


### Features

- Batch process design, excellent power dissipation offers better reverse leakage current and thermal resistance.
- Low profile surface mounted application in order to optimize board space.
- Tiny plastic SMD package.
- Low power loss, high efficiency.
- High current capability, low forward voltage drop.
- High surge capability.
- Guardring for overvoltage protection.
- Ultra high-speed switching.
- Silicon epitaxial planar chip, metal silicon junction.
- Lead-free parts meet environmental standards of MIL-STD-19500 / 228

### Mechanical data

- Case: Molded plastic, JEDEC Mini SMA/SOD-123.
- Terminals: Solder plated, solderable per MIL-STD-750, method 2026.
- Polarity: Indicated by cathode band.
- Mounting position: Any
- Weight: 0.027 gram (approx.).



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

| Parameter                                                                                           | Symbol           | CDBM<br>120-G | CDBM<br>130-G | CDBM<br>140-G | CDBM<br>150-G | CDBM<br>160-G | CDBM<br>180-G | CDBM<br>1100-G | CDBM<br>1150-G | Unit |
|-----------------------------------------------------------------------------------------------------|------------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|------|
| Repetitive peak reverse voltage                                                                     | V <sub>RRM</sub> | 20            | 30            | 40            | 50            | 60            | 80            | 100            | 150            | V    |
| Maximum RMS voltage                                                                                 | V <sub>RMS</sub> | 14            | 21            | 28            | 35            | 42            | 56            | 70             | 105            | V    |
| Continuous reverse voltage                                                                          | V <sub>R</sub>   | 20            | 30            | 40            | 50            | 60            | 80            | 100            | 150            | V    |
| Maximum forward voltage @I <sub>F</sub> =1.0A                                                       | V <sub>F</sub>   | 0.50          |               |               | 0.70          |               | 0.85          |                | 0.92           | V    |
| Forward rectified current                                                                           | I <sub>O</sub>   | 1.0           |               |               |               |               |               |                |                | A    |
| Forward surge current, 8.3ms half sine wave superimposed on rated load (JEDEC method)               | I <sub>FSM</sub> | 30            |               |               |               |               |               |                |                | A    |
| Reverse current on V <sub>R</sub> =V <sub>RRM</sub> @T <sub>A</sub> =25°C<br>@T <sub>A</sub> =125°C | I <sub>R</sub>   | 0.5<br>10     |               |               |               |               |               |                |                | mA   |
| Typ. thermal resistance, junction to ambient air                                                    | R <sub>θJA</sub> | 98            |               |               |               |               |               |                |                | °C/W |
| Typ. diode junction capacitance (Note 1)                                                            | C <sub>J</sub>   | 120           |               |               |               |               |               |                |                | pF   |
| Operating junction temperature                                                                      | T <sub>J</sub>   | -55 to +125   |               |               | -55 to +150   |               |               |                |                | °C   |
| Storage temperature                                                                                 | T <sub>STG</sub> | -65 to +175   |               |               |               |               |               |                |                | °C   |

Note 1:  $f=1\text{MHz}$  and applied 4V DC reverse voltage.

## Rating and Characteristic Curves (CDBM120-G Thru. CDBM1150-G)

Fig.1 Reverse Characteristics

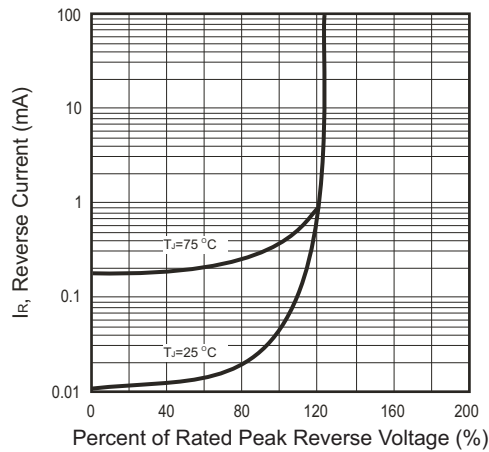


Fig.2 Forward Characteristics

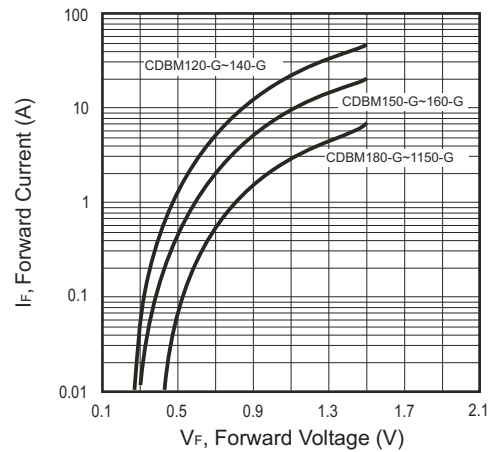


Fig.3 Junction Capacitance

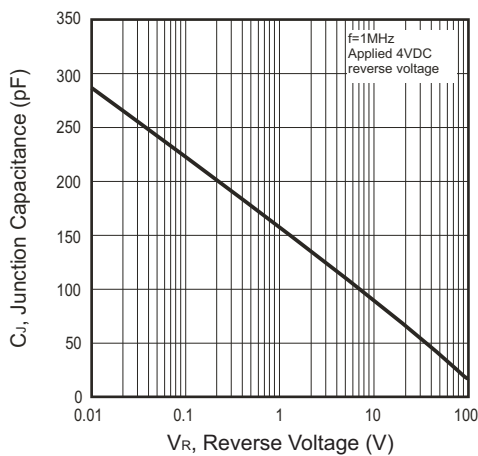


Fig.4 Current Derating Curve

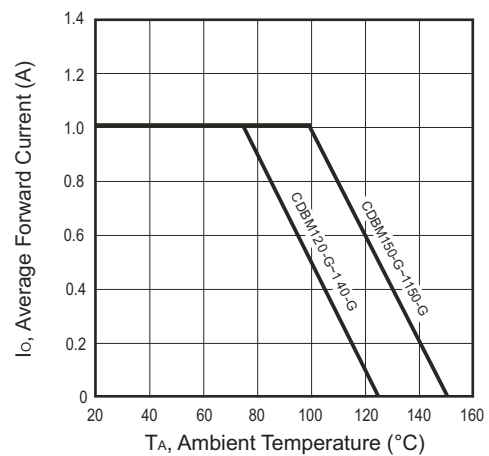
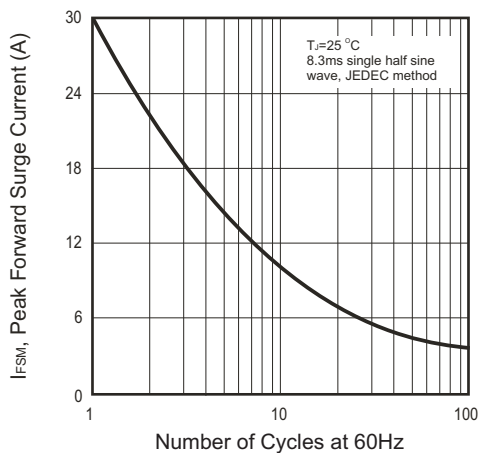
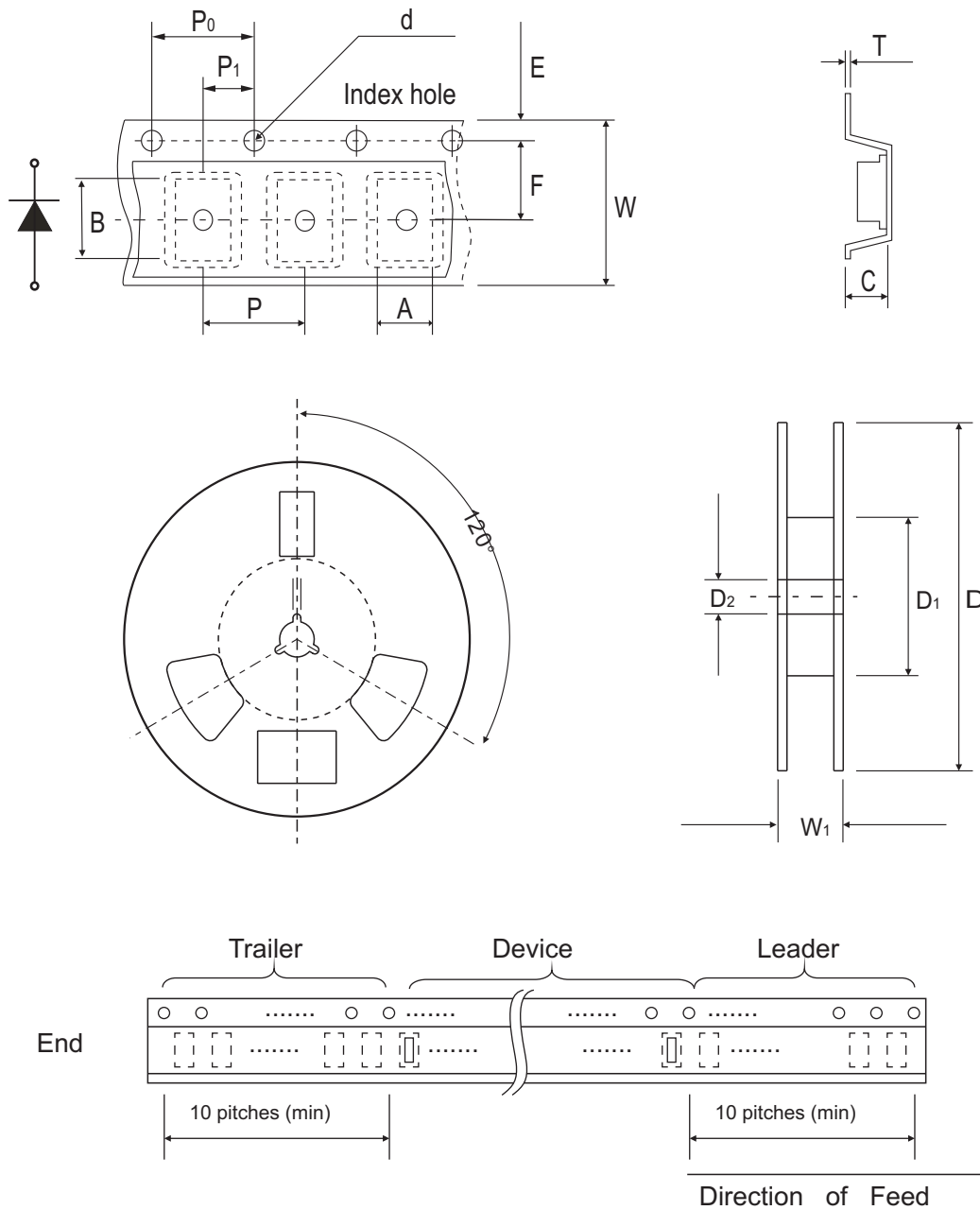


Fig.5 Non-repetitive Forward Surge Current



## Reel Taping Specification

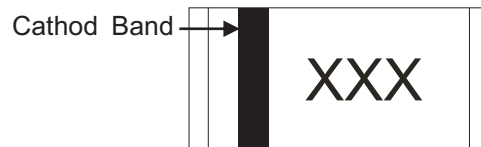


|                  | SYMBOL | A                | B                | C                | d                 | D                | D1         | D2                |
|------------------|--------|------------------|------------------|------------------|-------------------|------------------|------------|-------------------|
| Mini-SMA/SOD-123 | (mm)   | $1.90 \pm 0.10$  | $3.90 \pm 0.10$  | $1.68 \pm 0.10$  | $1.50 \pm 0.10$   | $178 \pm 2.00$   | 62.0 MIN.  | $13.0 \pm 0.50$   |
|                  | (inch) | $0.075 \pm 0.04$ | $0.153 \pm 0.04$ | $0.066 \pm 0.04$ | $0.059 \pm 0.004$ | $7.00 \pm 0.079$ | 2.440 MIN. | $0.512 \pm 0.020$ |

|                  | SYMBOL | E                 | F                 | P                 | P0                | P1                | T                 | W                 | W1                |
|------------------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Mini-SMA/SOD-123 | (mm)   | $1.75 \pm 0.10$   | $3.50 \pm 0.10$   | $4.00 \pm 0.10$   | $4.00 \pm 0.10$   | $2.00 \pm 0.10$   | $0.23 \pm 0.10$   | $8.00 \pm 0.30$   | $14.4 \pm 0.10$   |
|                  | (inch) | $0.689 \pm 0.004$ | $0.138 \pm 0.004$ | $0.157 \pm 0.004$ | $0.157 \pm 0.004$ | $0.079 \pm 0.004$ | $0.009 \pm 0.004$ | $0.315 \pm 0.011$ | $0.567 \pm 0.004$ |

## Marking Code

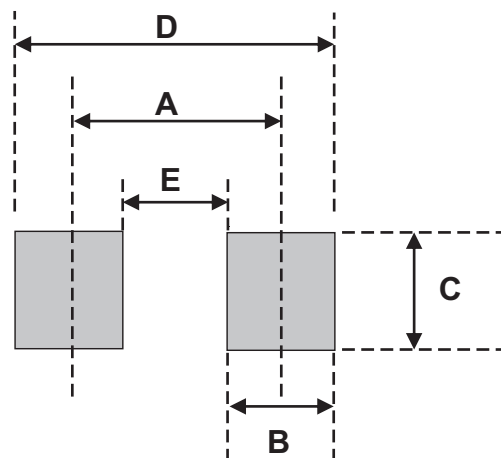
| Park Number | Marking Code |
|-------------|--------------|
| CDBM120-G   | 12           |
| CDBM130-G   | 13           |
| CDBM140-G   | 14           |
| CDBM150-G   | 15           |
| CDBM160-G   | 16           |
| CDBM180-G   | 18           |
| CDBM1100-G  | 10           |
| CDBM1150-G  | 115          |



xxx = Product type marking code

## Suggested PAD Layout

| SIZE | Mini-SMA/SOD-123 |        |
|------|------------------|--------|
|      | (mm)             | (inch) |
| A    | 3.30             | 0.130  |
| B    | 1.40             | 0.055  |
| C    | 1.90             | 0.075  |
| D    | 5.70             | 0.225  |
| E    | 1.90             | 0.075  |



## Standard Packaging

| Case Type            | REEL PACK       |                     |
|----------------------|-----------------|---------------------|
|                      | REEL<br>( pcs ) | Reel Size<br>(inch) |
| Mini-SMA<br>/SOD-123 | 2,500           | 7                   |