

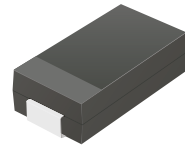
## CDBC320-HF Thru. CDBC3100-HF

**Reverse Voltage: 20 to 100 Volts**

**Forward Current: 3.0 Amp**

**RoHS Device**

**Halogen Free**

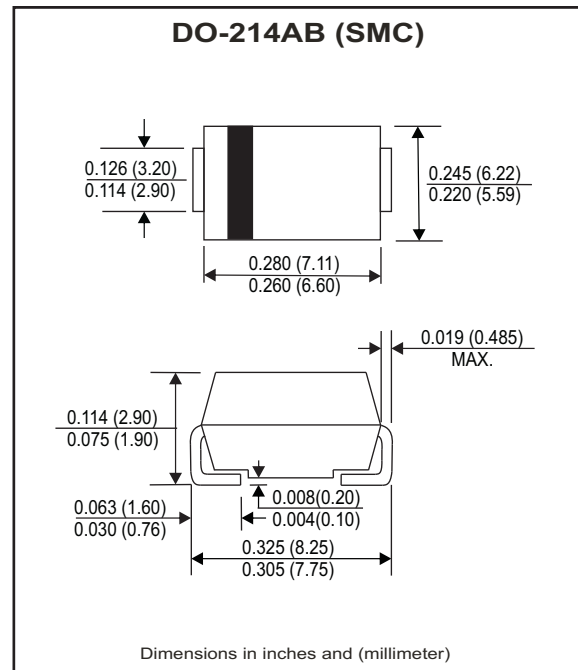


### Features

- Low Profile surface mount applications in order to optimize board space.
- Low power loss, high efficiency.
- High current capability, low forward voltage drop.
- High surge capability.
- Guard ring for overvoltage protection.
- Ultra high-speed switching.
- Silicon epitaxial planar chip, metal silicon junction.

### Mechanical data

- Epoxy: UL94-V0 rate flame retardant.
- Case: Molded plastic, DO-214AB / SMC
- Terminals: solderable per MIL-STD-750, method 2026.
- Polarity: Indicated by cathode band.
- Weight: 0.226 grams(Approx.)



### Circuit Diagram



### Maximum Ratings and Electrical Characteristics

Ratings at  $T_a=25^{\circ}\text{C}$  unless otherwise noted.  
Single phase, half wave, 60Hz, resistive or inductive loaded.  
For capacitive load, derate current by 20% .

| Parameter                                                           | Symbol    | CDBC 320-HF | CDBC 340-HF | CDBC 360-HF | CDBC 3100-HF | Unit               |
|---------------------------------------------------------------------|-----------|-------------|-------------|-------------|--------------|--------------------|
| Max. repetitive peak reverse voltage                                | $V_{RRM}$ | 20          | 40          | 60          | 100          | V                  |
| Max. DC blocking voltage                                            | $V_{DC}$  | 20          | 40          | 60          | 100          | V                  |
| Max. RMS voltage                                                    | $V_{RMS}$ | 14          | 28          | 42          | 70           | V                  |
| Max. instantaneous forward voltage @ 3.0A, $T_A=25^{\circ}\text{C}$ | $V_F$     | 0.45        | 0.50        | 0.70        | 0.81         | V                  |
| Operating Temperature                                               | $T_J$     | -50 to +150 |             |             |              | $^{\circ}\text{C}$ |

| Parameter                  | Conditions                                                           | Symbol          | MIN. | TYP. | MAX. | Units                |
|----------------------------|----------------------------------------------------------------------|-----------------|------|------|------|----------------------|
| Forward rectified current  | see Fig.1                                                            | $I_O$           |      |      | 3.0  | A                    |
| Forward surge current      | 8.3ms single half sine-wave superimposed on rate load (JEDEC method) | $I_{FSM}$       |      |      | 70   | A                    |
| Reverse Current            | $V_R = V_{RRM}$ $T_A=25^{\circ}\text{C}$                             | $I_R$           |      |      | 0.5  | mA                   |
|                            | $V_R = V_{RRM}$ $T_A=100^{\circ}\text{C}$                            | $I_R$           |      |      | 20   | mA                   |
| Thermal Resistance         | Junction to ambient                                                  | $R_{\theta JA}$ |      | 55   |      | $^{\circ}\text{C/W}$ |
| Diode Junction capacitance | f=1MHz and applied 4V DC reverse Voltage                             | $C_J$           |      | 250  |      | pF                   |
| Storage temperature        |                                                                      | $T_{STG}$       | -50  |      | +175 | $^{\circ}\text{C}$   |

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## RATING AND CHARACTERISTIC CURVES (CDBC320-HF thru. CDBC3100-HF)

Fig.1 - Typical Forward Current Derating Curve

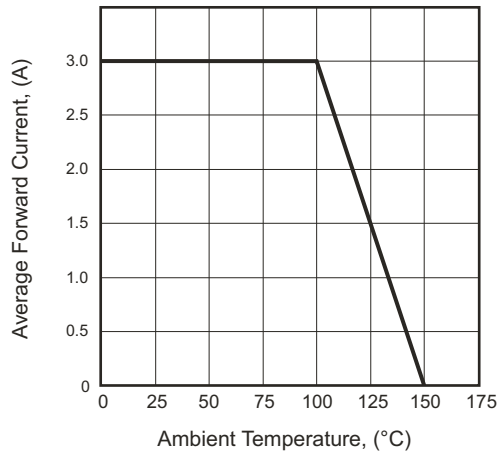


Fig.2 - Typical Forward Characteristics

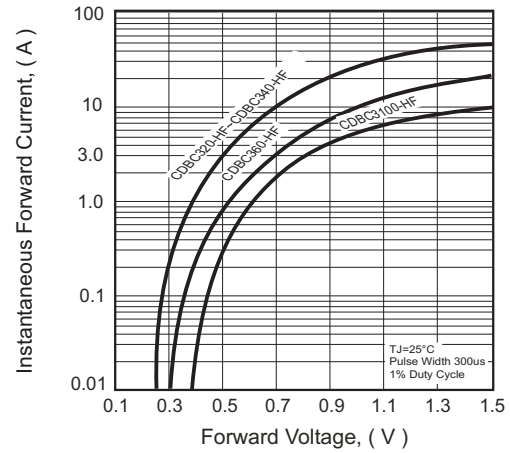


Fig.3 - Maximum Non-repetitive Forward Surge Current

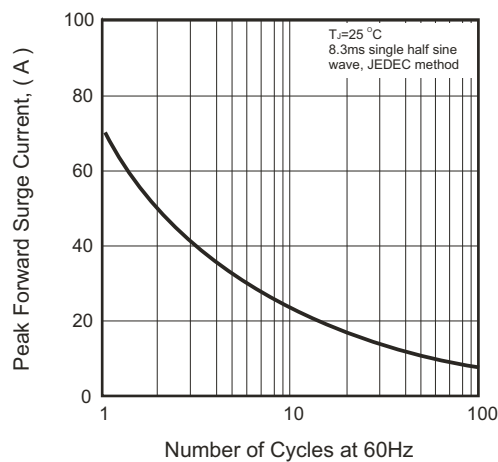


Fig.4 - Typical Junction Capacitance

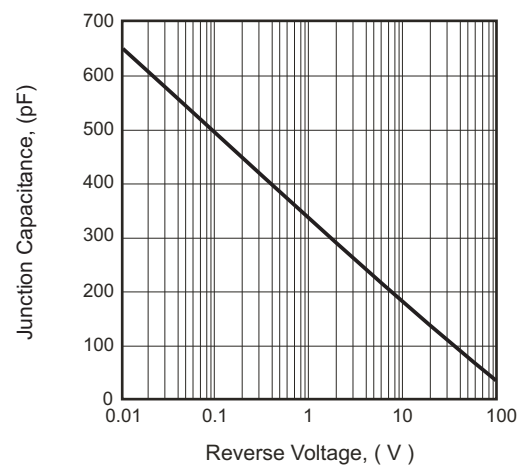
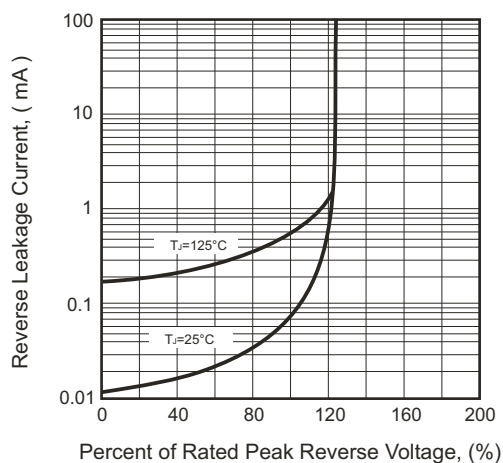


Fig.5 - Typical Reverse Characteristics

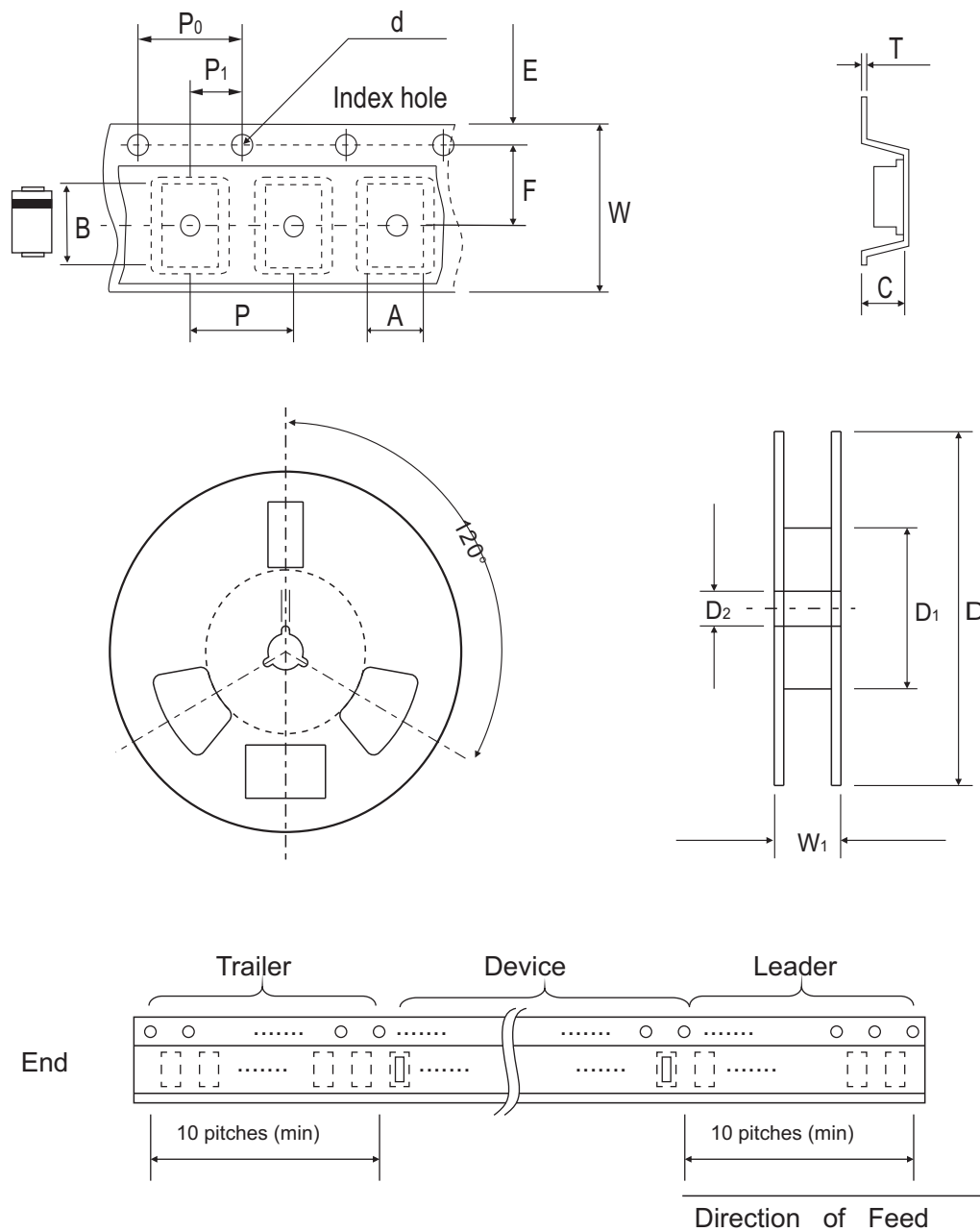


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## Reel Taping Specification



| DO-214AB<br>(SMC) | SYMBOL | A                 | B                 | C                 | d                 | D                 | D <sub>1</sub> | D <sub>2</sub>    |
|-------------------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|----------------|-------------------|
|                   | (mm)   | $6.30 \pm 0.10$   | $8.60 \pm 0.10$   | $2.90 \pm 0.10$   | $1.50 \pm 0.10$   | $330 \pm 2.00$    | 50.0 MIN.      | $13.50 \pm 0.50$  |
|                   | (inch) | $0.248 \pm 0.004$ | $0.339 \pm 0.004$ | $0.114 \pm 0.004$ | $0.059 \pm 0.004$ | $12.99 \pm 0.079$ | 1.969 MIN.     | $0.531 \pm 0.020$ |

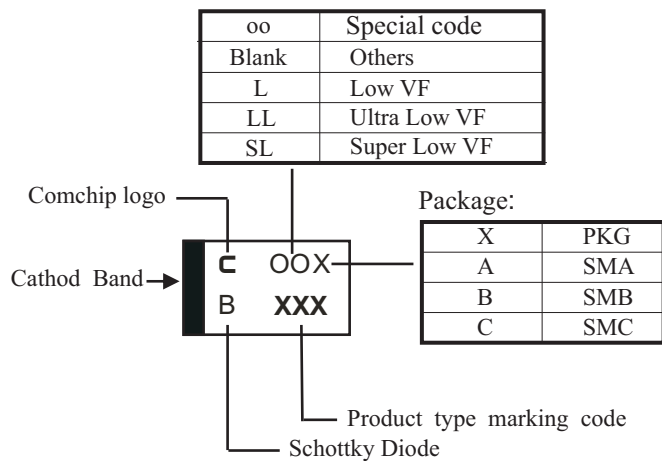
| DO-214AB<br>(SMC) | SYMBOL | E                 | F                 | P                 | P <sub>0</sub>    | P <sub>1</sub>    | T                 | W                 | W <sub>1</sub>    |
|-------------------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|                   | (mm)   | $1.75 \pm 0.10$   | $7.50 \pm 0.10$   | $8.00 \pm 0.10$   | $4.00 \pm 0.10$   | $2.00 \pm 0.10$   | $0.60 \pm 0.10$   | $16.00 \pm 0.30$  | $22.40 \pm 1.00$  |
|                   | (inch) | $0.069 \pm 0.004$ | $0.295 \pm 0.004$ | $0.315 \pm 0.004$ | $0.157 \pm 0.004$ | $0.079 \pm 0.004$ | $0.236 \pm 0.004$ | $0.630 \pm 0.012$ | $0.882 \pm 0.039$ |

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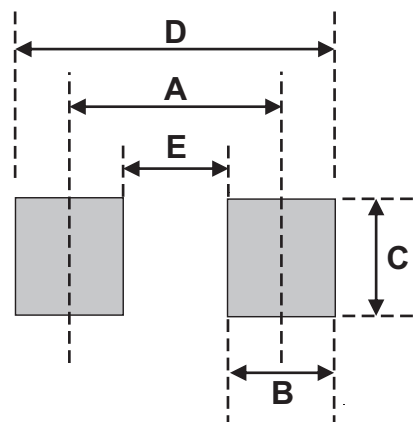
## Marking Code

| Part Number | Marking Code |
|-------------|--------------|
| CDBC320-HF  | 320          |
| CDBC340-HF  | 340          |
| CDBC360-HF  | 360          |
| CDBC3100-HF | 3100         |



## Suggested PAD Layout

| SIZE | DO-214AB (SMC) |        |
|------|----------------|--------|
|      | (mm)           | (inch) |
| A    | 6.90           | 0.272  |
| B    | 2.50           | 0.098  |
| C    | 3.30           | 0.130  |
| D    | 9.40           | 0.370  |
| E    | 4.40           | 0.173  |



## Standard Packaging

| Case Type      | REEL PACK    |                  |
|----------------|--------------|------------------|
|                | REEL ( pcs ) | Reel Size (inch) |
| DO-214AB (SMC) | 3,000        | 13               |